

Web Annexes

WHO Guidelines for the health sector response to child maltreatment

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Remarks: The systematic reviews contain the search strategies and the PRISMA flowcharts.

Web Annex 1: Summary of declared interests from Guideline Development Group (GDG) members and how they were managed

The declarations of interest of the GDG members are described in detail below. None of the members of the external review group declared any conflict of interest.

Name and expertise contributed to guideline development	Declared interest's(s)	Management of conflict(s) of Interest
Mona Alkhawari Role: End user	No declared conflict of interest	
Maha Almuneef Role: Content expert and end-user	No declared conflict of interest	
Jane Barlow Role: Content expert	No declared conflict of interest	
Howard Dubowitz Role: Content expert	Holds copyright for the SEEK programme, a programme for children exposed to maltreatment and their families	Conflict was not considered serious enough to affect GDG membership; H. Dubowitz did not weigh in the discussions on psychosocial programmes that included research on the SEEK programme
Asvini D. Fernando Role: Content expert and end-user	No declared conflict of interest	
Jenifer Goldman-Fraser Role: Content expert and end-user	No declared conflict of interest	
Omer Khan Role: Content expert	Declared that he provided expert opinion on treatment of sexual offenders in judicial process as part of his employment as forensic psychiatrist	Conflict was not considered serious enough to affect GDG membership
Alison Kemp Role: content expert	No declared conflict of interest	
Harriet MacMillan Role: Content expert and researcher and Co-Chair, supervised research on identification, recurrence,	Principal/co-principal/co-investigator on research responding to child maltreatment that was funded by national and	Conflict was not considered serious enough to affect GDG membership

Name and expertise contributed to guideline development	Declared interest's(s)	Management of conflict(s) of Interest
and psychosocial interventions	international organizations – funds to employer (CIHR, PHAC, UBS foundation, and CDC)	
Bernadette Madrid Role: Content expert and end-user and Co-Chair	Receives funding from UBS-Optimus Foundation, UNICEF and UNFPA to advise on implementation of a parenting programme in the Philippines and a curriculum for pediatricians.	Conflict was not considered serious enough to affect GDG membership
Mary Joseph Marret Role: Researcher and content expert	Occasional honorarium for contributing articles for a parenting magazine in Malaysia, research grants without any personal income or remuneration	Conflict was not considered serious enough to affect GDG membership
Ben Mathews Role: Content expert, researcher	Received research support to conduct research projects for royal commission on child sexual abuse, law, regulation and policy, Australian government. Provided submissions for law reform.	Conflict was not considered serious enough to affect GDG membership
Joan van Niekerk Role: Content expert and end-user	No declared conflict of interest	
Joseph Rujumba Role: End-user	No declared conflict of interest	
Rajeev Seth Role: Content expert and end-user	No declared conflict of interest	

Web Annex 2a: Systematic Review – Identifying Child Maltreatment

Identifying Child Maltreatment: An Update of a Systematic Review

Prepared by Jill McTavish, PhD

Key messages:

- Child maltreatment is a major global public health problem, with many physical, emotional, and relationship short- and long-term health consequences across the lifespan
- Health care practitioners need guidance about safe strategies for identifying children exposed to maltreatment in health care settings
- This review updates a systematic review by Bailhache et al.¹, which considered “evidence on the accuracy of instruments for identifying abused children during any stage of child maltreatment evolution before their death, and to assess if any might be adapted to screening, that is if accurate screening instruments were available”.
- In addition to the 13 articles evaluated in the Bailhache et al. review, 12 new articles were included in this review update, for a total of 25 articles.
- All included studies were cross-sectional diagnostic accuracy studies. Five studies used a dual-gate design (often referred to case-control studies) and the other 20 used a single-gate design (often referred to as cohort studies).
- All individual studies were downgraded due to very serious concerns for risk of bias (making the evidence “low” quality) and some studies were further downgraded for imprecision (making this evidence “very low” quality). Furthermore, while all evidence can be considered “low” or “very low” certainty for accuracy outcomes (for which the studies all measured), all of the evidence would have to be downgraded further for indirectness when considering potential extrapolations to long term outcomes (e.g., mental health) due to the lack of direct data on these outcomes.
- The identified tools and strategies attempted to identify a range of maltreatment, including one or more types of maltreatment (4), sexual abuse (4), emotional abuse (1), child medical abuse (aka Munchausen syndrome by proxy) (1), physical abuse (5), and abusive head trauma (10)
- While several identification strategies were identified that could be modified into more traditional screening tools, five studies were located that evaluated two screening tools: SPUTOVAMO and Escape. Only one of these studies (Sittig et al.²) did not suffer from serious

verification bias; for the studies suffering from verification bias, only a very small proportion (<2%) of negative screens (children classified as “not maltreated” by the screening tool) were evaluated by the reference standard, limiting our confidence in their accuracy outcomes. Using a prevalence range of 2% to 10% (which is a common range for emergency room settings where most of the five screening studies were evaluated), the Sittig et al.² study suggests the SPUTAVAMO checklist identifies children exposed to physical abuse with a sensitivity and specificity of 100% and 87% respectively and children exposed to neglect with a sensitivity and specificity of 83% and 87% respectively. Numbers of children falsely identified as being maltreated by this tool range from 12,150 to 13,230 per 100,000 for physical abuse and 11,970 to 13,034 per 100,000 for neglect; numbers of children missed by this tool are 0 for physical abuse and range from 334 to 1670 for neglect.

- There is insufficient evidence to recommend screening for the purposes of identifying child maltreatment because 1) a number of the identification tools assessed in this review are not suitable for screening for maltreatment, 2) most of the identified screening tools suffer from serious verification bias, which decreases our confidence in their accuracy values, and 3) the one study by Sittig et al. that does not suffer from verification bias still has a high number of children who are falsely identified by the tool and is not sufficient accurate at identifying children suffering from all types of maltreatment.

Abstract:

Background: Child maltreatment is a major public health problem and several authors have proposed strategies for identifying children exposed to maltreatment. The aim of this systematic review update was to identify and evaluate strategies for identifying child maltreatment and to consider the findings in relation to recommendations for identifying children exposed to maltreatment published in the World Health Organization’s (WHO) Mental Health Gap Action Programme (mhGAP) update. **Methods:** We searched across six databases (Medline, Embase, PsycINFO, CINAHL, Sociological Abstracts, ERIC) for studies estimating diagnostic accuracy of tools identifying physical abuse (including abusive head trauma), sexual abuse, emotional abuse, and neglect of children, published from 2012 (when the previous systematic review concluded) to February 7th, 2017. We extracted data about study design, patient populations, index tests, reference standards, and accuracy outcomes (sensitivity, specificity, and positive or negative predictive values). We also calculated number of true positives, false positives,

true negatives, and false negatives per 100,000. Study quality was assessed using QUADAS criteria and certainty of evidence was assessed using GRADE criteria. Results: Twelve new articles were found for this update and combined with the 13 articles identified in the previous systematic review, for a total of 25 included articles. Fifteen articles focused on physical abuse (10 specifically on abusive head trauma), four articles examined multiple forms of child maltreatment, four articles examined sexual abuse, and one article each examined emotional abuse or medical child maltreatment. All included studies suffered from serious risk of bias and the certainty of the included evidence was either very low or low. Serious verification bias in several of the recent identified screening studies limited our confidence in the results of these studies. Discussion: There is at yet insufficient evidence to suggest screening children for indicators of maltreatment. No significant changes are suggested for the WHO mhGAP recommendation, which advises case finding by a clinician who is competent to do so for identifying children exposed to maltreatment.

1. Background

Child maltreatment is a major global public health problem. It is associated with many physical, emotional, and relationship consequences across the lifespan, such as injury and attachment disorders beginning in infancy, onset of academic failure and poor peer relationships in childhood, substance abuse across the lifespan, relationship problems and maltreatment of their own children in adulthood, and mental health symptoms and disorders from childhood onward.^{3–7} Global estimates of child maltreatment indicate that a significant proportion of adults have experienced child maltreatment as a child, including childhood physical abuse (22.6%), emotional abuse (36.3%), neglect (16.3%), and sexual abuse (18% of women and 7.6% of men).^{8–10} Furthermore, these forms of violence are often co-occurring,¹¹ which can increase children’s risk for impairment.^{12–14} Given the high prevalence of child maltreatment, clinicians require more skills for effectively identifying children exposed to maltreatment.

The purpose of this review is to update an existing systematic review published by Bailhache et al.¹ related to strategies for identifying child maltreatment¹ and to consider this update in relation to current recommendations for identification of child maltreatment, as published in the World Health Organization’s (WHO) Mental Health Gap Action Programme (mhGAP) update (see Appendix I for recommendation).¹⁵ The systematic review conducted by Bailhache et al.¹ considered 13 studies addressing the identification of physical abuse (7), sexual abuse (4), emotional abuse (1), and general child maltreatment (1) for the purposes of reviewing “evidence on the accuracy of instruments for identifying abused children during any stage of child maltreatment evolution before their death, and to assess if any might be adapted to screening, that is if accurate screening instruments were available”. In

their discussion, the authors note that the tools discussed in their 13 included studies “were not designed for screening”, as they either identified children too late (i.e., children were already suffering from serious consequences of maltreatment) or the performance of the tests were not adaptable to screening, as the tests did not have high sensitivity (<90%) and specificity (<80%) values.¹ The poor performance of screening tests for identifying children exposed to maltreatment is reflected in the WHO mhGAP recommendations, which suggests that “there is no evidence to support universal screening or routine inquiry”.¹⁵ Instead of screening, the WHO mhGAP recommends that healthcare providers use a case finding approach to identify children exposed to maltreatment by being “alert to the clinical features associated with child maltreatment and associated risk factors and assess for child maltreatment, without putting the child at increased risk”.¹⁵

As noted in the mhGAP update, screening and case finding are two main approaches to identifying child maltreatment that are often contrasted with each other. Screening involves administering a standard set of criteria to evaluate for the presence (or suspicion) of child maltreatment in all presenting children (or a subset of children). It is often framed as a way to help busy healthcare providers recognize the presence of child maltreatment. Case finding, alternatively, requires that providers are alert to the indicators of child maltreatment and, instead of standardized tools or questions, case finding entails providers asking about the child and their potential maltreatment exposure in a way that is tailored to the unique circumstances of the child. In some clinical settings (such as mental health), case finding can take the form of ‘routine inquiry’, or the asking of all presenting children about exposure to child maltreatment; this is because clinicians in these settings need to be alert to the association between mental health symptoms and child maltreatment, and at the very least need to consider exposure to child maltreatment in assessing children’s mental health problems.

Ideally, screening or case finding studies are evaluated in randomized trials in order to assess the impact of identification strategies on long-term outcomes.¹⁶ These outcomes are important because children who are identified as being exposed to maltreatment (or who experience a child protective services [CPS] investigation) may receive no corresponding services or poor service responses. As such, identification may not improve children’s well-being or safety. Examples of these kinds of studies are available for evaluating the impact of screening on women experiencing intimate partner violence (IPV). A systematic review on the impact of screening on women with experiences of IPV suggests that screening does not benefit women’s health outcomes.¹⁷ However, as randomized trials evaluating screening strategies are rare, in this review – like Bailhache et al.¹ – we sought to evaluate diagnostic accuracy studies, which are mostly cross-sectional in nature.

Historically, diagnostic studies (studies that evaluate the effectiveness of a particular identification method) were primarily assessed through an evaluation of their sensitivity and specificity rates; however, these measures are “often misinterpreted and may not reflect well the effects expected in the population of interest”.¹⁸ Instead, other accuracy measures, such as true positives, true negatives, false positives, and false negatives, have been found to be more helpful for making decisions about the effectiveness of diagnostic studies.¹⁸ With regard to child maltreatment, rates of false negatives and false positives are both important to consider. False negatives include children who are not identified by an identification tool; these children will not receive the benefit of assessment and will not receive an intervention for any associated mental health symptoms. False positives include children who are falsely labelled as being abused or neglected. Depending on the jurisdiction, these children and their families may be subjected to a potentially distressing report, investigation, and CPS response.¹⁹

The objective of the current review is to update the Bailhache et al.¹ review in order to answer the following question:

- For children (0 to <18) involved in health care encounters (P), does universal screening/routine inquiry (I) result in more children who have been exposed to children being accurately identified (O) compared to clinical inquiry/case finding (C)?
- For children (0 to <18) who have been exposed to CM (P), does method A for universal screening/routine inquiry (O), compared to method B or no method for universal screening/routine inquiry result in better child well-being and welfare outcomes (O)?

A secondary purpose of this review is to consider the evidence about these instrument in relation to current recommendations about case finding published in WHO’s mhGAP update.

2. Methods

In order to answer the above review question, a systematic review was conducted. A protocol for this review is registered with the online systematic review register, PROSPERO (PROSPERO 2016:CRD42016039659). As the review by Bailhache et al.¹ considered any materials English or French materials published between 1961 and April 2012, in this review we considered English-language materials published between 2012 and February 7, 2017 (when the search was conducted). Additional inclusion criteria are found in Table 1. Inclusion criteria for this review were matched to those in Bailhache et al.’s review.

Bailhache et al.¹ searched in four databases (PubMed, PsycINFO, Scopus and Francis/Pascal) using a mix of keywords/index terms related to child abuse and terms for accuracy outcomes (e.g., “child

abuse” [Mesh] or “child maltreatment” were used in PubMed and “battered child syndrome” OR “child abuse” were used in PsycINFO). Alternatively, our search strategy involved replicating keywords exactly across databases (being cognizant of different database operators) and matching index terms conceptually across databases. Index terms and keywords were selected based on testing a draft search strategy against a subset of eligible articles, a common searching strategy.²⁰ Searches were conducted in seven databases: Medline, Embase, PsycINFO, CINAHL, Cochrane Libraries, Sociological Abstracts and ERIC (see Appendix II for example search). Forward and backward citation chaining was also conducted to complement the search. All articles identified by our database searches were screened by two independent reviewers at the title and abstract and full-text level. An article suggested for inclusion by one screener was sufficient to put it forward to full-text review.

Table 1. Inclusion and exclusion criteria

Inclusion criteria 1. Population. Children (0-17) 2. Intervention (index test). Any diagnostic strategy, such as screening or case-finding, that attempted to determine if children had been exposed to physical abuse (including abusive head trauma), sexual abuse, emotional abuse, or neglect. Studies had to describe the index test with enough information to be replicable. 3. Comparator (reference test). Studies had to have an acceptable reference standard, such as “expert assessments, such as child’s court disposition; substantiation by the child protection services or other social services; diagnosis by a medical, social or judicial team using one or several information sources (caregivers or child interview, child symptoms, child physical examination, and other medical record review)”.¹ 4. Outcomes. 1. Accuracy outcomes (sensitivity, specificity, positive predictive value, or negative predictive value), 2. Child school performance, or 3. Child school attendance. 5. Study design. Included studies need not have a comparator (e.g., cross-sectional studies were accepted), but needed to have enough information to evaluate the study via critical appraisal.
Exclusion criteria 1. Ineligible population. Studies that only addressed adults (including adults with histories of maltreatment or abusive caregivers) and studies that addressed children’s exposure to IPV exclusively 2. Ineligible intervention (index test). Studies that identified a risk factor for child maltreatment, such as retinal hemorrhaging, but not child maltreatment itself; studies that were using a tool to predict future child maltreatment; tools that were identifying a different population (e.g., general failure to thrive, children’s exposure to IPV) 3. Ineligible comparator (reference test). Studies that did not have an acceptable reference standard, such as parent reports of abuse

- 4. Ineligible outcomes.** Studies that at minimum did not set out to evaluate at least one of the following accuracy outcomes: sensitivity, specificity, positive predictive value, negative predictive value
- 5. Ineligible publication types.** Studies published as abstracts were excluded, as not enough information was available to critically appraise study design. Also excluded were studies published in non-article format, such as books or theses. The latter were excluded for pragmatic issues (the challenges of systematically searching for these materials), but recent research suggests that inclusion of these materials may have little impact on results.²¹

2.1. Data extraction and analysis

For all included studies, one author extracted data about the following into a table (see Table 2): study design, the study's inclusion criteria, form of child maltreatment assessed, index tool, sample size, reference standard, and values corresponding to sensitivity and specificity (see Figure 1 for equations for calculating sensitivity and specificity). Extracted data was confirmed by a second author by cross-checking the results in all tables with data from the original articles. As all of the studies differed in either a) included populations or b) applied index tests, we were unable to pool any of the included studies together. As such, we provide a descriptive synthesis of extracted data and results are reported according to individual studies.

Sensitivity and specificity values were entered into GRADEpro software in order to calculate true/false positives/negatives per 100,000 patients tested. To calculate these values, two prevalence rates were compared (2% and 10%) based on the prevalence of child maltreatment in emergency rooms²², as most of the identified screening tools addressed children in these settings. These prevalence rates are lower than global, lifetime prevalence rates noted in the introduction,⁸⁻¹⁰ but allow for a consistent comparison of true/false positives/negatives per 100,000 children across all studies. For consistency and to enhance accuracy of calculations of true/false positives/negatives in GRADEpro, where possible, all sensitivity and specificity values and confidence intervals for the included studies were recalculated to six decimal places using [calculations for confidence intervals used: $p \pm 1.96 \times \sqrt{p(1-p)/n}$].

Figure 1: Equations for calculating sensitivity, specificity, positive and negative predictive value

		Does the index test predict child maltreatment?		
Total population		Yes – positive index test outcome	No – negative index test outcome	Prevalence of maltreatment
Is there a child exposed to child maltreatment present (reference standard)?	Yes – condition positive	True positive	False negative (Type II error)	Sensitivity = # True positive / (Sum of condition positive)
	No – condition negative	False positive (Type I error)	True negative	Specificity = # True negatives / (Sum of condition negative)
		Positive predictive value = # True positives / (Sum of test outcome positive)	Negative predictive value = # True negative / (Sum of test outcome negative)	

2.2. Critical appraisal

One author critically appraised each study using the QUADAS-2 tool²³ and all data was checked by a second author, with differences were resolved through consensus (see Appendix III for critical appraisal form). The QUADAS-2 tool evaluates risk of bias related to a) patient selection, b) index test, c) reference standard, and d) flow and timing. Questions related to “applicability” in QUADAS-2 were not answered as these overlap with questions involved in the GRADE process.²⁴ As the developers of QUADAS-2 note²³, an overall rating of “low” risk of bias is only possible when all domains are assessed to be low risk of bias. As such, an answer of “no” to any of the questions indicates that both the domain (e.g., “patient selection”) and the overall risk of bias for the study is high. In this review, a study was rated as “high”

risk of bias if one or more domains was ranked as high risk of bias; a study was ranked as “low” risk of bias when all domains were rated as low risk of bias; and a study was ranked as “unclear” risk of bias otherwise (i.e., when the study had one or more domains ranked as “unclear” risk of bias and no domains ranked as “high” risk of bias).

2.3. GRADE assessment

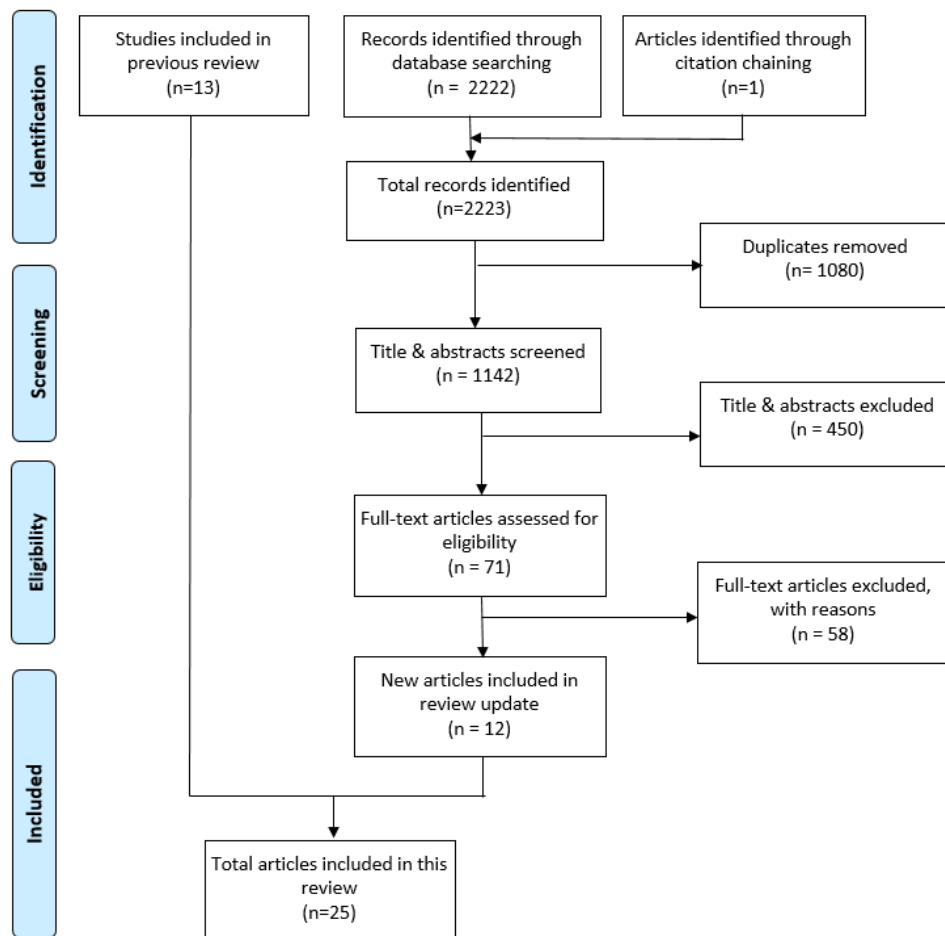
Evidence for each included study was assessed using the GRADE system. The GRADE system rates the quality of a body of evidence as high, moderate, low or very low; each of the four levels reflects the certainty in the evidence and the likelihood that further research will have an impact on the estimate of effect. High quality evidence means that we are very confident that the true effect lies close to that of the estimate of the effect, whereas moderate quality means we are moderately confident in the effect estimate and the true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different. Low quality means that our confidence in the effect estimate is limited and the true effect may be substantially different from the estimate of the effect. Very low quality means that we have very little confidence in the effect estimate and the true effect is likely to be substantially different from the estimate of effect.

A GRADE rating is based on an assessment of five domains: (1) risk of bias (limitations in study designs), (2) inconsistency (heterogeneity) in the direction and/or size of the estimates of effect, (3) indirectness of the body of evidence to the populations, interventions, comparators and/or outcomes of interest, (4) imprecision of results (few participants/events/observations, wide confidence intervals), and (5) indications of reporting or publication bias. A body of evidence starting off with cross-sectional diagnostic accuracy studies can be considered “high” quality and then is downgraded to moderate, low, or very low quality based on the five factors listed above (risk of bias, inconsistency, indirectness, imprecision, reporting/publication bias). In this set of evidence, for example, all but five studies were cross-sectional studies (starting at high quality). All individual studies were downgraded due to very serious concerns for risk of bias (making the evidence “low” quality) and some studies were further downgraded for imprecision (when there were less than 300 participants contributing, making the evidence “very low” quality). Furthermore, while all evidence can be considered “low” or “very low” certainty for *accuracy outcomes* (for which the studies all measured), all of the evidence would have to be downgraded further for indirectness when considering potential extrapolations to long term outcomes (e.g., mental health) due to the lack of direct data on these outcomes.

3. Results

The updated search and citation chaining retrieved 2223 records; after de-duplication, 1142 titles and abstracts were screened for inclusion (see Figure 1). From this set of results, 71 full-text articles were reviewed for inclusion and, in addition to the 13 articles evaluated in the Bailhache et al. review²⁵⁻³⁷, 12 new articles^{2,38-47} were included in this review update, for a total of 25 articles.

Figure 1: PRISMA Flow Chart



3.1. Study characteristics

The identified tools and strategies attempted to identify a range of maltreatment types (see Table 2). Four of the included studies examined tools that attempted to identify one or more types of maltreatment, including the SPUTOVAMO-R2 checklist³⁸, the Escape checklist^{39,40}, and the Childhood Trauma Questionnaire.²⁶ Four of the studies examined strategies to identify sexual abuse, including colposcopic examination of anal and genital findings²⁸, hymen measurements²⁵, the Child Sexual

Behavior Inventory²⁹, and the Abbreviated Structured Interview for Symptoms Associated with Sexual Abuse.³⁷ One study examined a scale for identifying emotional abuse.³⁰ Five studies identified tools and strategies for identifying physical abuse, including the SPUTOVAMO checklist^{2,41}, a bruising classification and regression tree³², bruising associated with a fracture³³, and a screening index for physical abuse²⁷. Finally, 10 studies^{31,34–36,42,43,45–48} examined a form of physical abuse, abusive head trauma, using a variety of strategies and indicators, such as skeletal surveys⁴⁸, lacerations⁴², the Predicting Abusive Head Trauma tool⁴³, and four- or five- variable clinical prediction rules.^{46,47} Of the included studies, 11 used retrospective designs,^{27,31–33,36,38,41,42,44,45,48} 13 used prospective designs,^{22,23,25–27,31,32,34,36–38,44,45} and one study used retrospective and prospective data.⁴³

3.2. Quality of included studies

All included studies were rated as high risk of bias, with 21 (84%) studies having high risk of bias across two or more domains (see Table 3). Five of the studies^{25,32,37,42,44} used a “dual gate” design (often referred to as a case-control study, question 2) and applied a different reference standard to cases and controls (question 10), which can exaggerate diagnostic accuracy. All but three studies^{38,41,45} had inappropriate exclusions (question 3), in that they excluded a set of children that would need to be assessed by the identification strategy (e.g., the study had a narrower age range than would be seen in practice, or excluded patients who may be difficult to diagnose). Only two studies explicitly stated the blinding of outcome adjudicators of index test (question 4) and reference standard (question 7) results^{30,36}, although six other studies at least stated the blinding of the reference standard outcome adjudicators (question 7).^{2,26,29,32,33,39} Eight studies^{26,27,30,32,37,43–45} optimized their sensitivity and specificity rates according to a set of data without pre-specifying a threshold (question 5) and as such their diagnostic accuracy rates may not perform as well on an independent sample. Most studies did not state the time interval between administering the index test and reference standard; two studies^{2,26} stated an time interval that was over the 60 day cut-off (see critical appraisal form, Appendix III) and children’s maltreatment exposure(s) could have changed during this time period. A number of studies did not apply the reference standard to all children and instead only applied it to a subset of children who were positively identified by the index test or some other method, which can lead to serious verification bias. For example, the reference standard was received by only 55/498 (11%) of children in the study by Bousema et al.⁴¹, 151/5592 (2.7%) of children in the study by Schouten et al.³⁸, 137/6120 (2.2%) of the children in the study by Dinpanah et al.³⁹, and 55/18275 (0.3%) of the children in the study by Louwers et al.⁴⁰ Only one of the recently published screening tests, the study published by Sittig et al.², applied the reference standard to 15 percent random sample of the children who received a negative screen by

the index test, thereby alleviating the potential for serious verification bias. Finally, the majority of the studies (19/25, 75%) either a) had a significant proportion (>10%) of drop-outs or indeterminate results or b) did not state these findings clearly.

Table 3. Low (L), Unclear (U), or High (H) Bias Ratings on QUADAS-2 Questions (Qs). Certainty rating for GRADE assessment also included.																	
	Patient selection bias Qs			Index test bias Qs			Reference standard bias Qs			Patient flow and timing bias Qs				Risk of Bias	Certainty		
	1	2	3	4	5	6	7	8	9	10	11						
Child maltreatment																	
Schouten 2017 ³⁸	Y	Y	Y	L	N	-	N	N	U	H	U	N	N	Y	H	High	Low
Dinpanah 2017 ³⁹	N	Y	N	H	U	-	U	Y	Y	L	U	N	N	Y	H	High	Low
Louwens 2014 ⁴⁰	Y	Y	N	H	N	-	N	Y	N	H	U	N	N	N	H	High	Low
Bernstein 1997 ²⁶	U	Y	N	H	N	N	H	Y	Y	L	N	N	N	N	H	High	Very low
Sexual abuse																	
Cheung 2004 ²⁸	Y	Y	U	U	U	-	U	U	N	H	U	Y	Y	N	H	High	Very low
Berenson 2002 ²⁵	U	N	N	H	U	Y	U	Y	U	U	Y	Y	N	Y	H	High	Very low
Drach 2001 ²⁹	U	Y	N	H	U	-	U	Y	Y	L	U	Y	Y	U	U	High	Very low
Wells 1997 ³⁶	U	N	U	H	U	N	H	U	U	U	U	Y	N	N	H	High	Very low
Emotional abuse																	
Fernandopulle 2003 ³⁰	Y	Y	U	U	Y	N	H	U	Y	U	Y	Y	Y	U	U	High	Very low
Medical child maltreatment																	
Greiner 2013 ⁴⁴	N	N	N	H	N	N	H	Y	N	H	U	N	N	Y	H	High	Low
PA & N																	
Sittig 2016 ²	Y	Y	N	H	U	-	U	Y	Y	L	N	N	N	N	H	High	Low
Bousema 2016 ⁴¹	Y	Y	Y	L	U	-	U	N	U	H	U	N	N	N	H	High	Low
Pierce 2010 ³²	Y	N	N	H	N	N	H	U	Y	U	U	Y	N	N	H	High	Very low
Valvano 2009 ³³	Y	Y	N	H	U	-	U	U	Y	U	U	Y	Y	N	H	High	Very low
Chang 2005 ²⁷	N	Y	N	H	U	N	H	U	U	U	U	Y	Y	N	H	High	Low

-AHT																	
Kim 2017 ⁴⁸	Y	Y	N	H	U	Y	U	Y	N	H	U	N	N	N	H	High	Low
Palifka 2016 ⁴²	N	N	N	H	U	-	U	U	N	H	U	N	N	N	H	High	Very low
Cowley 2015 ⁴³	Y	Y	N	H	U	N	N	U	U	U	U	U	N	N	H	High	Very low
Acker 2014 ⁴⁵	Y	Y	Y	L	N	N	H	Y	U	U	U	N	N	N	H	High	Low
Hymel 2014 ⁴⁶	Y	Y	N	H	Y	-	L	U	N	H	U	Y	Y	Y	L	High	Very low
Hymel 2013 ⁴⁷	Y	Y	N	H	N	Y	N	U	U	U	U	Y	Y	Y	L	High	Very low
Vinchon 2009 ³⁴	N	Y	N	H	U	-	U	U	U	U	U	Y	N	U	H	High	Very low
Vinchon 2005 ³⁵	U	Y	N	H	U	Y	U	Y	U	U	U	N	N	U	H	High	Very low
Hettler 2003 ³¹	Y	Y	N	H	U	-	U	U	U	U	Y	Y	Y	N	H	High	Low
Wells 2002 ³⁶	Y	Y	Y	L	Y	N	H	U	Y	U	U	Y	Y	U	U	High	Very low
N=no; Y=yes; “-” =Not applicable Questions in the critical appraisal form: 1=Was a consecutive or random sample of patients enrolled?; 2=Was a case-control design avoided?; 3=Did the study avoid inappropriate exclusions?; 4=Were the index test results interpreted without knowledge of the results of the reference standard?; 5=If a threshold was used, was it pre-specified?; 6=Is the reference standard likely to correctly classify the target condition?; 7=Were the reference standard results interpreted without knowledge of the results of the index test?; 8=Was there an appropriate interval between index test(s) and reference standard?; 9=Did all patients receive a reference standard?; 10=Did patients receive the same reference standard?; 11=Were all patients included in the analysis?																	

3.3. Certainty of included studies

As can be shown in the right most column of Table 3, all individual studies were downgraded due to very serious concerns for risk of bias (moving the evidence from “high” quality to “low” quality) and all but nine studies were further downgraded for imprecision (when there were less than 300 participants contributing), making the evidence “very low” quality. Furthermore, while all evidence can be considered “low” or “very low” certainty for *accuracy outcomes* (for which the studies all measured), all of the evidence would have to be downgraded further for indirectness when considering potential extrapolations to long term outcomes (e.g., number of children who received post-investigation services, discussed below) due to the lack of direct data on these outcomes.

3.4. General diagnostic accuracy

3.4.1. Identification of different forms of maltreatment

In the interest of space, true/false positives/negatives are only reported for the newly identified studies; all values for the studies identified in the Bailhache et al.¹ review are available in Table 2.

The SPUTOVAMO tool is a screening instrument that determines whether there is a suspicion of child maltreatment via a positive answer to one or more of five questions (e.g., injury compatible with history and corresponding with age of child?). Its use is mandatory in Dutch emergency rooms and “out-of-hours” primary care locations. One study³⁸ evaluated SPUTOVAMO-R2 for children exposed to physical abuse, sexual abuse, emotional abuse, neglect, or children exposed to IPV, and two studies^{2,41} evaluated SPUTOVAMO for children exposed to physical abuse (discussed below). For the study evaluating different forms of maltreatment, sensitivity and specificity rates were 15% and 98% respectively. Numbers of children falsely identified as being maltreated by this SPUTOVAMO-R2 range from 1611 to 1754 per 100,000; numbers of children missed by this tool range from 1705 to 8525 per 100,000.

The Escape tool is a screening instrument very similar in content and construction to the SPUTOVAMO tool, with five questions that are used to determine whether there is suspicion of child maltreatment, including physical abuse, sexual abuse, emotional abuse, neglect, and children’s exposure to IPV (e.g., Is the history consistent?). For the two studies^{39,40} that evaluated the Escape tool, sensitivity values ranged from 80% to 100% and the specificity value for both studies evaluating this tool was 98%. Numbers of children falsely identified as being maltreated by the Escape tool range from 1530 to 1960; numbers of children missed by this tool range from 0 to 2000.

One study previously reviewed by Bailhache et al.²⁶ reported on the diagnostic accuracy of the Childhood Trauma Questionnaire, a self-reported 70-item screening inventory (e.g., “When I was growing up, someone tried to touch me in a sexual way or tried to make me touch them”). Sensitivity and specificity values for this questionnaire are reported per maltreatment type (e.g., sensitivity and specificity of identifying physical abuse are 86% and 76% respectively).

3.4.2. Identification of sexual abuse

Four studies evaluating strategies for identifying sexual abuse were previously reviewed by Bailhache et al.¹ Cheung et al.²⁸ evaluating the colposcopic examination of anal and genital findings, which had a sensitivity and specificity of 56% and 98% respectively and Berenson et al.²⁵ evaluated hymen measurements for a sensitivity of 30% and 86% respectively (for a horizontal hymen diameter of ≥ 6.5 mm in knee chest position). Drach et al.²⁹ evaluated the Child Sexual Behavior Inventory, which

consists of 38 sexual behavior items, and found it to have a sensitivity and specificity of 50% and 50% respectively. Wells et al.³⁷ evaluated the Abbreviated Structured Interview for Symptoms Associated with Sexual Abuse, where sexual abuse is said to have occurred when ≥ 3 of 12 items are indicative (e.g., Sudden emotional/behavioral changes), and found it to have a sensitivity and specificity of 91% and 88% respectively.

3.4.3. Identification of emotional abuse

One study previously reviewed by Bailhache et al. evaluated a scale for identifying emotional abuse that in Sri Lanka. An example of a scale item is: 9) How do your parents assess you? 9.1) A lucky child; 9.2) A troublesome child; 9.3) An unwanted child; 9.4) A useless child; 9.5) A sickly child; 9.6) Better if you belonged to the opposite sex; 9.7) Better if was like a sibling; 9.8) Better if was like a child in the neighbourhood or classmate. This scale was found to have a sensitivity and specificity of 77% and 51% respectively.

3.4.4. Identification of Munchausen syndrome by proxy

Greiner et al.⁴⁴ report about a medical child abuse (aka Munchausen syndrome by proxy) screening instrument, where a positive answer to 4 or more of the 15 questions indicates suspicion of medical child abuse (e.g., Caregiver has features of Munchausen syndrome...?). This screening instrument has sensitivity and specificity values of 95% and 96% respectively. Numbers of children falsely identified as being maltreated by this tool range from 3933 to 4283 per 100,000; numbers of children missed by this tool range from 105 to 526 per 100,000.

3.4.5. Identification of physical abuse, including abusive head trauma

Two studies reported on the use of the SPUTOVAMO checklist to identify children exposed to physical abuse in either the emergency room² or the burn centre.⁴¹ In the emergency room, Sittig et al. report that the SPUTOVAMO checklist identifies children exposed to physical abuse with a sensitivity and specificity of 100% and 87% respectively and children exposed to neglect with a sensitivity and specificity of 83% and 87% respectively. Numbers of children falsely identified as being maltreated by this tool range from 12,150 to 13,230 per 100,000 for physical abuse and 11,970 to 13,034 per 100,000 for neglect; numbers of children missed by this tool are 0 for physical abuse and range from 334 to 1670 for neglect. In a burn centre, Bousema et al.⁴¹ report that the SPUTOVAMO checklist identifies children suspected of physical abuse with a sensitivity and specificity of 73% and 95% respectively. Numbers of children falsely identified as being maltreated by this tool range from 4938 to 5377 per 100,000; numbers of children missed by this tool range from 536 to 2680 per 100,000.

Three studies previously reviewed by Bailhache et al.¹ report on different strategies for identifying physical abuse. A bruising classification and regression tree was found to have a sensitivity and specificity of 97% and 84% respectively,³² bruising associated with a fracture was found to have a sensitivity and specificity of 26% and 77% respectively,³³ and a screening index for physical child abuse was found to have a sensitivity and specificity of 87% and 80% respectively.²⁷

The remaining 10 studies examined tools, indicators, and strategies to identify abusive head trauma. Kim et al.⁴⁸ looked at the diagnostic accuracy of skeletal surveys for identifying children under 12 months who had a diagnosis of a head injury defined as a skull fracture or intracranial injury. Skeletal surveys were to have a sensitivity and specificity of 44% and 99% respectively. Numbers of children falsely identified as being maltreated by skeletal surveys range from 1000 to 1089 per 100,000; numbers of children missed by skeletal surveys range from 1117 to 5586 per 100,000. Palifika et al.⁴² examined the diagnostic accuracy of lacerations in children under 3 years of age diagnosed with abusive head trauma or accidentally injured children with moderate-to-severe traumatic brain injury. Lacerations were found to have a sensitivity and specificity of 13% and 100% respectively. Lacerations falsely identifies zero children per 100,000 (with large confidence intervals – 0 to 14718); numbers of children missed by this lacerations range from 1737 to 8686 per 100,000. Cowley et al.⁴³ examined the predictive ability of the Predicting Abusive Head Trauma (PredAHT) tool in children under 24 months admitted to a hospital with an intracranial injury. The PredAHT tool estimates abusive head trauma from five indicators, including 1) apnea, 2) retinal hemorrhage, 3) rib, skull, and long-bone fractures, 4) seizures, and 5) head and/or neck bruising, and was found to have a sensitivity and specificity of 66% and 81% respectively. PredHAP falsely identifies 16,241 to 17,684 children per 100,000 as being maltreated; this tool also misses 677 to 3385 children per 100,000. Acker et al.⁴⁵ examined the accuracy of hematocrit of 30 or less on presentation in children under 5 years who were admitted with a diagnosis of traumatic brain injury. These hematocrit values were found to have a sensitivity and specificity of 41% and 81% respectively. Using this hematocrit value falsely identifies 72,686 to 79,147 children per 100,000; it also misses 1043 to 5216 children per 100,000. Two studies evaluated a four- or five-variable clinical prediction rule in identifying abusive head trauma in children under three years of age who are admitted to the post-intensive care unit for management of intracranial injuries. The four-variable clinical prediction rule uses four indicators to predict abusive head trauma (e.g., Any clinically significant respiratory compromise at the scene of injury, during transport, in the emergency department, or before admission?) and was found to have a sensitivity and specificity of 96% and 43% respectively. This

four-variable clinical prediction tool falsely identifies 51,736 to 56,335 children per 100,000; it also misses 81 to 403 children per 100,000.

The remaining four strategies for identifying abusive head trauma were previously reviewed by Bailhache et al.¹. These include the predictive value of four different indicators (brain ischemia, subdural hematoma, severe retinal hemorrhage, and absence of scalp swelling) of abusive head trauma (e.g., absence of scalp swelling has a sensitivity and specificity of 24% and 100% respectively)³⁴ and retinal hemorrhage grade 1, 2, or 3 or grade 2 or 3 (e.g., retinal hemorrhage grade 2 or 3 has a sensitivity and specificity of 66% and 100% respectively).³⁵ One study examined the predictive ability of no history of trauma for children under three years of age admitted to inpatient services with traumatic intracranial hemorrhage and found a sensitivity and specificity of 69% and 97% respectively.³¹ Finally, Wells et al.³⁶ examined another four variable model for predicting abusive head trauma (e.g., subdural hematoma located over the cerebral convexities, hematoma within the interhemispheric subdural space, hygroma with intracranial hemorrhage, and absence of skull fracture with intracranial hemorrhage) and found it to have a sensitivity and specificity of 84% and 83% respectively.

3.5. Absolute effect of the SPUTVAMO screening tool for physical abuse or neglect

The absolute effects of the SPUTVAMO screening tool published by Sittig et al.², which was the only screening tool found to not have serious concerns for verification bias, is presented in Table 4. Prevalence is presented as a range, with a range of 2% to 10% found in emergency rooms.²² For physical abuse, per 100,000 children, we have low certainty that providers who are using SPUTVAMO may miss 0 children exposed to physical abuse (with a range of 0 to 60 children) and 334 to 1670 children who have been exposed to neglect. This means that 2000 to 10,000 per 100,000 children will be correctly identified as being physically abused by the SPUTVAMO tool and 1666 to 8330 per 100,000 children will be correctly identified as being neglected by the SPUTVAMO tool. However, we know that only 17% of children who are reported to child welfare are considered to have substantiated maltreatment,⁴⁹ which translates into 340 to 1700 per 100,000 children being substantiated for physical abuse and 283 to 1416 per 100,000 children being substantiated for neglect. Of these children with substantiated maltreatment, 62% may receive post investigation services.⁴⁹ Also, 27% of children with non-substantiated maltreatment receive post investigation services.⁴⁹ Per 100,000 children, this translates into post-investigation services being received by 211 to 1054 children with substantiated physical abuse and 540 to 2700 children without substantiated physical abuse, as well as 175 to 878 children with substantiated neglect and 450 to 2249 children without substantiated neglect. In short, the

identification of a child who has been maltreated by the SPUTOVAMO screening test does not ensure that the child/family will anything other than a report and potentially an investigation.

Furthermore, it is important to note that the SPUTOVAMO tool may lead to 12,150 to 13,230 children per 100,000 being misidentified as being physically abused and 11,970 to 13,034 children per 100,000 being misidentified as being neglected. In jurisdictions where suspicions lead to reports that may lead to CPS investigations, all of these children may receive a distressing CPS investigation. Furthermore, we know that 22.9% of children were removed from their homes after a CPS investigation.⁴⁹ This means that 309 children could be inappropriately removed from their home for being physically abused (when they have not been) and 298 could be removed from their home for being neglected (when they have not been).

4. Discussion

This review is an update of the systematic review published by Bailhache et al.¹ in order to evaluate the effectiveness of strategies for identifying child maltreatment, including screening tools. Since the publication of Bailhache et al.'s systematic review, there have been 12 additional articles published, which have evaluated the accuracy of three screening tools (the SPUTOVAMO tool, the Escape tool, and the medical child abuse tool), as well as the accuracy of two clinical prediction tools (PredAHT, Hymel's 4- or 5-variable prediction models), skeletal surveys, and two predictive symptoms of abusive head trauma (parenchymal brain lacerations and hemocrit levels equal or less than 30%). These studies provide additional evidence that allow us to assess the effectiveness of tools for the purposes of screening for children exposed to maltreatment. Based on the findings of this review (corresponding with the findings of Bailhache et al.'s¹ review and the recommendations in the WHO mhGAP update¹⁵), there is insufficient evidence to recommend screening for the purposes of identifying child maltreatment, for reasons discussed below.

First, there were a number of instruments published that are not intended to be used as screening tools. Clinical prediction tools, such as PredAHT or Hymel's variable prediction model, combine medical signs, symptoms, and other factors in order to predict diseases or exposures. While they may be useful for guiding clinician's everyday decision-making, and may be more accurate than clinical judgement alone,⁵⁰ they are not intended to be used as screening tools. Palifika and colleagues'⁴² assessment of parenchymal brain lacerations, Acker et al.'s⁴⁵ assessment of hemocrit levels, and Kim et al.'s⁴⁸ assessment of skeletal surveys are also not intended as screening tools. Palifika et al.'s⁴² study, for example, suggests a relationship between parenchymal brain lacerations and abusive head trauma, but

not necessarily a strongly predictive one, as 40.9% of children with abusive head trauma did not have these lacerations. All three of these studies are also attempting to predict abusive head trauma and as such evaluate children with significant injuries, which precludes the early identification of children exposed to maltreatment.

Second, as noted in Bailhache et al.¹, some tools could be adapted into screening tools if they had high sensitivity (>90%) and specificity (>80%) values. However, the accuracy parameters of many of the included studies were quite low, which suggests that a large number of children exposed to maltreatment would be missed by the identification strategies or a large number of children would be falsely identified by the strategies. Kim et al.⁴⁸, for example, suggest that routine screening of children of all children with an unwitnessed head injury should occur and they suggest that positive skeletal surveys are predictive of abusive head trauma; however, as noted by the authors, the sensitivity (44%) of skeletal surveys is quite low, suggesting that skeletal surveys alone cannot be used to diagnose abusive head trauma. When considering the suggestion by Bailhache et al.¹ that identification tools would need to have a sensitivity above 90% and a specificity above 80% to be sufficient to adapt as screening tools, all other studies except five^{2,32,37,39,44} also have insufficient sensitivity or specificity values to be adapted.

Third, a number of limitations in the study designs of many of the included studies lower our confidence in their reported accuracy parameters. For example, Dinpanah et al.³⁹ examine the ability of the Escape tool, a five-question screener applied in emergency room settings, for identifying children exposed to physical abuse, sexual abuse, emotional abuse, or neglect, and report a sensitivity and specificity of 100% and 98% respectively. While these numbers seem impressive, their study suffers from serious verification bias as approximately 137 out of 6120 (2.2%) of children suspected to have been maltreated in their study received the reference standard. For the children who did not receive the reference standard, there is no way to ascertain the number of children who were maltreated but unidentified (false negatives). Furthermore, as inclusion in this study involved a convenience sample of children/families who a) gave consent for participation and b) cooperated in filling out the questionnaire, we do not know if the children in this study are representative. Similarly, we have less confidence in the high sensitivity and specificity values reported by Greiner et al.⁴⁴ for medical child abuse given that the study was a case-control design (and selecting children with maltreatment and not can exaggerate accuracy outcomes) and also in this study their sensitivity and specificity rates were optimized according to a set of data without pre-specifying a threshold, so their diagnostic accuracy rates may not perform as well on an independent sample.

It is perhaps only the study by Sittig et al.² where we feel slightly more confident in the results. Sittig et al.² evaluated the ability of the SPUTOVAMO five-question screener to identify children exposed to physical abuse or neglect in children entering the emergency room with any physical injury. Looking at the absolute numbers, clinicians can estimate that using SPUTOVAMO to assess for physical abuse will result in 0 children (confidence interval of 0 to 12 or 60 depending on 2% or 10% prevalence of maltreatment) being missed per 100,000 (false negative) and over 12,000 children being misidentified as physically abused (false positive). Similarly, when using the SPUTOVAMO to determine cases of neglect, 334 to 1670 children per 100,000 will be missed and over 12,000 children per 100,000 will be misidentified as neglected. These numbers do not inspire confidence, especially given that some qualitative research suggests that physicians report having an easier time detecting maltreatment based on physical indicators, such as bruises and broken bones, but have more challenge identifying less overt forms of maltreatment, such as 'mild' physical abuse, emotional abuse, and children's exposure to IPV.¹⁹ The authors of this study suggest something similar when they state that the SPUTOVAMO "checklist is not sufficiently accurate and should not replace skilled assessment by a clinician".²

5. Conclusion

Several identification tools and strategies are available to assist healthcare providers in the differential diagnosis of children exposed to maltreatment. These tools may also be useful to increase awareness about child maltreatment in order to ensure early assessment and response. However, we still do not have evidence about how specific diagnostic tools impact child safety or well-being. Furthermore, the identified screening tools still cannot identify 100% of maltreated children and many children will be falsely identified as being maltreated by these tools. In light of these findings, we do not recommend changing the overall nature of the recommendation included in the WHO mhGAP, which suggests that clinicians use a case finding approach to identifying children exposed to maltreatment by being "alert to the clinical features associated with child maltreatment and associated risk factors and assess for child maltreatment, without putting the child at increased risk".¹⁵ Given the complexity of accurately identifying children exposed to maltreatment, more training for providers about effective strategies for identifying and responding to children exposed to maltreatment is needed.

Table 2. Description of selected studies estimating diagnostic accuracy of tests identifying child maltreatment								
Study ID / Country	Inclusion criteria	Form of child maltreatment	Index assessment	Baseline sample size	Reference standard	Sensitivity (sens) and specificity (spec) (95% CI)	False negatives (FN) and false positives (FP) per 100,000 (95% CI) for prevalence of 2% or 10%	
							2%	10%
Child maltreatment - physical abuse (PA), sexual abuse (SA), emotional abuse (EA), neglect (N), or children's exposure to IPV (CE-IPV)								
Schouten 2017 ³⁸ / The Netherlands	Children <18 years presenting to Out-of-hours Primary Care locations (OPC) in Utrecht, the Netherlands	PA, SA, EA, N, CE-IPV	SPUTOVAM O-R2 checklist ¹	5592	Report to CPS in 10 months following attendance at the OPC	Sens: 15% (7-26) Spec: 98 (98-99)	FN: 1705 (1476-1860) FP: 1754 (1470-2156)	FN: 8525 (7380-9300) FP: 1611 (1350-1980)
Dinpanah 2017 ³⁹ / Iran	Children <16 years of age who presented to emergency department in Babol, Iran	PA, SA, EA, N, CE-IPV	Escape tool ²	6120	Reference standard was a child abuse team (pediatrician, social worker, forensic physician) who only examined children diagnosed as having	Sens: 100% (88-100)	FN: 0 (0-248) FP:	FN: 0 (0-1240) FP:

¹ SPUTOVAMO-R2 questions include: 1. Injury compatible with history and corresponding with age of child?; 2. Delay in seeking help without satisfactory explanation?; 3. History consistent when repeated?; 4. Father/mother and child: Appropriate behavior/interaction?; 5. Parents took adequate measures?

² Escape tool questions include: 1. Is the history consistent?; 2. Was seeking medical help unnecessarily delayed?; 3. Does the onset of the injury fit with the developmental level of the child?; 4. Is the behavior of the child, his or her carers and their interaction appropriate?; 5. Are findings of the head-to-toe examination in accordance with the history?; 6. Are there other signals that make you doubt the safety of the child or other family members?

					child abuse by a trained emergency medicine specialist	Spec: 98% (98-99)	1666 (1372-2058)	1530 (1260-1890)
Louwers 2014 ⁴⁰ / The Netherlands	Children <18 years of age who visited one of three emergency department in the Netherlands	PA, SA, EA, N, CE-IPV	Escape tool ³	18,275	Only suspected cases were independently evaluated by an expert panel consisting of four physicians with extensive experience in child abuse, of whom one was a forensic pediatrician and two were pediatricians	Sens: 80% (67-89) Spec: 98% (98-99)	FN: 400 (220-660) FP: 1960 (980-1960)	FN: 2000 (1100-3300) FP: 1800 (900-1800)
Bernstein 1997 ²⁶ / U.S.	Adolescents (12-17) who were admitted to a private psychiatric hospital in the United States	SA	Childhood trauma questionnaire ⁴	398	Therapist assessment using admission notes, discharge summary, and patient's hospital chart	Sens: 86 (73-94) Spec: 76 (69-82)	FN: 280 (126-547) FP: 23448 (17398-30728)	FN: 1400 (628-2736) FP: 21534 (15978-28220)
		PA				Sens: 82 (71-89)	FN: 368 (216-586)	FN: 1842 (1079-2931)

³ Escape questions include: 1. Is the history consistent?; 2. Was seeking medical help unnecessarily delayed?; 3. Does the onset of the injury fit with the developmental level of the child?; 4. Is the behavior of the child, his or her carers and their interaction appropriate?; 5. Are findings of the head-to-toe examination in accordance with the history?; 6. Are there other signals that make you doubt the safety of the child or other family members?

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						Spec: 73 (65-80)	FP: 26609 (19987-34394)	FP: 24437 (18355-31586)
		EA				Sens: 79 (69-87)	FN: 410 (251-629)	FN: 2051 (1253-3146)
						Spec: 72 (64-79)	FP: 27258 (20568-35076)	FP: 25033 (18889-32213)
		PN				Sens: 77 (63-87)	FN: 453 (255-731)	FN: 2264 (1273-3655)
						Spec: 61 (54-67)	FP: 38136 (31862-44794)	FP: 35023 (29261-41137)
Child sexual abuse (SA)								
Cheung 2004 ²⁸ / China	Girls <17 referred to sexual abuse evaluation team at hospital in Hong Kong, China	SA	Colposcopic examination of anal and genital findings ⁵	77	Assessment by multidisciplinary team involved in assessing CPS investigation. Team used medical	Sens: 56 (31-79)	FN: 875 (415-1389)	FN: 4375 (2075-6945)

⁵ Findings classified according to Adam's classification of anogenital findings, which uses a number of characteristics to characterize findings as a) clear trauma (e.g., hymen laceration, acute), b) concern for abuse (e.g., bite/suction); c) non-specific (e.g., labial adhesion); and d) normal (e.g., periurethral bands).

					history, behavioural changes, laboratory results, and anogenital findings	Spec: 98 (90-99)	FP: 1607 (84-9781)	FP: 1475 (77-8983)
Berenson 2002 ²⁵ / U.S.	Girls 3-8 years of age, presenting at pediatric clinic in the U.S. with and without sexual abuse	SA	A horizontal hymen diameter of ≥ 6.5 mm in knee chest position	SA: 189 nSA: 197	Review of medical record, completion of Child Sexual Behaviour Inventory by parent, interview with child in private by nurse, psychologist, or social worker	Sens: 29% (22-37) Spec: 86% (80-90)	FN: 1427 (1266-1565) FP: 13842 (9328-19930)	FN: 7133 (6329-7827) FP: 12712 (8567-18303)
Drach 2001 ²⁹ / U.S.	Children between 2-12 years referred to child abuse program in the U.S. for sexual abuse allegations	SA	Child sexual behavior inventory (CSBI)	209	Assessment by multidisciplinary team using forensic medical evaluation, statements made by the child during forensic interviewing, and an assessment of relevant historical information	Sens: 50 (37-63) Spec: 50 (41-58)	FN: 1000 (735-1265) FP: 49324 (41282-57350)	FN: 5000 (3673-6327) FP: 45298 (37912-52669)
Wells 1997 ³⁶ / U.S.	Boys <16 with confirmed or alleged sexual abuse or no		Abbreviated Structured Interview for Symptoms Associated	22 substantiated SA	Confirmed SA involved perpetrator confession, alleged SA involved	Sens: 91 (69-98)	FN: 182 (32-612)	FN: 909 (159-3062)

	sexual abuse (nSA)		with Sexual Abuse (ASASA) ⁶	47 alleged SA 52 nSA	medical examiner evaluation	Spec: 88 (76-95)	FP: 11308 (4683-23647)	FP: 10385 (4301-21716)
Emotional abuse (EA)								
Fernandopulle 2003 ³⁰ / Sri Lanka	Children 13-15 years in school	EA	Scale for identifying emotional abuse ⁷	98	Psychiatrist assessment during child interview	Sens: 77% (56-90) Spec: 51% (39-63)	FN: 462 (195-882) FP: 47639 (36043-59381)	FN: 2308 (975-4408) FP: 43750 (33101-54533)
Medical child maltreatment (aka Munchausen syndrome by proxy)								
Greiner 2013 ⁴⁴	Children <18 years with confirmed medical child	Medical CM	Medical child abuse screening instrument	CM: 19	All patients included in the confirmed medical	Sens:	FN: 105 (6-562)	FN: 526 (28-2811)

⁶ Three or more positive questions: 1) Sudden Emotional/Behavioral Changes; 2) Difficulty Getting to Sleep; 3) Sleeping More Than Usual; 4) Crying Easily; 5) Fear of Being Left Alone; 6) Fear of Being Left With a Particular Person; 7) Change to Poor School Performance; 8) Knows More About Sex and Sexual Activities Than Expected for Age; 9) Unusually Interested or Curious About Sex Matters or Private Parts; 10) Unusually Aggressive Toward Playmate or Toy's Private Parts; 11) Masturbates or Plays With Self More Than You Would Expect to be Normal; 12) Frequent Stomach aches

⁷ Each item on score was rated on a scale of 1-4 (one meaning 'always', 4 meaning 'never'). Example of a scale item is: 9) How do your parents assess you? 9.1) A lucky child; 9.2) A troublesome child; 9.3) An unwanted child; 9.4) A useless child; 9.5) A sickly child; 9.6) Better if you belonged to the opposite sex; 9.7) Better if was like a sibling; 9.8) Better if was like a child in the neighbourhood or classmate

U.S.	abuse, and children <18 who were hospitalized with the discharge diagnosis of apnea, diarrhea/vomiting, or seizures/epilepsy		using a cutoff score $\geq 4^8$	Controls: 389	CM cohort were previously reported to CPS and medical CM had been substantiated; all controls had no concerns for medical CM in their records and none had been reported to CPS	95 (72-100) Spec: 96 (93-97)	FP: 4283 (2594-6900)	FP: 3933 (2382-6337)
Physical abuse (PA) and neglect (N)								
Sittig 2016 ² / The Netherlands	Children <8 years of age admitted to an emergency room for any physical injury	PA	SPUTOVAM O checklist ⁹ (mandatory implementation)	720	Three member expert panel review of 1. Medical file from ER visit, 2. Detailed history of injury from Child Abuse Pediatrician, 3. Risk factors derived from GP, youth doctor, and CPS questionnaires, 4. 6-month follow-up information from electronic record	Sens: 100 (30-100) Spec : 86 (84-88)	FN: 0 (0-12) FP: 13230 (10878-15974)	FN: 0 (0-60) FP: 12150 (9990-14670)

⁸ MCA screening instrument questions include: 1. Caregiver has features of Munchausen syndrome...; 2. Caregiver had received counseling/psychiatric care; 3. Caregiver has personal history of child abuse; 4. Caregiver leave hospital against medical advice or insists on transfer; 5. History of cyanosis; 6. Care at >1 hospital in 6 mo; 7. Consults with ≥ 1 subspecialist; 8. Illness abates when patient out of care of primary caretaker; 9. >1 episode of apnea postdischarge from nursery; 10. Bruising or trauma to face/neck; 11. Prescription/request for apnea monitor; 12. Chronic diarrhea with or without vomiting >2 wk; 13. Chronic vomiting/diarrhea without definite diagnosis; 14. Erratic drug levels; and 15. Toxic drug levels on >1 occasion.

⁹ SPUTOVAMO questions include: 1. Injury compatible with history and corresponding age of child?; 2. History consistent when repeated?; 3. Delay in ER attendance without satisfactory explanation?; 3. Top/toe examination: suspect?; 4. Unexplained (other) injury in history?; 5. Father/mother and child: Appropriate behavior/interaction?

		N				Sens: 83 (36-100)	FN: 334 (8-1290)	FN: 1670 (40-6450)
						Spec: 87 (84-89)	FP: 13034 (10682-15680)	FP: 11970 (9810-14400)
Bousema 2016 ⁴¹ / The Netherlands	Children <18 years of age presenting with burn injuries to burn centre in Rotterdam, The Netherlands	PA	SPUTOVAM O checklist	498	Provision of additional support, as determined by burn centre child abuse team, CPS, or both (i.e., suspected child abuse)	Sens: 73% (57-86)	FN: 536 (284-858)	FN: 2680 (1420-4290)
						Spec: 95% (92-96)	FP: 5377 (3479-8147)	FP: 4938 (3195-7482)
Pierce 2010 ³² / U.S.	Children <4 with abusive or accidental trauma	PA	Bruising classification and regression tree ¹⁰	42 abusive trauma 53 accident	Hospital medical team evaluation, CPS evaluation, or stated cause of injury incompatible	Sens: 97 (82-100)	FN: 61 (3-350)	FN: 303 (16-1751)
						Spec: 84 (68-93)	FP: 15474 (6455-31289)	FP: 14211 (5928-28735)

¹⁰ Classification and regression tree involves the following 3 questions: 1) Is there bruising in the torso, ear, and neck region of a child ≤ 4 years of age?; 2) Is there bruising in any region of an infant ≤ 4 months of age? (3) Is there a confirmed accident in a public setting that accounts for the bruising in the TEN region or on the infant?

				al trauma				
Valvano 2009 ³³ / U.S.	Children <18 with fractures (excluding skull fracture) referred to child abuse team in U.S.	PA	Bruising associated with a fracture	150	Child abuse experts who reviewed chart summaries of patients	Sens: 26 (18-36) Spec: 75 (62-85)	FN: 1484 (1278-1649) FP: 24070 (14244-37281)	FN: 7419 (6389-8246) FP: (22105 (13081-34238)
Chang 2005 ²⁷ / U.S.	Children <14 years with at least one ICD-9 diagnosis of physical injury	PA	Screening index for physical child abuse (SIPCA) ¹¹	58,558	E codes and certain ICD-9-CM codes in the 995.5x range	Sens: 87 (83-90) Spec: 80 (80-81)	FN: 268 (209-340) FP: 19110 (18797-19428)	FN: 1342 (1047-1702) FP: (17550 (17263-17842)
Abusive head trauma (AHT)								
Kim 2017 ⁴⁸ / U.S.	Children <12 months with diagnosis of head injury defined as a skull fracture or	AHT	Skeletal surveys	563	Trauma registry contains families evaluated by a Child Abuse Team, comprised of physicians, social workers, pastoral	Sens: 44% (35-54)	FN: 1117 (923-1303)	FN: 5586 (4613-6517)

¹¹ A 15-point that assigns points to the following factors, where a score >3 is indicative of physical abuse: 1) fracture of base or vault of skull (1 point); 2) contusion of eye (2 points); 3) rib fracture (2 points); 4) intracranial bleeding (2 points); 5) multiple burns (2 points); 6) age group 1-3 (2 points); 7) age group 0-1 (6 points)

	intracranial injury (2008-2015)				care and law enforcement	Spec: 99% (97-99)	FP: 1089 (282-3414)	FP: 1000 (259-3135)
Palifka 2016 ⁴² / U.S.	Children <3 years of age diagnosed with AHT and children and accidentally injured (AI) children with moderate-to-severe traumatic brain injury	AHT	Lacerations	291 (AHT) and 214 (AI)	Perpetrator confession and/or evaluation by the institutional child abuse medical evaluation team were determined to have inflicted trauma	Sens: 13% (8-20) Spec: 100% (85-100)	FN: 1737 (1595-1836) FP: 0 (0-14718)	FN: 8686 (7977-9182) FP: 0 (0-13516)
Cowley 2015 ⁴³ / U.K. & France	Children <24 months admitted to hospital with an intracranial injury	AHT	Predicting Abusive Head Trauma (PredAHT) tool ¹² .	198	Thorough multidisciplinary assessment or court proceedings, social and historical factors beyond the presenting injury, or a perpetrator admission or independently witnessed abusive incident.	Sens: 66 (53-77) Spec: 82 (74-88)	FN: 677 (457-935) FP: 17684 (11880-25346)	FN: 3385 (2287-4674) FP: 16241 (10910-23277)
Acker 2014 ⁴⁵ / U.S.	Children 5 and under who were admitted with	AHT	Hematocrit (proportion of blood in	921	Diagnosis of AHT was made by the Child Advocacy and Protection	Sens: 48 (43-53)	FN:	FN:

¹² Estimates AHT from: 1. apnea; 2. retinal hemorrhage; 3. rib, skull, and long-bone fractures; 4. seizures; and 5. head and/or neck bruising

	diagnosis of traumatic brain injury		red blood cells) ≤30% on presentation		team, led by a child advocacy expert and includes social workers, nurses, psychologists, psychiatrists and attorneys	Spec: 81 (77-84)	1043 (939-1147) FP: 79147 (75623-82242)	5216 (4694-5734) FP: 72686 (69450-75528)
Hymel 2014 ⁴⁶ / U.S.	Children <3 admitted to PICU for the management of symptomatic, acute, closed, traumatic, cranial, or intracranial injuries confirmed by computed tomography (CT) or magnetic resonance imaging (MRI)	AHT	Four-variable clinical prediction rule ¹³	291	Primary caregiver admission of abusive acts, abusive acts witnessed by an independent observer, primary caregiver denial of head trauma, primary caregiver gives account of injury that is inconsistent or developmentally inconsistent, above or equal to 2 categories of extracranial injuries moderately or high suspicious for abuse	Sens: 96 (90-99) Spec: 43 (35-50)	FN: 81 (30-193) FP: 56335 (48611-63717)	FN: 403 (149-963) FP: 51736 (44642-58516)
Hymel 2013 ⁴⁷ / U.S.	Children <3 hospitalized acutely in a PICU for treatment of symptomatic,	AHT	Five-variable abusive head trauma clinical	209	Same as above	Sens: 96 (89-99)	FN: 84 (27-221)	FN: 421 (136-1104)

¹³ Four-variable clinical prediction rule include: a) Any clinically significant respiratory compromise at the scene of injury, during transport, in the emergency department, or before admission?; b) Any bruising involving the child's ears, neck, or torso?; c) Any subdural hemorrhages or fluid collections that are bilateral or involve the interhemispheric space?; d) Any skull fractures other than an isolate, unilateral, nondiastatic, linear, parietal skull fracture?

	acute, closed (nonpenetrating), traumatic, cranial or intracranial injuries confirmed by computed tomography or magnetic resonance imaging		prediction rule ¹⁴			Spec: 36 (27-46)	FP: 62754 (53366-71203)	FP: 57632 (49009-65390)
Vinchon 2010 ³⁴ / France	Children <2 years referred to the emergency room, the pediatric intensive care unit, or neurosurgical department	AHT	Brain ischemia	84	Expert assessment by multidisciplinary team (neurosurgeon, pediatrician, forensic doctor, psychologist, and social worker)	Sens: 27 (15-42)	FN: 1467 (1156-1698)	FN: 7333 (5779-8490)
			Subdural hematoma			Spec: 97 (85-100)	FP: 2513 (131-14774)	FP: 2308 (121-13568)
						Sens: 82 (67-91)	FN: 356 (170-652)	FN: 1778 (851-3258)
						Spec: 56 (40-72)	FP: 42718 (27624-59027)	FP:

¹⁴ Prediction rule entails the following questions: 1) Acute respiratory compromise prior to admission?; 2) Seizure(s) or acute encephalopathy prior to admission?; 3) Bruising of the ear(s), neck, or torso?; 4) Interhemispheric or bilateral subdural hemorrhage(s)?; 5) Any skull fracture(s) other than an isolated unilateral, nondiastatic, linear, parietal skull fracture?

								39231 (25369-54209)
			Severe retinal hemorrhage			Sens: 56 (40-70) Spec: 97 (85-100)	FN: 889 (599-1198) FP: 2513 (131-14774)	FN: 4444 (2995-5988) FP: 2308 (121-13568)
			Absence of scalp swelling			Sens: 98 Spec: 77	FN: 44 (2-265) FP: 22615 (11471-38921)	FN: 222 (12-1323) FP: 20769 (10535-35744)
Vinchon 2005 ³⁵ / France	Children <2 diagnosed with craniocerebral traumatic injuries diagnosed based on CT scan	AHT	Retinal hemorrhage grade 1,2 or 3	129	Assessment by multidisciplinary team multidisciplinary team (surgeons, ophthalmologists, pediatricians, forensic pathologists, and social workers)	Sens: 75 (61-85) Spec: 93 (84-97)	FN: 500 (296-773) FP: 6712 (2498-15610)	FN: 2500 (1481-3865) FP: 6164 (2294-14336)

			Retinal hemorrhage grade 2 or 3			Sens: 66 (52-78) Spec: 100 (94-100)	FN: 679 (443-958) FP: 0 (0-6104)	FN: 3393 (2216-4791) FP: 0 (0-5606)
Hettler 2003 ³¹ / U.S.	Children <3 admitted to inpatient services with traumatic intracranial hemorrhage	AHT	No history of trauma	163	Witnessed or confessed abuse, indicators of AHT (e.g., retinal hemorrhages), CPS notes	Sens: 69 (54-81) Spec: 97 (92-99)	FN: 612 (374-912) FP: 2579 (688-7909)	FN: 3061 (1868-4558) FP: 2368 (614-7263)
Wells 2002 ³⁶ / U.S.	Children <3 with intracranial hemorrhage detected via CT scan	AHT	Four variable model for predicting AHT ¹⁵	293	Assessment of patient age, sex, circumstances of injury, results of CPS investigations	Sens: 84 (77-89) Spec: 83 (74-89)	FN: 324 (217-467) FP: 17083 (10858-25616)	FN: 1622 (1086-2337) FP: 15688 (9972-23525)

¹⁵ Four variables include: 1) convexity subdural hematoma, 2) interhemispheric subdural hematoma, 3) lack of a skull fracture, and 4) hygroma

Table 4. Consequences of screening depending on screening tool per 100,000 children*						
Studies without verification bias						
	SPUTOVAMO PA		SPUTOVAMO N ²		Case finding	Consequences of screening and case finding***
Sensitivity (%)	100%		83%			
Specificity (%)	96%		87%			
Prevalence**	2%	10%	2%	10%		
True positives	2000	10,000	1666	8330		
False negatives (missed cases)	0	0	334	1670		
True negatives	84,770	77,850	84966	78030		
						• SPUTVAMO PA: 340 to 1700 of reported physical abuse cases will be substantiated; some form of post-investigation services will be received by 211 to 1054 of children with substantiated physical abuse and 540 to 2700 children without substantiated physical abuse • SUPTVAMO N: 283 to 1416 of reported cases will be substantiated; some form of post-investigation services will be received by 175 to 878 of children with substantiated neglect and 450 to 2249 children without substantiated neglect • Case finding:
						• SPUTVAMO PA: 0 children will be missed • SPUTVAMO N: 84 to 418 will not receive access to the mental health services they need • Case finding:
						Children will appropriately not be labelled as being maltreated and will not undergo an investigation or be

						treated for maltreatment that they have not been exposed to.			
False positives (over treated)	13,230	12,150	13034	11970		• SPUTVAMO-PA: Over 12,150 receive a distressing CPS investigation and potentially 2782 children could be removed from their home inappropriately • SPUTVAMO-N: Over 11,970 receive a distressing CPS investigation and over 2741 could be removed from their home inappropriately • Case finding:			
Studies suffering from serious verification bias									
	SPUTOVAMO CM³⁸		SPUTVAMO PA⁴¹		Escape CM (1)⁴⁰		Escape CM (2)³⁹		Consequences of screening and case finding***
Sensitivity (%)	15%				88%		100%		
Specificity (%)	98%				98%		98%		
Prevalence**	2%	10%	2%	10%	2%	10%	2%	10%	
True positives	295	1475	1464	7320	1600	8000	2000	10,000	Per 100,000 children suspected of maltreatment who are reported to CPS: • SPUTOVAMO-CM: 50 to 251 of reported cases will be substantiated; some form of post-investigation services will be received by 31 to 156 of children with substantiated maltreatment and 80 to 398 children whose report was not substantiated • SPUTOVAMO PA: 249 to 1244 of reported cases will be substantiated; some form of post-investigation services will be received by 154 to 772 of children with substantiated maltreatment and 395 to 1976 children whose report was not substantiated

								• Escape CM (1): 272 to 1360 of reported cases will be substantiated; some form of post-investigation services will be received by 169 to 843 of children with substantiated maltreatment and 432 to 2160 children whose report was not substantiated • Escape CM (2): 340 to 1700 of reported cases will be substantiated; some form of post-investigation services will be received by 211 to 1054 of children with substantiated maltreatment and 540 to 2700 of children whose report was not substantiated	
False negatives (missed cases)	1705	8525	536	2680	400	2000	0	0	Per 100,000 children who are missed: • SPUTOVAMO-CM: 426 to 2131 will not receive access to the mental health services they need • SPUTOVAMO-PA: 134 to 670 will not receive access to the mental health services they need • Escape-CM (1): 100 to 500 will not receive access to the mental health services they need • Escape-CM (2): 0 children are missed
True negatives	96,246	88,389	96,623	85,062	96,040	88,200	96,334	88,470	Children will appropriately not be labelled as being maltreated and will not undergo an investigation or be treated for maltreatment that they have not been exposed to.
False positives (over treated)	1754	1611	5377	4938	1960	1800	1666	1530	Per 100,000 children who are over treated: • SPUTOVAMO-CM: Over 1611 receive a distressing CPS investigation and 369 could be removed from their home inappropriately • SPUTOVAMO-PA: Over 4938 receive a distressing CPS investigation and 1131 could be removed from their home inappropriately • Escape-CM (1): Over 1800 receive a distressing CPS investigation and 412 could be removed from their home inappropriately

					• Escape-CM (2): Over 1530 receive a distressing CPS investigation and 350 could be removed from their home inappropriately
*All studies except SPUTVAMO for PA & N suffer from serious verification bias, and so likely underestimate false positives and false negatives **Prevalence rates of 2-10% children exposed to maltreatment presenting to emergency rooms²² ***According to U.S. data, 17% of children who are reported to child welfare are considered to have substantiated maltreatment and of these children with substantiated maltreatment, 62% of children with substantiated maltreatment may receive post investigation services and 27% of children with non-substantiated maltreatment receive post investigation services⁴⁹; 25-50% of children exposed to maltreatment need treatment for mental health concerns (calculations in table based on 25%)⁵¹; 22.9% of children were removed from their homes after a CPS investigation⁴⁹					

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Appendix I – World Health Organizations (WHO) Mental Health Gap Action Programme (mhGAP) update

CH5: Effective strategies for detecting maltreatment of children and youth within the context of mental health and developmental assessment [New 2015]

Recommendation

Health care providers should be alert to the clinical features associated with child maltreatment and associated risk factors and assess for child maltreatment, without putting the child at increased risk.

Quality of Evidence: Very low

Strength of recommendation: Conditional

Rationale:

Evidence supporting the efficacy of strategies for detecting maltreatment of children and youth within the context of mental health and developmental assessment is sparse and inconclusive. No studies have evaluated the performance of measures in predicting referrals and health outcomes. However, it is generally agreed that it is important for health care providers to detect child maltreatment. It is recognised that assessment of child maltreatment requires a clinician who is competent enough to ask the right questions and to respond appropriately.

Remarks:

Inquiry into child maltreatment should occur in the context of case finding and diagnostic assessment by clinicians competent to do so and should be followed by interventions, referral and/or follow up. Inquiry and following actions should take into account the availability of interventions, such as caregiver skills training, and services. There is no evidence to support universal screening or routine inquiry.

The strategies, including reporting and follow-up of the assessment should be culturally sensitive and should not allow violation of children's basic human rights according to internationally endorsed principles.

Examples of child maltreatment include physical abuse, sexual abuse, neglect, emotional abuse and all other forms of child maltreatment.

Appendix II – Example search strategy

Database: Ovid MEDLINE(R) Epub Ahead of Print, In-Process & Other Non-Indexed Citations, Ovid MEDLINE(R) Daily and Ovid MEDLINE(R) <1946 to Present>

Search Strategy:

-
- 1 exp Child Abuse/ or shaken baby syndrome/ or incest/ (28035)
 - 2 ((child* or girl? or boy? or infant* or baby or babies or toddler* or preschool* or pre-school* or teen* or adolescen* or youth*) adj3 (abuse? or abusing or maltreat* or neglect* or assault* or rape? or raping or molest* or (sex* adj2 abus*))).tw,kw. (24062)
 - 3 or/1-2 (36961)
 - 4 exp child abuse/di (4859)
 - 5 (detect* or diagnos* or screen* or identify* or identification or case-find*).tw,kw. (4898115)
 - 6 or/4-5 (4901217)
 - 7 3 and 6 (11586)
 - 8 "Reproducibility of Results"/ (329941)
 - 9 "Sensitivity and Specificity"/ (311687)
 - 10 "Predictive Value of Tests"/ (170146)
 - 11 [sensitivity.tw](#),kw. (649113)
 - 12 [specificity.tw](#),kw. (384520)
 - 13 validat*.tw,kw. (366513)
 - 14 predict*.tw,kw. (1215574)
 - 15 or/8-14 (2560605)
 - 16 7 and 15 (2019)
 - 17 limit 16 to (english language and yr="2012 -Current") (644)

Appendix III

Study ID:

Item	Decision – yes/no/unsure
Patient selection bias ○ Code as “low” bias if all questions answered as “yes” ○ Code as “high” bias if 2+ questions coded as “no” ○ Code as “unclear” bias otherwise	
1. Was a consecutive or random sample of patients enrolled? Note: rank as “no” if patients selected for their diagnosis.	Decision: Sentence snippet (SS): Comment:
2. Was a case-control design avoided?	Decision: SS: Comment:
3. Did the study avoid inappropriate exclusions? Note: • Appropriate exclusions. It would be appropriate to exclude known cases of child abuse, as this could overestimate the sensitivity/specificity values and the purpose of the test is to evaluate cases where one is unsure. (This is different for dual gate studies that are comparing CM to non-CM.) • Inappropriate exclusions. In general, studies should not exclude conditions that may present as a conflicting diagnosis when presenting for treatment. Ideally studies should just offer an age range of children that are	Decision: SS: Comment:

consecutively sampled for whatever population is being studied (e.g., AHT in traumatic brain injury patients; physical abuse in children presenting with injury, etc.) Acceptable age ranges. • Physical abuse (0-12). As very young children (children under 4) are at most risk of serious impairment and death resultant from physical abuse, and rates of non-fatal physical abuse peak between 3 and 12⁵², measures of physical abuse must at minimum address this age group (but other age groups are also relevant to consider). ○ Abusive head trauma (0-5). Abusive head trauma tends to peak at 1 year of age, but cases have been found up to 5 years of age.⁵³ Therefore an appropriate age range to sample is 0-5. • Sexual abuse (0-17, especially puberty). As sexual abuse tends to peak at onset of puberty and adolescence, studies assessing this form of maltreatment must at minimum address this age group (but other age groups are also relevant to consider).	
Index test - ○ Code as “low” bias is all questions answered as “yes” ○ Code as “high” bias if both questions coded as “no” ○ Code as “unclear” bias otherwise	
4. Were the index test results interpreted without knowledge of the results of the reference standard? Note: code ‘unclear’ if blinding not explicitly stated; ‘no’ if authors state that blinding did not occur; and ‘yes’ if authors state that blinding did occur	Decision: SS: Comment:
5. If a threshold was used, was it pre-specified?	Decision:

Note: Code N/A if study does not appear to use a threshold to optimize the test. Code no if any threshold was not pre-specified and yes if was pre-specified.	SS: Comment:
Reference standard - ○ Code as “low” bias is all questions answered as “yes” ○ Code as “high” bias if both questions coded as “no” ○ Code as “unclear” bias otherwise	
6. Is the reference standard likely to correctly classify the target condition? Note: Acceptable references standards listed in Bailhache’s 2013 systematic review were also used for this update, including: • expert assessments, such as child’s court disposition; • substantiation by the child protection services or other social services; • diagnosis by a medical, social or judicial team using one or several information sources (caregivers or child interview, child symptoms, child physical examination, and other medical record review). Like Bailhache’s 2013 systematic review, unacceptable reference standards include assessments made only by the caregiver. CPS reports without any follow-up were also not considered acceptable reference standards, as reports only indicate suspicion of maltreatment.	Decision: SS: Comment:
7. Were the reference standard results interpreted without knowledge of the results of the index test? Note: code ‘unclear’ if blinding not explicitly stated for outcome adjudicators; ‘no’ if	Decision: SS:

authors state that index test was part of what was used to determine if abuse occurred; and 'yes' if authors state that blinding did occur	Comment:
Flow & timing - ○ Code as "low" bias is all questions answered as "yes" ○ Code as "high" bias if 2+ questions coded as "no" ○ Code as "unclear" bias otherwise	
8. Was there an appropriate interval between index test(s) and reference standard? Note: Child maltreatment can be chronic and persistent and as such may not change in a short period of time. However, given that CPS responses to reports in some countries must be executed between 2 to 60 days⁵⁴, 60 days was determined to be the maximum acceptable time between reference standard and index test.	Decision: SS: Comment:
9. Did all patients receive a reference standard? Note: Would have to state that <i>all</i> patients – even non-abused patients – received reference standard to mark as "yes". If clearly only maltreatment patients were assessed by reference standard, mark "no". If not clarified, mark "unclear".	Decision: SS: Comment:
10. Did patients receive the same reference standard?	Decision: SS: Comment:
11. Were all patients included in the analysis?	Decision:

Missing data: Was there a high number (>10%) of drop-outs, invalid results, or indeterminate results? If so, mark as "no".	SS: Comment:

Web Annex 2b: GRADE tables – Identifying Child Maltreatment

GRADE tables or studies assessing identification tools

A note about how the GRADE tables are organized:

As the PICO question driving this review is about “screening” (and case finding, for which there are no studies), tools that are more clearly identifiable as screening tools were placed upfront (although the other identification studies could be modified and tested as screening tools). One screening study (Sittig 2016) that does not suffer from serious verification bias was separated out from the other screening studies that do suffer from verification bias. The prevalence is presented as a range from 2-10%, which is the range of maltreatment reported in emergency room (ER) settings where most of the screening studies take place.¹ This number is not reflective of the prevalence reported in individual studies (e.g., some of the screening studies report prevalence rates of less than 1% and other identification tools are used in psychiatric settings where there could be a prevalence of 41% or higher of children who have been exposed to maltreatment). However, using a consistent prevalence range allows us to compare the studies on an equal footing when considering true/false positives/negatives per 100,000 children.

1. Louwers, E. C. F. M., Affourtit, M. J., Moll, H. A., de Koning, H. J. & Korfage, I. J. Screening for child abuse at emergency departments: a systematic review. *Arch. Dis. Child.* **95**, 214–218 (2010).

NO VERIFICATION BIAS

Physical abuse & neglect

Question: Should screening or case-finding be used to diagnose child maltreatment in children exposed to physical, sexual, emotional abuse or neglect (S'17 - PA)?

Sensitivity	1.00 (95% CI: 0.99 to 1.00)				<table><tr><td>Prevalences</td><td>2%</td><td>10%</td><td></td></tr></table>				Prevalences	2%	10%	
Prevalences	2%	10%										
Specificity	0.86 (95% CI: 0.84 to 0.89)											
Outcome	№ of studies (№ of patients)	Study design	Factors that may decrease quality of evidence					Effect per 100,000 patients tested		Test accuracy QoE		
			Risk of bias	Indirectness	Inconsistency	Imprecision	Publication bias	pre-test probability of 2%	pre-test probability of 10%			
True positives (patients with child maltreatment)	1 study 720 patients ^a	cross-sectional (cohort type accuracy study)	very serious ^b	not serious	not serious	not serious	none	2000 (1988 to 2000)	10000 (9940 to 10000)	⊕⊕○○ LOW		
False negatives (patients incorrectly classified as not having child maltreatment)								0 (0 to 12)	0 (0 to 60)			
True negatives (patients without child maltreatment)	1 study 720 patients ^a	cross-sectional (cohort type accuracy study)	very serious ^b	not serious	not serious	not serious	none	84770 (82026 to 87122)	77850 (75330 to 80010)	⊕⊕○○ LOW		
False positives (patients incorrectly classified as having child maltreatment)								13230 (10878 to 15974)	12150 (9990 to 14670)			

Explanations

- a. Sittig 2016. Children <8 years of age admitted to one of four emergency rooms in the Netherlands for any physical injury. Index test: SPUTOVAMO checklist where positive answer to one of five questions indicates suspicion of maltreatment (e.g., Injury compatible with history and corresponding age of child?). Reference standard: positively identified children and 15% random sample of negative screens assessed by three member expert panel review of 1. Medical file from ER visit, 2. Detailed history of injury from Child Abuse Pediatrician, 3. Risk factors derived from GP, youth doctor, and CPS questionnaires, 4. 6-month follow-up information from electronic record.
- b. Downgraded due to very serious risk of bias, primarily due to high loss to follow-up (>25%).

Question: Should screening or case-finding be used to diagnose child maltreatment in children exposed to physical, sexual, emotional abuse or neglect (S'17-N)?

Sensitivity	0.83 (95% CI: 0.35 to 1.00)
Specificity	0.87 (95% CI: 0.84 to 0.89)

Prevalences	2%	10%	

Outcome	No of studies (No of patients)	Study design	Factors that may decrease quality of evidence					Effect per 100,000 patients tested		Test accuracy QoE
			Risk of bias	Indirectness	Inconsistency	Imprecision	Publication bias	pre-test probability of 2%	pre-test probability of 10%	
True positives (patients with child maltreatment)	1 study 720 patients ^a	cross-sectional (cohort type accuracy study)	very serious ^b	not serious	not serious	not serious	none	1666 (710 to 1992)	8330 (3550 to 9960)	⊕⊕○○ LOW
False negatives (patients incorrectly classified as not having child maltreatment)								334 (8 to 1290)	1670 (40 to 6450)	
True negatives (patients without child maltreatment)	1 study 720 patients ^a	cross-sectional (cohort type accuracy study)	very serious ^b	not serious	not serious	not serious	none	84966 (82320 to 87318)	78030 (75600 to 80190)	⊕⊕○○ LOW
False positives (patients incorrectly classified as having child maltreatment)								13034 (10682 to 15680)	11970 (9810 to 14400)	

Explanations

a. Sittig 2016. Children <8 years of age admitted to one of four emergency rooms in the Netherlands for any physical injury. Index test: SPUTOVAMO checklist where positive answer to one of five questions indicates suspicion of maltreatment (e.g., Injury compatible with history and corresponding age of child?). Reference standard: positively identified children and 15% random sample of negative screens assessed by three member expert panel review of 1. Medical file from ER visit, 2. Detailed history of injury from Child Abuse Pediatrician, 3. Risk factors derived from GP, youth doctor, and CPS questionnaires, 4. 6-month follow-up information from electronic record.

b. Downgraded due to very serious risk of bias, primarily due to high loss to follow-up (>25%)

SERIOUS VERIFICATION BIAS

Child maltreatment

Question: Should screening or case-finding be used to diagnose child maltreatment in children exposed to physical, sexual, emotional abuse or neglect (Sh'17)?

Sensitivity	0.15 (95% CI: 0.07 to 0.26)							
Specificity	0.98 (95% CI: 0.98 to 0.98)							
					Prevalences	2%	10%	

Outcome	№ of studies (№ of patients)	Study design	Factors that may decrease quality of evidence					Effect per 100,000 patients tested		Test accuracy QoE
			Risk of bias	Indirectness	Inconsistency	Imprecision	Publication bias	pre-test probability of 2%	pre-test probability of 10%	
True positives (patients with child maltreatment)	1 study 5592 patients ^a	cross-sectional (cohort type accuracy study)	very serious ^b	not serious	not serious	not serious	none	295 (140 to 524)	1475 (700 to 2620)	⊕⊕○○ LOW
False negatives (patients incorrectly classified as not having child maltreatment)								1705 (1476 to 1860)	8525 (7380 to 9300)	
True negatives (patients without child maltreatment)	1 study 5592 patients ^a	cross-sectional (cohort type accuracy study)	very serious ^b	not serious	not serious	not serious	none	96246 (95844 to 96530)	88389 (88020 to 88650)	⊕⊕○○ LOW
False positives (patients incorrectly classified as having child maltreatment)								1754 (1470 to 2156)	1611 (1350 to 1980)	

Explanations

- a. Schouten 2017. Population: All children aged <19 yrs attending one of the five participating out-of-hours primary care locations (OPC) in Utrecht, the Netherlands. Index test: SPUTOVAMO-R2, where a child is classified as maltreated if 1/5 questions answered as yes (e.g., Injury compatible with history and corresponding with age of child?). Reference standard: Report to CPS in 10 months following attendance at the OPC.
- b. Downgraded for very serious risk of bias due to bias in index test/reference standard (no blinding b/w index test and reference standard interpretation), and patient flow and timing (verification bias). Verification bias - only 151/5592 (2.7%) received reference standard.

Question: Should screening or case finding be used to diagnose child maltreatment in children exposed to physical, sexual, emotional abuse or neglect??

Sensitivity	1.00 (95% CI: 0.88 to 1.00)
Specificity	0.98 (95% CI: 0.98 to 0.99)

Prevalences	2%	10%	

Outcome	№ of studies (№ of patients)	Study design	Factors that may decrease quality of evidence					Effect per 100,000 patients tested		Test accuracy QoE
			Risk of bias	Indirectness	Inconsistency	Imprecision	Publication bias	pre-test probability of 2%	pre-test probability of 10%	
True positives (patients with child maltreatment)	1 study 6120 patients ^a	cross-sectional (cohort type accuracy study)	very serious ^b	not serious	not serious	not serious	none	2000 (1752 to 2000)	10000 (8760 to 10000)	⊕⊕○○ LOW
False negatives (patients incorrectly classified as not having child maltreatment)								0 (0 to 248)	0 (0 to 1240)	
True negatives (patients without child maltreatment)	1 study 6120 patients ^a	cross-sectional (cohort type accuracy study)	very serious ^b	not serious	not serious	not serious	none	96334 (95942 to 96628)	88470 (88110 to 88740)	⊕⊕○○ LOW
False positives (patients incorrectly classified as having child maltreatment)								1666 (1372 to 2058)	1530 (1260 to 1890)	

Explanations

a. Dinpanah 2017. Population: Children <16 yrs who presented to emergency department Shahid Beheshti and Amir Kola Hospitals, Babol, Mazandaran, Iran. Index test: Escape tool where "yes" to 1/5 question indicates abuse (e.g., Is the history consistent?). Reference standard: Child abuse team (pediatrician, social worker, forensic physician) who only examined children diagnosed as having child abuse by a trained emergency medicine specialist

b. Downgraded due to very serious concerns for risk of bias, due to limitations in patient selection (e.g., convenience sampling), index test bias (unclear if interpretation of index test blinded), and bias to patient flow and timing (verification bias). Verification bias - ~137/6120 (2.2%) suspected children received reference standard

Question: Should screening or case-finding be used to diagnose child maltreatment in children exposed to physical, sexual, emotional abuse or neglect?

Sensitivity	0.80 (95% CI: 0.67 to 0.89)					<table><tr><td>Prevalences</td><td>2%</td><td>10%</td><td></td></tr></table>				Prevalences	2%	10%	
Prevalences	2%	10%											
Specificity	0.98 (95% CI: 0.98 to 0.99)												

Outcome	№ of studies (№ of patients)	Study design	Factors that may decrease quality of evidence					Effect per 100,000 patients tested		Test accuracy QoE
			Risk of bias	Indirectness	Inconsistency	Imprecision	Publication bias	pre-test probability of 2%	pre-test probability of 10%	
True positives (patients with child maltreatment)	1 study 18275 patients ^a	cross-sectional (cohort type accuracy study)	very serious ^b	not serious	not serious	not serious	none	1600 (1340 to 1780)	8000 (6700 to 8900)	⊕⊕○○ LOW
False negatives (patients incorrectly classified as not having child maltreatment)								400 (220 to 660)	2000 (1100 to 3300)	
True negatives (patients without child maltreatment)	1 study 18275 patients ^a	cross-sectional (cohort type accuracy study)	very serious ^b	not serious	not serious	not serious	none	96040 (96040 to 97020)	88200 (88200 to 89100)	⊕⊕○○ LOW
False positives (patients incorrectly classified as having child maltreatment)								1960 (980 to 1960)	1800 (900 to 1800)	

Explanations

a. Louwers 2014. Population: Children <18 yrs who visited one of three Dutch emergency departments. Index test: Escape tool where "yes" to 1/5 questions indicates abuse (e.g., Is the history consistent?). Reference standard: Only suspected cases were independently evaluated by an expert panel consisting of four physicians with extensive experience in child abuse, of whom one was a forensic pediatrician and two were pediatricians.

b. Downgraded due to serious risk of bias, primarily due to verification bias. Verification bias: 55/18275 (0.3%) children assessed by reference standard.

Physical abuse

Question: Should screening or case-finding be used to diagnose child maltreatment in children exposed to physical, sexual, emotional abuse or neglect (B'16)?

Sensitivity	0.73 (95% CI: 0.57 to 0.86)					
Specificity	0.95 (95% CI: 0.92 to 0.96)					

Prevalences	2%	10%	

Outcome	No of studies (No of patients)	Study design	Factors that may decrease certainty of evidence					Effect per 100,000 patients tested		Test accuracy CoE
			Risk of bias	Indirectness	Inconsistency	Imprecision	Publication bias	pre-test probability of 2%	pre-test probability of 10%	
True positives (patients with child maltreatment)	1 study 498 patients ^a	cross-sectional (cohort type accuracy study)	very serious ^b	not serious	not serious	not serious	none	1464 (1142 to 1716)	7320 (5710 to 8580)	⊕⊕○○ LOW
False negatives (patients incorrectly classified as not having child maltreatment)								536 (284 to 858)	2680 (1420 to 4290)	
True negatives (patients without child maltreatment)	1 study 498 patients ^a	cross-sectional (cohort type accuracy study)	very serious ^b	not serious	not serious	not serious	none	92623 (89853 to 94521)	85062 (82518 to 86805)	⊕⊕○○ LOW
False positives (patients incorrectly classified as having child maltreatment)								5377 (3479 to 8147)	4938 (3195 to 7482)	

Explanations

a. Bousema 2016. Children <18 years of age presenting with burn injuries to burn centre in Rotterdam, The Netherlands. Index test: SPUTOVAMO checklist where "yes" to 1/5 questions indicates suspicion of abuse (e.g., Injury compatible with history and corresponding age of child?). Reference standard: Provision of additional support to child/family, as determined by burn centre child abuse team, CPS, or both (i.e., suspected child abuse)

b. Downgraded due to very serious concerns for risk of bias, primarily due to verification bias as only children suspected of being abused where given additional support (the reference standard). Furthermore, suspicion of abuse is not confirmation, so the choice of reference standard is a limitation.

Other identification tools

Child maltreatment

Question: Should screening or case-finding be used to diagnose child maltreatment in children exposed to physical, sexual, emotional abuse, or neglect?

Sensitivity	0.86 (95% CI: 0.73 to 0.94)									
Specificity	0.76 (95% CI: 0.69 to 0.82)									
						Prevalences	2%	10%		
Outcome	№ of studies (№ of patients)	Study design	Factors that may decrease certainty of evidence					Effect per 100,000 patients tested		Test accuracy CoE
			Risk of bias	Indirectness	Inconsistency	Imprecision	Publication bias	pre-test probability of 2%	pre-test probability of 10%	
True positives (patients with child maltreatment)	1 study 274 patients ^a	cross-sectional (cohort type accuracy study)	very serious ^b	not serious	not serious	serious ^c	none	1720 (1453 to 1874)	8600 (7264 to 9372)	⊕○○○ VERY LOW
False negatives (patients incorrectly classified as not having child maltreatment)								280 (126 to 547)	1400 (628 to 2736)	
True negatives (patients without child maltreatment)	1 study 274 patients ^a	cross-sectional (cohort type accuracy study)	very serious ^b	not serious	not serious	serious ^c	none	74552 (67272 to 80602)	68466 (61780 to 74022)	⊕○○○ VERY LOW
False positives (patients incorrectly classified as having child maltreatment)								23448 (17398 to 30728)	21534 (15978 to 28220)	

Explanations

a. Bernstein 1997. Population: Adolescents (12-17 yrs) who were admitted to a private psychiatric hospital in the U.S.. Index test: Childhood trauma questionnaire, a self-reported 70-item screening inventory (e.g., "When I was growing up, someone tried to touch me in a sexual way or tried to make me touch them"). Cutoff scores are specific to maltreatment type, e.g., sexual abuse=9; physical abuse=12; emotional abuse=30; and physical neglect=12. Reference standard: therapist assessment using admission notes, discharge summary, and patient's hospital chart.

b. Downgraded due to very serious risk of bias, primarily due to no pre-specified cutoff, exclusion of some patients from test (low intelligence, poor reading competence, etc), and long time interval b/w index test and reference standard (approx. 15 weeks).

c. Downgraded for imprecision, as less than 300 children contributing to outcomes (which makes the estimate of effect less precise)

Question: Should screening or case-finding be used to diagnose child maltreatment in children exposed to physical, sexual, emotional abuse, or neglect (B'97 - PA1)?

Sensitivity	0.82 (95% CI: 0.71 to 0.89)					
Specificity	0.73 (95% CI: 0.65 to 0.80)					

Prevalences	2%	10%	

Outcome	№ of studies (№ of patients)	Study design	Factors that may decrease quality of evidence					Effect per 100,000 patients tested		Test accuracy QoE
			Risk of bias	Indirectness	Inconsistency	Imprecision	Publication bias	pre-test probability of 2%	pre-test probability of 10%	
True positives (patients with child maltreatment)	1 study 227 patients ^a	cross-sectional (cohort type accuracy study)	very serious ^b	not serious	not serious	serious ^c	none	1632 (1414 to 1784)	8158 (7069 to 8921)	⊕○○○ VERY LOW
False negatives (patients incorrectly classified as not having child maltreatment)								368 (216 to 586)	1842 (1079 to 2931)	
True negatives (patients without child maltreatment)	1 study 227 patients ^a	cross-sectional (cohort type accuracy study)	very serious ^b	not serious	not serious	serious ^c	none	71391 (63606 to 78013)	65563 (58414 to 71645)	⊕○○○ VERY LOW
False positives (patients incorrectly classified as having child maltreatment)								26609 (19987 to 34394)	24437 (18355 to 31586)	

Explanations

- a. Bernstein 1997. Population: Adolescents (12-17 yrs) who were admitted to a private psychiatric hospital. Index test: Childhood trauma questionnaire, a self-reported 70-item screening inventory (e.g., "When I was growing up, someone tried to touch me in a sexual way or tried to make me touch them"). Cutoff scores are specific to maltreatment type, e.g., sexual abuse=9; physical abuse=12; emotional abuse=30; and physical neglect=12. Reference standard: therapist assessment using admission notes, discharge summary, and patient's hospital chart.
- b. Downgraded due to very serious risk of bias, primarily due to no pre-specified cutoff, exclusion of some patients from test (low intelligence, poor reading competence, etc), and long time interval b/w index test and reference standard (approx. 15 weeks).
- c. Downgraded for imprecision, as less than 300 children contributing to outcomes (which makes the estimate of effect less precise)

Question: Should screening or case-finding be used to diagnose child maltreatment in physical, sexual, emotional abuse or neglect (B'97 - EA)?

Sensitivity	0.79 (95% CI: 0.69 to 0.87)
Specificity	0.72 (95% CI: 0.64 to 0.79)

Prevalences	2%	10%	

Outcome	No of studies (No of patients)	Study design	Factors that may decrease quality of evidence					Effect per 100,000 patients tested		Test accuracy QoE
			Risk of bias	Indirectness	Inconsistency	Imprecision	Publication bias	pre-test probability of 2%	pre-test probability of 10%	
True positives (patients with child maltreatment)	1 study 229 patients ^a	cross-sectional (cohort type accuracy study)	very serious ^b	not serious	not serious	serious ^c	none	1590 (1371 to 1749)	7949 (6854 to 8747)	⊕○○○ VERY LOW
False negatives (patients incorrectly classified as not having child maltreatment)								410 (251 to 629)	2051 (1253 to 3146)	
True negatives (patients without child maltreatment)	1 study 229 patients ^a	cross-sectional (cohort type accuracy study)	very serious ^b	not serious	not serious	serious ^c	none	70742 (62924 to 77432)	64967 (57787 to 71111)	⊕○○○ VERY LOW
False positives (patients incorrectly classified as having child maltreatment)								27258 (20568 to 35076)	25033 (18889 to 32213)	

Explanations

a. Bernstein 1997. Population: Adolescents (12-17 yrs) who were admitted to a private psychiatric hospital. Index test: Childhood trauma questionnaire, a self-reported 70-item screening inventory (e.g., "When I was growing up, someone tried to touch me in a sexual way or tried to make me touch them"). Cutoff scores are specific to maltreatment type, e.g., sexual abuse=9; physical abuse=12; emotional abuse=30; and physical neglect=12. Reference standard: therapist assessment using admission notes, discharge summary, and patient's hospital chart.

b. Downgraded due to very serious risk of bias, primarily due to no pre-specified cutoff, exclusion of some patients from test (low intelligence, poor reading competence, etc), and long time interval b/w index test and reference standard (approx. 15 weeks).

c. Downgraded for imprecision, as less than 300 children contributing to outcomes (which makes the estimate of effect less precise)

Question: Should screening or case-finding be used to diagnose child maltreatment in children exposed to physical, sexual, emotional abuse, or neglect (B'97 - PN)?

Sensitivity	0.77 (95% CI: 0.63 to 0.87)					
Specificity	0.61 (95% CI: 0.54 to 0.67)					

Outcome	№ of studies (№ of patients)	Study design	Factors that may decrease quality of evidence					Effect per 100,000 patients tested		Test accuracy QoE
			Risk of bias	Indirectness	Inconsistency	Imprecision	Publication bias	pre-test probability of 2%	pre-test probability of 10%	
True positives (patients with child maltreatment)	1 study 274 patients ^a	cross-sectional (cohort type accuracy study)	very serious ^b	not serious	not serious	serious ^c	none	1547 (1269 to 1745)	7736 (6345 to 8727)	⊕○○○ VERY LOW
False negatives (patients incorrectly classified as not having child maltreatment)								453 (255 to 731)	2264 (1273 to 3655)	
True negatives (patients without child maltreatment)	1 study 274 patients ^a	cross-sectional (cohort type accuracy study)	very serious ^b	not serious	not serious	serious ^c	none	59864 (53206 to 66138)	54977 (48863 to 60739)	⊕○○○ VERY LOW
False positives (patients incorrectly classified as having child maltreatment)								38136 (31862 to 44794)	35023 (29261 to 41137)	

Explanations

- a. Bernstein 1997. Population: Adolescents (12-17 yrs) who were admitted to a private psychiatric hospital. Index test: Childhood trauma questionnaire, a self-reported 70-item screening inventory (e.g., "When I was growing up, someone tried to touch me in a sexual way or tried to make me touch them"). Cutoff scores are specific to maltreatment type, e.g., sexual abuse=9; physical abuse=12; emotional abuse=30; and physical neglect=12. Reference standard: therapist assessment using admission notes, discharge summary, and patient's hospital chart.
- b. Downgraded due to very serious risk of bias, primarily due to no pre-specified cutoff, exclusion of some patients from test (low intelligence, poor reading competence, etc), and long time interval b/w index test and reference standard (approx. 15 weeks).
- c. Downgraded for imprecision, as less than 300 children contributing to outcomes (which makes the estimate of effect less precise)

Sexual abuse

Question: Should screening or case-finding be used to diagnose child maltreatment in children exposed to physical, sexual, emotional abuse, or neglect (C'04)?

Sensitivity	0.56 (95% CI: 0.31 to 0.79)									
Specificity	0.98 (95% CI: 0.90 to 1.00)									
						Prevalences	2%	10%		
Outcome	№ of studies (№ of patients)	Study design	Factors that may decrease quality of evidence					Effect per 100,000 patients tested		Test accuracy QoE
			Risk of bias	Indirectness	Inconsistency	Imprecision	Publication bias	pre-test probability of 2%	pre-test probability of 10%	
True positives (patients with child maltreatment)	1 study 77 patients ^a	cross-sectional (cohort type accuracy study)	very serious ^b	not serious	not serious	serious ^c	none	1125 (611 to 1585)	5625 (3055 to 7925)	⊕○○○ VERY LOW
False negatives (patients incorrectly classified as not having child maltreatment)								875 (415 to 1389)	4375 (2075 to 6945)	
True negatives (patients without child maltreatment)	1 study 77 patients ^a	cross-sectional (cohort type accuracy study)	very serious ^b	not serious	not serious	serious ^c	none	96393 (88219 to 97916)	88525 (81017 to 89923)	⊕○○○ VERY LOW
False positives (patients incorrectly classified as having child maltreatment)								1607 (84 to 9781)	1475 (77 to 8983)	

Explanations

a. Cheung 2004. Population: Girls <17 referred to sexual abuse evaluation team at hospital in Hong Kong, China. Index test: Colposcopic examination of anal and genital findings. Findings classified according to Adam's classification of anogenital findings, which uses a number of characteristics to characterize findings as a) clear trauma (e.g., hymen laceration, acute), b) concern for abuse (e.g., bite/suction); c) non-specific (e.g., labial adhesion); and d) normal (e.g., periurethral bands). Reference standard: Assessment by multidisciplinary team involved in assessing CPS investigation. Team used medical history, behavioural changes, laboratory results, and anogenital findings

b. Downgraded for very serious risk of bias, primarily b/c index test (anogenital findings) was used as part of reference standard and b/c a number of patients (20%) refused coloscopic exam.

c. Downgraded for imprecision, as less than 300 children contributing to outcomes (which makes the estimate of effect less precise)

Question: Should screening or case-finding be used to diagnose child maltreatment in children exposed to physical, sexual, emotional abuse, or neglect (B'02)?

Sensitivity	0.29 (95% CI: 0.22 to 0.37)
Specificity	0.86 (95% CI: 0.80 to 0.90)

Prevalences	2%	10%	

Outcome	No of studies (No of patients)	Study design	Factors that may decrease quality of evidence					Effect per 100,000 patients tested		Test accuracy QoE
			Risk of bias	Indirectness	Inconsistency	Imprecision	Publication bias	pre-test probability of 2%	pre-test probability of 10%	
True positives (patients with child maltreatment)	1 study 386 patients ^a	case-control type accuracy study	very serious ^b	not serious	not serious	not serious	none	573 (435 to 734)	2867 (2173 to 3671)	⊕⊕○○ LOW
False negatives (patients incorrectly classified as not having child maltreatment)								1427 (1266 to 1565)	7133 (6329 to 7827)	
True negatives (patients without child maltreatment)	1 study 386 patients ^a	case-control type accuracy study	very serious ^b	not serious	not serious	not serious	none	84158 (78070 to 88672)	77288 (71697 to 81433)	⊕⊕○○ LOW
False positives (patients incorrectly classified as having child maltreatment)								13842 (9328 to 19930)	12712 (8567 to 18303)	

Explanations

a. Berenson 2002. Population: Girls 3-8 yrs presenting at pediatric clinic with and without sexual abuse. Abused children were recruited at the Child Protective Health (CPH) clinic located in Texas Children's Hospital (Houston, Texas, U.S.); nonabused children (controls) were recruited from the waiting rooms of the pediatric clinics at the University of Texas Medical Branch (UTMB). Index test: A horizontal hymen diameter of ≥ 6.5 mm in knee chest position. Reference standard: Review of medical record, completion of Child Sexual Behavior Inventory by parent, interview with the child in private by nurse, psychologist or social worker.

b. Downgraded for very serious risk of bias primarily due to case-control design and cases/controls did not receive the same reference standard.

Question: Should screening or case-finding be used to diagnose child maltreatment in children exposed to physical, sexual, emotional abuse, or neglect (D'01)?

Sensitivity	0.50 (95% CI: 0.37 to 0.63)									
Specificity	0.50 (95% CI: 0.41 to 0.58)									
					Prevalences	2%	10%			
Outcome	№ of studies (№ of patients)	Study design	Factors that may decrease quality of evidence					Effect per 100,000 patients tested		Test accuracy QoE
			Risk of bias	Indirectness	Inconsistency	Imprecision	Publication bias	pre-test probability of 2%	pre-test probability of 10%	
True positives (patients with child maltreatment)	1 study 209 patients ^a	cross-sectional (cohort type accuracy study)	very serious ^b	not serious	not serious	serious ^c	none	1000 (735 to 1265)	5000 (3673 to 6327)	⊕○○○ VERY LOW
False negatives (patients incorrectly classified as not having child maltreatment)								1000 (735 to 1265)	5000 (3673 to 6327)	
True negatives (patients without child maltreatment)	1 study 209 patients ^a	cross-sectional (cohort type accuracy study)	very serious ^b	not serious	not serious	serious ^c	none	48676 (40650 to 56718)	44702 (37331 to 52088)	⊕○○○ VERY LOW
False positives (patients incorrectly classified as having child maltreatment)								49324 (41282 to 57350)	45298 (37912 to 52669)	

Explanations

- a. Drach 2001. Population: Children b/w 2-12 yrs referred to child abuse program in the U.S. for sexual abuse allegations. Index test: Child sexual behavior inventory, which consists of 38 sexual behavior items. Reference standard: Assessment by multidisciplinary team using forensic medical evaluation, statements made by the child during forensic interviewing, and an assessment of relevant historical information
- b. Downgraded for very serious risk for bias, primarily due to unrepresentative sample
- c. Downgraded for imprecision, as less than 300 children contributing to outcomes (which makes the estimate of effect less precise)

Question: Should screening or case-finding be used to diagnose child maltreatment in children exposed to physical, sexual, emotional abuse or neglect (W97)?

Sensitivity	0.91 (95% CI: 0.69 to 0.98)
Specificity	0.88 (95% CI: 0.76 to 0.95)

Prevalences	2%	10%	

Outcome	No of studies (No of patients)	Study design	Factors that may decrease quality of evidence					Effect per 100,000 patients tested		Test accuracy QoE
			Risk of bias	Indirectness	Inconsistency	Imprecision	Publication bias	pre-test probability of 2%	pre-test probability of 10%	
True positives (patients with child maltreatment)	1 study 74 patients ^a	case-control type accuracy study	very serious ^b	not serious	not serious	serious ^c	none	1818 (1388 to 1968)	9091 (6938 to 9841)	⊕○○○ VERY LOW
False negatives (patients incorrectly classified as not having child maltreatment)								182 (32 to 612)	909 (159 to 3062)	
True negatives (patients without child maltreatment)	1 study 74 patients ^a	case-control type accuracy study	very serious ^b	not serious	not serious	serious ^c	none	86692 (74353 to 93317)	79615 (68284 to 85699)	⊕○○○ VERY LOW
False positives (patients incorrectly classified as having child maltreatment)								11308 (4683 to 23647)	10385 (4301 to 21716)	

Explanations

a. Wells 1997. Population: Boys <16 with confirmed or alleged sexual abuse (recruited from sexual abuse clinic in the U.S.) or no sexual abuse (recruited from a previous study conducted in the U.S.). Index test: Abbreviated Structured Interview for Symptoms Associated with Sexual Abuse, where sexual abuse is said to have occurred when 3 or more of 12 items are indicative (e.g., Sudden emotional/behavioral changes). Reference standard: Confirmed sexual abuse involved perpetrator confession, alleged sexual abuse involved medical examiner evaluation, no sexual abuse were evaluated with "a series of screening techniques".

b. Downgraded for very serious risk of bias, primarily due to case-control design, no pre-specified cut-off for calculating sensitivity and specificity rates, and different reference standard applied to cases/controls.

c. Downgraded for imprecision, as less than 300 children contributing to outcomes (which makes the estimate of effect less precise)

Emotional abuse

Question: Should screening or case-finding be used to diagnose child maltreatment in children exposed to physical, sexual, emotional abuse, or neglect (F'03)?

Sensitivity	0.77 (95% CI: 0.56 to 0.90)				Prevalences 2%10%					
Specificity	0.51 (95% CI: 0.39 to 0.63)									
Outcome	№ of studies (№ of patients)	Study design	Factors that may decrease quality of evidence					Effect per 100,000 patients tested		Test accuracy QoE
			Risk of bias	Indirectness	Inconsistency	Imprecision	Publication bias	pre-test probability of 2%	pre-test probability of 10%	
True positives (patients with child maltreatment)	1 study 98 patients ^a	cross-sectional (cohort type accuracy study)	very serious ^b	not serious	not serious	serious ^c	none	1538 (1118 to 1805)	7692 (5592 to 9025)	⊕○○○ VERY LOW
False negatives (patients incorrectly classified as not having child maltreatment)								462 (195 to 882)	2308 (975 to 4408)	
True negatives (patients without child maltreatment)	1 study 98 patients ^a	cross-sectional (cohort type accuracy study)	very serious ^b	not serious	not serious	serious ^c	none	50361 (38619 to 61957)	46250 (35467 to 56899)	⊕○○○ VERY LOW
False positives (patients incorrectly classified as having child maltreatment)								47639 (36043 to 59381)	43750 (33101 to 54533)	

Explanations

- a. Fernandopulle 2003. Population: Children 13-15 in school. Index test: 85-item scale for identifying emotional abuse in Sri Lanka. Each item on score was rated on a scale of 1-4 (one meaning 'always', 4 meaning 'never'). Example of a scale item is: 9) How do your parents assess you? 9.1) A lucky child; 9.2) A troublesome child; 9.3) An unwanted child; 9.4) A useless child; 9.5) A sickly child; 9.6) Better if you belonged to the opposite sex; 9.7) Better if was like a sibling; 9.8) Better if was like a child in the neighbourhood or classmate. Reference standard: Psychiatrist assessment during child interview
- b. Downgraded due to serious risk of bias, as a threshold was used to optimize data that was not prespecified, and uninterpretable results not stated.
- c. Downgraded for imprecision, as less than 300 children contributing to outcomes (which makes the estimate of effect less precise)

Medical child maltreatment (aka Munchausen syndrome by proxy)

Question: Should screening or case finding be used to diagnose child maltreatment in children exposed to physical, sexual, emotional abuse or neglect?

Sensitivity	0.95 (95% CI: 0.72 to 1.00)									
Specificity	0.96 (95% CI: 0.93 to 0.97)									
			Prevalences	2%	10%					
Outcome	№ of studies (№ of patients)	Study design	Factors that may decrease quality of evidence					Effect per 100,000 patients tested		Test accuracy QoE
			Risk of bias	Indirectness	Inconsistency	Imprecision	Publication bias	pre-test probability of 2%	pre-test probability of 10%	
True positives (patients with child maltreatment)	1 study 408 patients ^a	case-control type accuracy study	very serious ^b	not serious	not serious	not serious	none	1895 (1438 to 1994)	9474 (7189 to 9972)	⊕⊕○○ LOW
False negatives (patients incorrectly classified as not having child maltreatment)								105 (6 to 562)	526 (28 to 2811)	
True negatives (patients without child maltreatment)	1 study 408 patients ^a	case-control type accuracy study	very serious ^b	not serious	not serious	not serious	none	93717 (91100 to 95406)	86067 (83663 to 87618)	⊕⊕○○ LOW
False positives (patients incorrectly classified as having child maltreatment)								4283 (2594 to 6900)	3933 (2382 to 6337)	

Explanations

a. Greiner 2013. Children <18 with confirmed medical child abuse and children <18 who were hospitalized with the discharge diagnosis of apnea, diarrhea/ vomiting, or seizures/epilepsy in the U.S.. Index test: 15-item medical child abuse screening instrument using a cutoff score ≥4 (e.g., Caregiver has features of Munchausen syndrome?). Reference standard: All patients included in the confirmed medical CM cohort were previously reported to CPS and medical CM had been substantiated; all controls had no concerns for medical CM in their records and none had been reported to CPS

b. Downgraded due to serious risk of bias due to dual-gate (i.e., case-control) design, a threshold was used to optimize data that was not prespecified, and cases/controls received different reference standards.

Physical abuse & neglect

Question: Should screening or case-finding be used to diagnose child maltreatment in children exposed to physical, sexual, emotional abuse, or neglect (P'10)?

Sensitivity	0.97 (95% CI: 0.82 to 1.00)					<table><tr><td>Prevalences</td><td>2%</td><td>10%</td><td></td></tr></table>				Prevalences	2%	10%	
Prevalences	2%	10%											
Specificity	0.84 (95% CI: 0.68 to 0.93)												

Outcome	№ of studies (№ of patients)	Study design	Factors that may decrease quality of evidence					Effect per 100,000 patients tested		Test accuracy QoE
			Risk of bias	Indirectness	Inconsistency	Imprecision	Publication bias	pre-test probability of 2%	pre-test probability of 10%	
True positives (patients with child maltreatment)	1 study 71 patients ^a	case-control type accuracy study	very serious ^b	not serious	not serious	serious ^c	none	1939 (1650 to 1997)	9697 (8249 to 9984)	⊕○○○ VERY LOW
False negatives (patients incorrectly classified as not having child maltreatment)								61 (3 to 350)	303 (16 to 1751)	
True negatives (patients without child maltreatment)	1 study 71 patients ^a	case-control type accuracy study	very serious ^b	not serious	not serious	serious ^c	none	82526 (66711 to 91545)	75789 (61265 to 84072)	⊕○○○ VERY LOW
False positives (patients incorrectly classified as having child maltreatment)								15474 (6455 to 31289)	14211 (5928 to 28735)	

Explanations

a. Pierce 2010. Population: Children <4 with abusive or accidental trauma admitted to a children's hospital in the U.S.. Index test: Bruising classification and regression tree that involves 3 branching question (e.g., Is there bruising in the torso, ear, and neck region of a child ≤4 years of age?). Reference standard: Hospital medical team evaluation, CPS evaluation, or stated cause of injury incompatible

b. Downgraded due to serious risk of bias due to dual-gate (i.e., case-control) design, a threshold was used to optimize data that was not prespecified, and cases/controls received different reference standards.

c. Downgraded for imprecision, as less than 300 children contributing to outcomes (which makes the estimate of effect less precise)

Question: Should screening or case-finding be used to diagnose child maltreatment in children exposed to physical, sexual, emotional abuse or neglect (Va'09)?

Sensitivity	0.26 (95% CI: 0.18 to 0.36)
Specificity	0.75 (95% CI: 0.62 to 0.85)

Prevalences	2%	10%	

Outcome	No of studies (No of patients)	Study design	Factors that may decrease certainty of evidence					Effect per 100,000 patients tested		Test accuracy CoE
			Risk of bias	Indirectness	Inconsistency	Imprecision	Publication bias	pre-test probability of 2%	pre-test probability of 10%	
True positives (patients with child maltreatment)	1 study 150 patients ^a	cross-sectional (cohort type accuracy study)	very serious ^b	not serious	not serious	serious ^c	none	516 (351 to 722)	2581 (1754 to 3611)	⊕○○○ VERY LOW
False negatives (patients incorrectly classified as not having child maltreatment)								1484 (1278 to 1649)	7419 (6389 to 8246)	
True negatives (patients without child maltreatment)	1 study 150 patients ^a	cross-sectional (cohort type accuracy study)	very serious ^b	not serious	not serious	serious ^c	none	73930 (60719 to 83756)	67895 (55762 to 76919)	⊕○○○ VERY LOW
False positives (patients incorrectly classified as having child maltreatment)								24070 (14244 to 37281)	22105 (13081 to 34238)	

Explanations

a. Valvano 2009. Population. Children <18 with fractures (excluding skull fracture) referred to child abuse team in U.S. Index test: Bruising associated with a fracture. Reference standard: Child abuse experts who reviewed chart summaries of patients

b. Downgraded for very serious risk of bias, primarily due to the exclusion of potentially relevant patients (e.g., children with skull fractures), >10% indeterminate cases, and blinding b/w index test and reference standard not stated.

c. Downgraded for imprecision, as less than 300 children contributing to outcomes (which makes the estimate of effect less precise)

Question: Should screening or case-finding be used to diagnose child maltreatment in children exposed to physical, sexual, emotional abuse or neglect (C'05)?

Sensitivity	0.87 (95% CI: 0.83 to 0.90)									
Specificity	0.80 (95% CI: 0.80 to 0.81)									
					Prevalences	2%	10%			
Outcome	№ of studies (№ of patients)	Study design	Factors that may decrease quality of evidence					Effect per 100,000 patients tested		Test accuracy QoE
			Risk of bias	Indirectness	Inconsistency	Imprecision	Publication bias	pre-test probability of 2%	pre-test probability of 10%	
True positives (patients with child maltreatment)	1 study 58558 patients ^a	cross-sectional (cohort type accuracy study)	very serious ^b	not serious	not serious	not serious	none	1732 (1660 to 1791)	8658 (8298 to 8953)	⊕⊕○○ LOW
False negatives (patients incorrectly classified as not having child maltreatment)								268 (209 to 340)	1342 (1047 to 1702)	
True negatives (patients without child maltreatment)	1 study 58558 patients ^a	cross-sectional (cohort type accuracy study)	very serious ^b	not serious	not serious	not serious	none	78890 (78572 to 79203)	72450 (72158 to 72737)	⊕⊕○○ LOW
False positives (patients incorrectly classified as having child maltreatment)								19110 (18797 to 19428)	17550 (17263 to 17842)	

Explanations

- a. Chang 2005. Population: Children <14 with at least one ICD-9 diagnosis of physical injury in hospital discharge databases of 17 U.S. states. Index test: Screening index for physical child abuse (SIPCA), a 15-point scale where a score >3 is indicative of physical abuse (e.g., fracture of base or vault of skull (1 point)). Reference standard. E codes and certain ICD-9-CM codes in the 995.5x range
- b. Downgraded for very serious risk of bias due to non-consecutive sample of children, exclusions of potentially relevant children, and optimizing data to a threshold that was not pre-specified.

Abusive head trauma

Question: Should screening or case finding be used to diagnose child maltreatment in children exposed to physical, emotional, sexual abuse or neglect (K17)?

Sensitivity	0.44 (95% CI: 0.35 to 0.54)									
Specificity	0.99 (95% CI: 0.97 to 1.00)									
			Prevalences	2%	10%					
Outcome	№ of studies (№ of patients)	Study design	Factors that may decrease quality of evidence					Effect per 100,000 patients tested		Test accuracy QoE
			Risk of bias	Indirectness	Inconsistency	Imprecision	Publication bias	pre-test probability of 2%	pre-test probability of 10%	
True positives (patients with child maltreatment)	1 study 394 patients ^a	cross-sectional (cohort type accuracy study)	very serious ^b	not serious	not serious	not serious	none	883 (697 to 1077)	4414 (3483 to 5387)	⊕⊕○○ LOW
False negatives (patients incorrectly classified as not having child maltreatment)								1117 (923 to 1303)	5586 (4613 to 6517)	
True negatives (patients without child maltreatment)	1 study 394 patients	cross-sectional (cohort type accuracy study)	very serious ^b	not serious	not serious	not serious	none	96911 (94586 to 97718)	89000 (86865 to 89741)	⊕⊕○○ LOW
False positives (patients incorrectly classified as having child maltreatment)								1089 (282 to 3414)	1000 (259 to 3135)	

Explanations

- a. Kim 2017. Population: Children <12 months with diagnosis of head injury defined as a skull fracture or intracranial injury using information from a trauma registry (2008-2015) of a U.S. hospital. Index test: Skeletal surveys. Reference standard: Trauma registry contains families evaluated by a Child Abuse Team, comprised of physicians, social workers, pastoral care and law enforcement.
- b. Downgraded due to very serious risk of bias, primarily due to incorporation bias (reference standard made use of skeletal surveys, the index test), verification bias (only children with suspicious findings were evaluated with the reference standard), and not all patients included in analysis (30% of children had no skeletal survey data).

Question: Should screening or case finding be used to diagnose child maltreatment in children exposed to physical, emotional, sexual abuse or neglect (P'16)?

Sensitivity	0.13 (95% CI: 0.08 to 0.20)					<table><tr><td>Prevalences</td><td>2%</td><td>10%</td><td></td></tr></table>				Prevalences	2%	10%	
Prevalences	2%	10%											
Specificity	1.00 (95% CI: 0.85 to 1.00)												

Outcome	№ of studies (№ of patients)	Study design	Factors that may decrease quality of evidence					Effect per 100,000 patients tested		Test accuracy QoE
			Risk of bias	Indirectness	Inconsistency	Imprecision	Publication bias	pre-test probability of 2%	pre-test probability of 10%	
True positives (patients with child maltreatment)	1 study 165 patients ^a	case-control type accuracy study	very serious ^b	not serious	not serious	serious ^c	none	263 (164 to 405)	1314 (818 to 2023)	⊕○○○ VERY LOW
False negatives (patients incorrectly classified as not having child maltreatment)								1737 (1595 to 1836)	8686 (7977 to 9182)	
True negatives (patients without child maltreatment)	1 study 165 patients ^a	case-control type accuracy study	very serious ^{b,c}	not serious	not serious	serious ^c	none	98000 (83282 to 98000)	90000 (76484 to 90000)	⊕○○○ VERY LOW
False positives (patients incorrectly classified as having child maltreatment)								0 (0 to 14718)	0 (0 to 13516)	

Explanations

- a. Palifika 2016. Population: Children <3 years of age diagnosed with AHT and children and accidentally injured (AI) children with moderate-to severe traumatic brain injury. Information retrieved from retrospective review of medical records (2005-2013) at a pediatric hospital in the U.S. Index test: Parenchymal brain laceration. Reference standard: Perpetrator confession and/or evaluation by the institutional child abuse medical evaluation team were determined to have inflicted trauma
- b. Downgraded for very serious concerns for risk of bias, primarily due to patient selection bias (no consecutive sample, case-control style study), non-blinding of the reference standard to index tests (all imaging), and cases and controls received different reference standards.
- c. Downgraded for imprecision, as less than 300 children contributing to outcomes (which makes the estimate of effect less precise)

Question: Should screening or case finding be used to diagnose child maltreatment in children exposed to physical, emotional, sexual abuse or neglect (C15)?

Sensitivity	0.66 (95% CI: 0.53 to 0.77)					
Specificity	0.82 (95% CI: 0.74 to 0.88)					

Prevalences	2%	10%	

Outcome	No of studies (No of patients)	Study design	Factors that may decrease quality of evidence					Effect per 100,000 patients tested		Test accuracy QoE
			Risk of bias	Indirectness	Inconsistency	Imprecision	Publication bias	pre-test probability of 2%	pre-test probability of 10%	
True positives (patients with child maltreatment)	1 study 198 patients ^a	cross-sectional (cohort type accuracy study)	very serious ^b	not serious	not serious	serious ^c	none	1323 (1065 to 1543)	6615 (5326 to 7713)	⊕○○○ VERY LOW
False negatives (patients incorrectly classified as not having child maltreatment)								677 (457 to 935)	3385 (2287 to 4674)	
True negatives (patients without child maltreatment)	1 study 198 patients ^a	cross-sectional (cohort type accuracy study)	very serious ^b	not serious	not serious	serious ^c	none	80316 (72654 to 86120)	73759 (66723 to 79090)	⊕○○○ VERY LOW
False positives (patients incorrectly classified as having child maltreatment)								17684 (11880 to 25346)	16241 (10910 to 23277)	

Explanations

a. Cowley 2015. Population: Children <24 months admitted to hospital with an intracranial injury. Data set 1 (Cardiff, UK) consists of retrospective data collection from the case notes of 60 children aged <36 months needing hospital admission with an ICI (confirmed on neuroimaging) to the University Hospital of Wales, United Kingdom, between April 2005 and February 2012. Data set 2 (Lille, France) provided prospective data on 143 anonymized cases from their largescale prospective study of abusive and accidental head injuries in infants conducted at Lille University Hospital, France. Index test: Predicting Abusive Head Trauma (PredAHT) tool, which is a four-variable clinical prediction rule that evaluates: a) Any clinically significant respiratory compromise at the scene of injury, during transport, in the emergency department, or before admission?; b) Any bruising involving the child's ears, neck, or torso?; c) Any subdural hemorrhages or fluid collections that are bilateral or involve the interhemispheric space?; d) Any skull fractures other than an isolate, unilateral, nondiastatic, linear, parietal skull fracture? Reference standard: Thorough multidisciplinary assessment or court proceedings, social and historical factors beyond the presenting injury, or a perpetrator admission or independently witnessed abusive incident.

b. Downgraded due to very serious concerns for risk of bias, primarily due to the fact that a threshold for optimizing the data was not prespecified, unclear statement of how reference standard was applied to each child, and children did not receive the same reference standard.

c. Downgraded for serious imprecision, as less than 300 children contributing to outcomes (which makes the estimate of effect less precise)

Question: Should screening or case finding be used to diagnose child maltreatment in children exposed to physical, emotional, sexual abuse or neglect (A'14)?

Sensitivity	0.48 (95% CI: 0.43 to 0.53)				Prevalences 2%10%					
Specificity	0.81 (95% CI: 0.77 to 0.84)									
Outcome	№ of studies (№ of patients)	Study design	Factors that may decrease quality of evidence					Effect per 100,000 patients tested		Test accuracy QoE
			Risk of bias	Indirectness	Inconsistency	Imprecision	Publication bias	pre-test probability of 2%	pre-test probability of 10%	
True positives (patients with child maltreatment)	1 study 921 patients ^a	cross-sectional (cohort type accuracy study)	very serious ^b	not serious	not serious	not serious	none	957 (853 to 1061)	4784 (4266 to 5306)	⊕⊕○○ LOW
False negatives (patients incorrectly classified as not having child maltreatment)								1043 (939 to 1147)	5216 (4694 to 5734)	
True negatives (patients without child maltreatment)	1 study 921 patients ^a	cross-sectional (cohort type accuracy study)	very serious ^b	not serious	not serious	not serious	none	79147 (75623 to 82242)	72686 (69450 to 75528)	⊕⊕○○ LOW
False positives (patients incorrectly classified as having child maltreatment)								18853 (15758 to 22377)	17314 (14472 to 20550)	

Explanations

a. Acker 2014. Population: Children 5 and under who were admitted with diagnosis of traumatic brain injury. Data was obtained from a retrospective review of the trauma databases at two level one pediatric trauma centers in the U.S. Index test: Hematocrit ≤30% on presentation. Reference standard: Diagnosis of AHT was made by the Child Advocacy and Protection team, led by a child advocacy expert and includes social workers, nurses, psychologists, psychiatrists and attorneys.

b. Downgraded due to very serious concerns for risk of bias, primarily due to the fact that a threshold to optimize data was not prespecified, only suspected children received the reference standard (verification bias), and not all patients were included in analysis (19% of children missing data).

Question: Should screening or case finding be used to diagnose child maltreatment in children exposed to physical, emotional, sexual abuse or neglect (H'14)?

Sensitivity	0.96 (95% CI: 0.90 to 0.99)				Prevalences 2%10%					
Specificity	0.43 (95% CI: 0.35 to 0.50)									
Outcome	№ of studies (№ of patients)	Study design	Factors that may decrease quality of evidence					Effect per 100,000 patients tested		Test accuracy QoE
			Risk of bias	Indirectness	Inconsistency	Imprecision	Publication bias	pre-test probability of 2%	pre-test probability of 10%	
True positives (patients with child maltreatment)	1 study 291 patients ^a	cross-sectional (cohort type accuracy study)	very serious ^b	not serious	not serious	serious ^c	none	1919 (1807 to 1970)	9597 (9037 to 9851)	⊕○○○ VERY LOW
False negatives (patients incorrectly classified as not having child maltreatment)								81 (30 to 193)	403 (149 to 963)	
True negatives (patients without child maltreatment)	1 study 291 patients ^a	cross-sectional (cohort type accuracy study)	very serious ^b	not serious	not serious	serious ^c	none	41665 (34283 to 49389)	38264 (31484 to 45358)	⊕○○○ VERY LOW
False positives (patients incorrectly classified as having child maltreatment)								56335 (48611 to 63717)	51736 (44642 to 58516)	

Explanations

- a. Hymel 2014. Population: Children <3 admitted to one of 10 PICUs in the U.S. for the management of symptomatic, acute, closed, traumatic, cranial, or intracranial injuries confirmed by computed tomography (CT) or magnetic resonance imaging (MRI). Reference standard: Primary caregiver admission of abusive acts, abusive acts witnessed by an independent observer, primary caregiver denial of head trauma, primary caregiver gives account of injury that is inconsistent or developmentally inconsistent, above or equal to 2 categories of extracranial injuries moderately or high suspicious for abuse
- b. Downgraded due to very serious concerns for risk of bias, primarily due to part of the index test being incorporated into the reference standard and unclear statement of blinding between reference standard and index test adjudicators.
- c. Downgraded for serious imprecision, as less than 300 children contributing to outcomes (which makes the estimate of effect less precise)

Question: Should screening or case finding be used to diagnose child maltreatment in children exposed to physical, emotional, sexual abuse or neglect (H'13)?

Sensitivity	0.96 (95% CI: 0.89 to 0.99)
Specificity	0.36 (95% CI: 0.27 to 0.46)

Prevalences	2%	10%	

Outcome	No of studies (No of patients)	Study design	Factors that may decrease certainty of evidence					Effect per 100,000 patients tested		Test accuracy CoE
			Risk of bias	Indirectness	Inconsistency	Imprecision	Publication bias	pre-test probability of 2%	pre-test probability of 10%	
True positives (patients with child maltreatment)	1 study 209 patients ^a	cross-sectional (cohort type accuracy study)	very serious ^b	not serious	not serious	serious ^c	none	1916 (1779 to 1973)	9579 (8896 to 9864)	⊕○○○ VERY LOW
False negatives (patients incorrectly classified as not having child maltreatment)								84 (27 to 221)	421 (136 to 1104)	
True negatives (patients without child maltreatment)	1 study 209 patients ^a	cross-sectional (cohort type accuracy study)	very serious ^b	not serious	not serious	serious ^c	none	35246 (26797 to 44634)	32368 (24610 to 40991)	⊕○○○ VERY LOW
False positives (patients incorrectly classified as having child maltreatment)								62754 (53366 to 71203)	57632 (49009 to 65390)	

Explanations

a. Hymel 2013. Children <3 hospitalized acutely in one of 14 PICUs in the U.S. for treatment of symptomatic, acute, closed (nonpenetrating), traumatic, cranial or intracranial injuries confirmed by computed tomography or magnetic resonance imaging. Index test: Five-variable abusive head trauma clinical prediction rule. Prediction rule entails the following questions: 1) Acute respiratory compromise prior to admission?; 2) Seizure(s) or acute encephalopathy prior to admission?; 3) Bruising of the ear(s), neck, or torso?; 4) Interhemispheric or bilateral subdural hemorrhage(s)?; 5) Any skull fracture(s) other than an isolated unilateral, nondiastatic, linear, parietal skull fracture? Reference standard: Primary caregiver admission of abusive acts, abusive acts witnessed by an independent observer, primary caregiver denial of head trauma, primary caregiver gives account of injury that is inconsistent or developmentally inconsistent, above or equal to 2 categories of extracranial injuries moderately or high suspi

b. Downgraded for very serious risk of bias, as index test results were interpreted with knowledge of reference standard and unclear blinding of reference standard adjudicator.

c. Downgraded for very serious imprecision, as less than 300 children contributing to outcomes (which makes the estimate of effect less precise)

Question: Should screening or case finding be used to diagnose child maltreatment in children exposed to physical, emotional, sexual abuse or neglect (V'09 - BI)?

Sensitivity	0.27 (95% CI: 0.15 to 0.42)		Prevalences 2%10%							
Specificity	0.97 (95% CI: 0.85 to 1.00)									
Outcome	№ of studies (№ of patients)	Study design	Factors that may decrease quality of evidence					Effect per 100,000 patients tested		Test accuracy QoE
			Risk of bias	Indirectness	Inconsistency	Imprecision	Publication bias	pre-test probability of 2%	pre-test probability of 10%	
True positives (patients with child maltreatment)	1 study 84 patients ^a	cross-sectional (cohort type accuracy study)	very serious ^b	not serious	not serious	very serious ^c	none	533 (302 to 844)	2667 (1510 to 4221)	⊕○○○ VERY LOW
False negatives (patients incorrectly classified as not having child maltreatment)								1467 (1156 to 1698)	7333 (5779 to 8490)	
True negatives (patients without child maltreatment)	1 study 84 patients ^a	cross-sectional (cohort type accuracy study)	very serious ^b	not serious	not serious	very serious ^c	none	95487 (83226 to 97869)	87692 (76432 to 89879)	⊕○○○ VERY LOW
False positives (patients incorrectly classified as having child maltreatment)								2513 (131 to 14774)	2308 (121 to 13568)	

Explanations

- a. Vinchon 2009. Population: Children <2 years referred to the emergency room, the pediatric intensive care unit, or neurosurgical department in France. Index test: Symptoms of brain ischemia. Reference standard: Expert assessment by multidisciplinary team (neurosurgeon, pediatrician, forensic doctor, psychologist, and social worker)
- b. Downgraded for very serious risk of bias, primarily due to non-consecutive enrollment (e.g., only corroborated cases of maltreatment included for cases), cases and controls did not receive the same reference standard, and unclear blinding between index test and reference standard adjudicators.
- c. Downgraded for very serious imprecision, as less than 300 children contributing to outcomes (which makes the estimate of effect less precise)

Question: Should screening or case finding be used to diagnose child maltreatment in children exposed to physical, emotional, sexual abuse or neglect (V'09 - SH)?

Sensitivity	0.82 (95% CI: 0.67 to 0.91)					<table><tr><td>Prevalences</td><td>2%</td><td>10%</td><td></td></tr></table>				Prevalences	2%	10%	
Prevalences	2%	10%											
Specificity	0.56 (95% CI: 0.40 to 0.72)												

Outcome	№ of studies (№ of patients)	Study design	Factors that may decrease certainty of evidence					Effect per 100,000 patients tested		Test accuracy CoE
			Risk of bias	Indirectness	Inconsistency	Imprecision	Publication bias	pre-test probability of 2%	pre-test probability of 10%	
True positives (patients with child maltreatment)	1 study 84 patients ^a	cross-sectional (cohort type accuracy study)	very serious ^b	not serious	not serious	very serious ^c	none	1644 (1348 to 1830)	8222 (6742 to 9149)	⊕○○○ VERY LOW
False negatives (patients incorrectly classified as not having child maltreatment)								356 (170 to 652)	1778 (851 to 3258)	
True negatives (patients without child maltreatment)	1 study 84 patients	cross-sectional (cohort type accuracy study) ^a	very serious ^b	not serious	not serious	very serious ^c	none	55282 (38973 to 70376)	50769 (35791 to 64631)	⊕○○○ VERY LOW
False positives (patients incorrectly classified as having child maltreatment)								42718 (27624 to 59027)	39231 (25369 to 54209)	

Explanations

- a. Vinchon 2009. Population: Children <2 years referred to the emergency room, the pediatric intensive care unit, or neurosurgical department in France. Index test: Subdural hematoma. Reference standard: Expert assessment by multidisciplinary team (neurosurgeon, pediatrician, forensic doctor, psychologist, and social worker)
- b. Downgraded for very serious risk of bias, primarily due to non-consecutive enrollment (e.g., only corroborated cases of maltreatment included for cases), cases and controls did not receive the same reference standard, and unclear blinding between index test and reference standard adjudicators.
- c. Downgraded for very serious imprecision, as less than 300 children contributing to outcomes (which makes the estimate of effect less precise)

Question: Should screening or case finding be used to diagnose child maltreatment in children exposed to physical, emotional, sexual abuse or neglect (V'09 - RH)?

Sensitivity	0.56 (95% CI: 0.40 to 0.70)				<table><tr><td>Prevalences</td><td>2%</td><td>10%</td><td></td></tr></table>				Prevalences	2%	10%	
Prevalences	2%	10%										
Specificity	0.97 (95% CI: 0.85 to 1.00)											

Outcome	№ of studies (№ of patients)	Study design	Factors that may decrease certainty of evidence					Effect per 100,000 patients tested		Test accuracy CoE
			Risk of bias	Indirectness	Inconsistency	Imprecision	Publication bias	pre-test probability of 2%	pre-test probability of 10%	
True positives (patients with child maltreatment)	1 study 84 patients ^a	cross-sectional (cohort type accuracy study)	very serious ^b	not serious	not serious	very serious ^c	none	1111 (802 to 1401)	5556 (4012 to 7005)	⊕○○○ VERY LOW
False negatives (patients incorrectly classified as not having child maltreatment)								889 (599 to 1198)	4444 (2995 to 5988)	
True negatives (patients without child maltreatment)	1 study 84 patients ^a	cross-sectional (cohort type accuracy study)	very serious ^b	not serious	not serious	very serious ^c	none	95487 (83226 to 97869)	87692 (76432 to 89879)	⊕○○○ VERY LOW
False positives (patients incorrectly classified as having child maltreatment)								2513 (131 to 14774)	2308 (121 to 13568)	

Explanations

- a. Vinchon 2009. Population: Children <2 years referred to the emergency room, the pediatric intensive care unit, or neurosurgical department in France. Index test: Severe retinal hemorrhage. Reference standard: Expert assessment by multidisciplinary team (neurosurgeon, pediatrician, forensic doctor, psychologist, and social worker)
- b. Downgraded for very serious risk of bias, primarily due to non-consecutive enrollment (e.g., only corroborated cases of maltreatment included for cases), cases and controls did not receive the same reference standard, and unclear blinding between index test and reference standard adjudicators.
- c. Downgraded for very serious imprecision, as less than 300 children contributing to outcomes (which makes the estimate of effect less precise)

Question: Should screening or case finding be used to diagnose child maltreatment in children exposed to physical, emotional, sexual abuse or neglect (V09 - SS)?

Sensitivity	0.98 (95% CI: 0.87 to 1.00)					<table><tr><td>Prevalences</td><td>2%</td><td>10%</td><td></td></tr></table>				Prevalences	2%	10%	
Prevalences	2%	10%											
Specificity	0.77 (95% CI: 0.60 to 0.88)												

Outcome	№ of studies (№ of patients)	Study design	Factors that may decrease certainty of evidence					Effect per 100,000 patients tested		Test accuracy CoE
			Risk of bias	Indirectness	Inconsistency	Imprecision	Publication bias	pre-test probability of 2%	pre-test probability of 10%	
True positives (patients with child maltreatment)	1 study 84 patients ^a	cross-sectional (cohort type accuracy study)	very serious ^b	not serious	not serious	very serious ^c	none	1956 (1735 to 1998)	9778 (8677 to 9988)	⊕○○○ VERY LOW
False negatives (patients incorrectly classified as not having child maltreatment)								44 (2 to 265)	222 (12 to 1323)	
True negatives (patients without child maltreatment)	1 study 84 patients ^a	cross-sectional (cohort type accuracy study)	very serious ^b	not serious	not serious	very serious ^c	none	75385 (59079 to 86529)	69231 (54256 to 79465)	⊕○○○ VERY LOW
False positives (patients incorrectly classified as having child maltreatment)								22615 (11471 to 38921)	20769 (10535 to 35744)	

Explanations

- a. Vinchon 2009. Population: Children <2 years referred to the emergency room, the pediatric intensive care unit, or neurosurgical department in France. Index test: Absence of scalp swelling. Reference standard: Expert assessment by multidisciplinary team (neurosurgeon, pediatrician, forensic doctor, psychologist, and social worker)
- b. Downgraded for very serious risk of bias, primarily due to non-consecutive enrollment (e.g., only corroborated cases of maltreatment included for cases), cases and controls did not receive the same reference standard, and unclear blinding between index test and reference standard adjudicators.
- c. Downgraded for very serious imprecision, as less than 300 children contributing to outcomes (which makes the estimate of effect less precise)

Question: Should screening or case finding be used to diagnose child maltreatment in children exposed to physical, emotional, sexual abuse or neglect (V'05 -1,2,3)?

Sensitivity	0.75 (95% CI: 0.61 to 0.85)					<table><tr><td>Prevalences</td><td>2%</td><td>10%</td><td></td></tr></table>				Prevalences	2%	10%	
Prevalences	2%	10%											
Specificity	0.93 (95% CI: 0.84 to 0.97)												
Outcome	№ of studies (№ of patients)	Study design	Factors that may decrease certainty of evidence					Effect per 100,000 patients tested		Test accuracy CoE			
			Risk of bias	Indirectness	Inconsistency	Imprecision	Publication bias	pre-test probability of 2%	pre-test probability of 10%				
True positives (patients with child maltreatment)	1 study 129 patients ^a	cross-sectional (cohort type accuracy study)	very serious ^b	not serious	not serious	serious ^c	none	1500 (1227 to 1704)	7500 (6135 to 8519)	⊕○○○ VERY LOW			
False negatives (patients incorrectly classified as not having child maltreatment)								500 (296 to 773)	2500 (1481 to 3865)				
True negatives (patients without child maltreatment)	1 study 129 patients ^a	cross-sectional (cohort type accuracy study)	very serious ^b	not serious	not serious	serious ^c	none	91288 (82390 to 95502)	83836 (75664 to 87706)	⊕○○○ VERY LOW			
False positives (patients incorrectly classified as having child maltreatment)								6712 (2498 to 15610)	6164 (2294 to 14336)				

Explanations

- a. Vinchon 2005. Population: Children <2 diagnosed with craniocerebral traumatic injuries diagnosed based on CT scan in France. Index test: Retinal hemorrhage grade 1,2 or 3. Reference standard: Assessment by multidisciplinary team multidisciplinary team (surgeons, ophthalmologists, pediatricians, forensic pathologists, and social workers)
- b. Downgraded for very serious concerns for risk of bias, primarily due to cases and controls receiving different reference standards and unclear blinding between reference standard and index test.
- c. Downgraded for serious imprecision, as less than 300 children contributing to outcomes (which makes the estimate of effect less precise)

Question: Should screening or case finding be used to diagnose child maltreatment in children exposed to physical, emotional, sexual abuse or neglect (V'05)?

Sensitivity	0.66 (95% CI: 0.52 to 0.78)				<table><tr><td>Prevalences</td><td>2%</td><td>10%</td><td></td></tr></table>				Prevalences	2%	10%	
Prevalences	2%	10%										
Specificity	1.00 (95% CI: 0.94 to 1.00)											
Outcome	№ of studies (№ of patients)	Study design	Factors that may decrease quality of evidence					Effect per 100,000 patients tested		Test accuracy QoE		
			Risk of bias	Indirectness	Inconsistency	Imprecision	Publication bias	pre-test probability of 2%	pre-test probability of 10%			
True positives (patients with child maltreatment)	1 study 129 patients ^a	cross-sectional (cohort type accuracy study)	very serious ^b	not serious	not serious	serious ^c	none	1321 (1042 to 1557)	6607 (5209 to 7784)	⊕○○○ VERY LOW		
False negatives (patients incorrectly classified as not having child maltreatment)								679 (443 to 958)	3393 (2216 to 4791)			
True negatives (patients without child maltreatment)	1 study 129 patients ^a	cross-sectional (cohort type accuracy study)	very serious ^b	not serious	not serious	serious ^c	none	98000 (91896 to 98000)	90000 (84394 to 90000)	⊕○○○ VERY LOW		
False positives (patients incorrectly classified as having child maltreatment)								0 (0 to 6104)	0 (0 to 5606)			

Explanations

- a. Vinchon 2005. Population: Children <2 diagnosed with craniocerebral traumatic injuries diagnosed based on CT scan in France. Index test: Retinal hemorrhage grade 2,3. Reference standard: Assessment by multidisciplinary team multidisciplinary team (surgeons, ophthalmologists, pediatricians, forensic pathologists, and social workers)
- b. Downgraded for very serious concerns for risk of bias, primarily due to cases and controls receiving different reference standards and unclear blinding between reference standard and index test.
- c. Downgraded for serious imprecision, as less than 300 children contributing to outcomes (which makes the estimate of effect less precise)

Question: Should screening or case finding be used to diagnose child maltreatment in children exposed to physical, emotional, sexual abuse or neglect (H'03)?

Sensitivity	0.69 (95% CI: 0.54 to 0.81)					<table><tr><td>Prevalences</td><td>2%</td><td>10%</td><td></td></tr></table>				Prevalences	2%	10%	
Prevalences	2%	10%											
Specificity	0.97 (95% CI: 0.92 to 0.99)												

Outcome	№ of studies (№ of patients)	Study design	Factors that may decrease certainty of evidence					Effect per 100,000 patients tested		Test accuracy CoE
			Risk of bias	Indirectness	Inconsistency	Imprecision	Publication bias	pre-test probability of 2%	pre-test probability of 10%	
True positives (patients with child maltreatment)	1 study 163 patients ^a	cross-sectional (cohort type accuracy study)	very serious ^b	not serious	not serious	serious ^c	none	1388 (1088 to 1626)	6939 (5442 to 8132)	⊕○○○ VERY LOW
False negatives (patients incorrectly classified as not having child maltreatment)								612 (374 to 912)	3061 (1868 to 4558)	
True negatives (patients without child maltreatment)	1 study 163 patients ^a	cross-sectional (cohort type accuracy study)	very serious ^b	not serious	not serious	not serious ^c	none	95421 (90091 to 97332)	87632 (82737 to 89386)	⊕⊕○○ LOW
False positives (patients incorrectly classified as having child maltreatment)								2579 (668 to 7909)	2368 (614 to 7263)	

Explanations

- a. Hettler 2003. Population: Children <3 admitted to inpatient services with traumatic intracranial hemorrhage. Data was obtained from charts of all children who were aged 0 to 3 years and admitted to the inpatient services at Children's Hospital in Boston from 1993 to 2000 with traumatic intracranial hemorrhage. Index test: No history of trauma. Reference standard: Witnessed or confessed abuse, indicators of AHT (e.g., retinal hemorrhages), CPS notes
- b. Downgraded due to very serious risk of bias, primarily due to not all children being included in analysis (34% of charts excluded) and unclear blinding between index test and reference standard adjudicators.
- c. Downgraded for impression, as less than 300 children contributing to outcomes (which makes the estimate of effect less precise)

Question: Should screening or case finding be used to diagnose child maltreatment in children exposed to physical, emotional, sexual abuse or neglect (W'02)?

Sensitivity	0.84 (95% CI: 0.77 to 0.89)					<table><tr><td>Prevalences</td><td>2%</td><td>10%</td><td></td></tr></table>				Prevalences	2%	10%	
Prevalences	2%	10%											
Specificity	0.83 (95% CI: 0.74 to 0.89)												

Outcome	№ of studies (№ of patients)	Study design	Factors that may decrease quality of evidence					Effect per 100,000 patients tested		Test accuracy QoE
			Risk of bias	Indirectness	Inconsistency	Imprecision	Publication bias	pre-test probability of 2%	pre-test probability of 10%	
True positives (patients with child maltreatment)	1 study 257 patients ^a	cross-sectional (cohort type accuracy study)	very serious ^b	not serious	not serious	serious ^c	none	1676 (1533 to 1783)	8378 (7663 to 8914)	⊕○○○ VERY LOW
False negatives (patients incorrectly classified as not having child maltreatment)								324 (217 to 467)	1622 (1086 to 2337)	
True negatives (patients without child maltreatment)	1 study 257 patients ^a	cross-sectional (cohort type accuracy study)	very serious ^b	not serious	not serious	serious ^c	none	80917 (72384 to 87142)	74312 (66475 to 80028)	⊕○○○ VERY LOW
False positives (patients incorrectly classified as having child maltreatment)								17083 (10858 to 25616)	15688 (9972 to 23525)	

Explanations

- a. Wells 2002. Population: Children <3 with intracranial hemorrhage detected via CT scan. Data was obtained from the charts of all children who were aged 0 to 3 years and admitted to the inpatient services at Children’s Hospital in Boston, U.S. from 1993 to 2000. Index test: Four variable model for predicting AHT, including : 1) convexity subdural hematoma, 2) interhemispheric subdural hematoma, 3) lack of a skull fracture, and 4) hygroma. Reference standard: Assessment of patient age, sex, circumstances of injury, results of CPS investigations
- b. Downgraded for very serious risk of bias, primarily due to the fact that a threshold for optimizing data was not prespecified and other unclear aspects, such as time period between index test and reference standard.
- c. Downgraded for serious imprecision, as less than 300 children contributing to outcomes (which makes the estimate of effect less precise)

Web Annex 2c: EtD tables – Identifying Child Maltreatment

WHO Child Maltreatment (CM) Evidence to Decision Framework.

Scoping Question:

- a) For children (0 to <18) involved in health care encounters (P), does universal screening/routine inquiry (I) result in more children who have been exposed to child maltreatment being accurately identified (O) compared to clinical inquiry/case finding (C)?
- b) For children (0 to <18) who have been exposed to CM (P), does method A for universal screening/routine inquiry (O), compared to method B or no method for universal screening/routine inquiry result in better child well-being and welfare outcomes (O)?

Population: Children (0 – 17) involved in health care encounters.

Intervention (index test): Any diagnostic strategy, such as screening or case-finding, that attempted to determine if children had been exposed to physical abuse (including abusive head trauma), sexual abuse, emotional abuse, or neglect. Studies had to describe the index test with enough information to be replicable. Studies that assessed the ability of a test to identify a risk factor for child maltreatment were excluded.

Comparison (reference standard): Studies had to have an acceptable reference standard, such as “expert assessments, such as child’s court disposition; substantiation by the child protection services or other social services; diagnosis by a medical, social or judicial team using one or several information sources (caregivers or child interview, child symptoms, child physical examination, and other medical record review)”.⁶

Main outcomes: 1. Accuracy outcomes (sensitivity, specificity, positive predictive value, negative predictive value), 2. Child school performance, 3. Child school attendance. Studies that at minimum had to set out to evaluate at least one of the previously stated accuracy outcomes.

Setting: Any health care setting

Perspective: Global context

Background: Child maltreatment is a major global public health problem, with many physical, emotional, and relationship consequences across the lifespan, such as injury and attachment disorders beginning in infancy, academic failure and poor peer relationships in childhood, substance abuse in adolescence, relationship problems and maltreatment of one’s own children in adulthood, and mental health symptoms and disorders across childhood, adolescence, and adulthood.^{1–5}

Screening and case finding are two main approaches to identifying child maltreatment that are often contrasted with each other. Screening involves administering a standard set of criteria to evaluate for the presence (or suspicion) of child maltreatment in all presenting children (or a subset of children). It is often framed as a way to help busy healthcare providers recognize the presence of child maltreatment. Case finding, alternatively, requires that providers are alert to the indicators of child maltreatment and, instead of standardized tools or questions, case finding entails providers asking about the child and their potential maltreatment exposure in a way that is tailored to the unique circumstances of the child. In some clinical settings (such as mental health), case finding can take the form of ‘routine inquiry’, or the asking of all presenting children about exposure to child maltreatment; this is because clinicians in these settings need to be alert to the association between mental health symptoms and child maltreatment, and at the very least need to consider exposure to child maltreatment in assessing children’s mental health problems.

Desirable Effects	How substantial are the desirable anticipated effects?	☒ Trivial ☐ Small ☐ Moderate ☐ Large ☐ Varies ☐ Don't know	Included studies: In addition to the 13 articles evaluated in the Bailhache et al. review^{16–28}, 12 new articles^{29–39} were included in this review update, for a total of 25 articles. The studies evaluated a range of strategies for identifying maltreatment, including five studies that evaluated two screening tools: SPUTVAMO and Escape. This summary will provide more complete details about these five studies evaluating screening tools; more complete details about other identification strategies are found in the GRADE table and summary report. Certainty in evidence: All individual studies were downgraded due to very serious concerns for risk of bias (making the evidence “low” quality) and some studies were further downgraded for imprecision (when there were less than 300 participants contributing to outcomes, making the evidence “very low” quality). Furthermore, while all evidence can be considered “low” or “very low” certainty for accuracy outcomes (for which the studies all measured), all of the evidence would have to be downgraded further for indirectness when considering potential extrapolations to long term outcomes (e.g., post-investigation services) due to the lack of direct data on these outcomes. Diagnostic accuracy of screening studies: <table border="1"> <thead> <tr> <th colspan="5">Diagnostic accuracy values of a study that does not suffer from verification bias. Results per 100,000</th></tr> <tr> <th></th><th colspan="2">SPUTVAMO PA³²</th><th colspan="2">SPUTVAMO N³²</th></tr> </thead> <tbody> <tr> <td>Sensitivity (%)</td><td colspan="2">100%</td><td colspan="2">83%</td></tr> <tr> <td>Specificity (%)</td><td colspan="2">96%</td><td colspan="2">87%</td></tr> <tr> <td>Prevalence **</td><td>2%</td><td>10%</td><td>2%</td><td>10%</td></tr> <tr> <td>True positives</td><td>2000</td><td>10,000</td><td>1666</td><td>8330</td></tr> <tr> <td>False negatives (missed cases)</td><td>0</td><td>0</td><td>334</td><td>1670</td></tr> <tr> <td>True negatives</td><td>84,770</td><td>77,850</td><td>84966</td><td>78030</td></tr> <tr> <td>False positives (over treated)</td><td>13,230</td><td>12,150</td><td>13034</td><td>11970</td></tr> <tr> <td></td><td></td><td></td><td></td><td></td></tr> </tbody> </table> <table border="1"> <thead> <tr> <th colspan="5">Diagnostic accuracy values of studies that suffer from serious verification bias. Results per 100,000</th></tr> <tr> <th></th><th>SPUTVAMO CM²⁹</th><th>Escape CM³¹</th><th>Escape CM³⁰</th><th>SPUTVAMO PA³³</th></tr> </thead> <tbody> <tr> <td>Sensitivity (%)</td><td>15%</td><td>88%</td><td>100%</td><td>73%</td></tr> </tbody> </table>	Diagnostic accuracy values of a study that does not suffer from verification bias. Results per 100,000						SPUTVAMO PA ³²		SPUTVAMO N ³²		Sensitivity (%)	100%		83%		Specificity (%)	96%		87%		Prevalence **	2%	10%	2%	10%	True positives	2000	10,000	1666	8330	False negatives (missed cases)	0	0	334	1670	True negatives	84,770	77,850	84966	78030	False positives (over treated)	13,230	12,150	13034	11970						Diagnostic accuracy values of studies that suffer from serious verification bias. Results per 100,000						SPUTVAMO CM ²⁹	Escape CM ³¹	Escape CM ³⁰	SPUTVAMO PA ³³	Sensitivity (%)	15%	88%	100%	73%	
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Sensitivity (%)	15%	88%	100%	73%																																																																	
Undesirable Effects	How substantial are the undesirable anticipated effects?	☐ Large ☒ Moderate ☐ Small ☐ Trivial ☐ Varies ☐ Don't know																																																																			

			2160 children whose report was not substantiated). For the Dinpanah 2017³⁰ study we have very low certainty that 848 to 3754 children will receive some form of post-investigation services (308 to 1054 of children with substantiated maltreatment and 540 to 2700 of children whose report was not substantiated). (Note that the Dinpanah study suggests that 0 children would be missed by the Escape tool.) POTENTIAL HARMS: Given a prevalence rate range of 2% or 10%, a “perfect” identification tool would miss 0 children who have been exposed to maltreatment (false negative) and would mislabel 0 children as being maltreated who had not actually been maltreated (false positive). It is important to note that many children who are falsely identified as being maltreated could receive a distressing CPS investigation and 22.9% of children who are reported to CPS in the U.S. are removed from their homes after a CPS investigation.⁴⁰ Furthermore, 25-50% of children exposed to maltreatment need treatment for mental health concerns (calculations in table based on 25%)⁴² and so children who are missed by these identification tools would not receive access to these services. Finally, it is important to consider that in cases where there are poor services responses to maltreated children, identification practices may cause additional harm to children.⁴¹ No verification bias: - The Sittig 2016³² study suggests that 334 to 1670 children exposed to neglect will be missed by the SPUTOVAMO tool. For those children missed by the SPUTOVAMO tool, 84 to 417 would not receive access to the mental health services they need. Numbers of children falsely identified as being maltreated by this tool range from 12,150 to 13,230 per 100,000 for physical abuse and 11,970 to 13,034 per 100,000 for neglect. For those children who are mislabeled as being physically abused by the SPUTVAMO tool, we have very low certainty that over 12,150 could receive a distressing CPS investigation and 2782 could be removed from their home inappropriately. For those children who are mislabeled as being neglected by the SPUTVAMO tool, we have very low certainty that over 11,970 receive a distressing CPS investigation and 2741 could be removed from their home inappropriately. Verification bias: - The Schouten 2017²⁹ evaluation of the SPUTOVAMO tool suggests that 1705 to 8525 per 100,000 children will be missed by this tool. For those children missed by the SPUTOVAMO checklist, 426 to 2131 will not receive access to the mental health services they need. Numbers of children falsely identified as being maltreated by this SPUTOVAMO-R2 range from 1611 to 1754 per 100,000. For those children falsely identified as having been maltreated by the SPUTOVAMO checklist, we have very low certainty that over 1611 could receive a distressing CPS investigation and 369 could be removed from their home inappropriately. - The Bousema 2016³³ evaluating SPUTOVAMO in a burn centre suggests that 536 to 2680 per 100,000 children exposed to physical abuse would be missed by this tool. For those children missed by the SPUTOVAMO tool, we have very low certainty that 134 to 670 would not receive access to the mental health services they need. Numbers of children falsely identified as being maltreated by this tool range from 4938 to 5377 per 100,000. For those children falsely identified as having been maltreated by the SPUTOVAMO checklist, we have very low certainty that over 4938 could receive a distressing CPS investigation and 1131 could be removed from their home inappropriately. - The two studies (Dinpanah 2017³⁰ and Louwers 2014³¹) evaluating the Escape instrument suggest that either 0 or 400 to 2000 children exposed to maltreatment could be missed by this tool. For those children exposed to maltreatment who are missed by the Escape tool, 100 to 500 will not receive access to the mental health services they need. Numbers of children falsely identified as being maltreated by the Escape tool range from 1530 to 1960. For those children falsely identified by the Escape tool, we have very low certainty that over 1530 receive a distressing CPS investigation and 350 could be removed from their home inappropriately.	

Balance of effects	Does the balance between desirable and undesirable effects favor the intervention or the comparison?	☐ Favors the comparison ☒ Probably favors the comparison ☐ Does not favor either the intervention or the comparison ☐ Probably favors the intervention ☐ Varies ☐ Don't know	POTENTIAL HARMS: Given a prevalence rate range of 2% or 10%, a “perfect” identification tool would miss 0 children who have been exposed to maltreatment (false negative) and would mislabel 0 children as being maltreated who had not actually been maltreated (false positive). It is important to note that many children who are falsely identified as being maltreated could receive a distressing CPS investigation and 22.9% of children who are reported to CPS in the U.S. are removed from their homes after a CPS investigation.⁴⁰ Furthermore, 25-50% of children exposed to maltreatment need treatment for mental health concerns (calculations in table based on 25%)⁴² and so children who are missed by these identification tools would not receive access to these services. Finally, it is important to consider that in cases where there are poor services responses to maltreated children, identification practices may cause additional harm to children.⁴¹ No verification bias: - The Sittig 2016³² study suggests that 334 to 1670 children exposed to neglect will be missed by the SPUTOVAMO tool. For those children missed by the SPUTOVAMO tool, 84 to 417 would not receive access to the mental health services they need. Numbers of children falsely identified as being maltreated by this tool range from 12,150 to 13,230 per 100,000 for physical abuse and 11,970 to 13,034 per 100,000 for neglect. For those children who are mislabeled as being physically abused by the SPUTVAMO tool, we have very low certainty that over 12,150 could receive a distressing CPS investigation and 2782 could be removed from their home inappropriately. For those children who are mislabeled as being neglected by the SPUTVAMO tool, we have very low certainty that over 11,970 receive a distressing CPS investigation and 2741 could be removed from their home inappropriately. Verification bias: - The Schouten 2017²⁹ evaluation of the SPUTOVAMO tool suggests that 1705 to 8525 per 100,000 children will be missed by this tool. For those children missed by the SPUTOVAMO checklist, 426 to 2131 will not receive access to the mental health services they need. Numbers of children falsely identified as being maltreated by this SPUTOVAMO-R2 range from 1611 to 1754 per 100,000. For those children falsely identified as having been maltreated by the SPUTOVAMO checklist, we have very low certainty that over 1611 could receive a distressing CPS investigation and 369 could be removed from their home inappropriately. - The Bousema 2016³³ evaluating SPUTOVAMO in a burn centre suggests that 536 to 2680 per 100,000 children exposed to physical abuse would be missed by this tool. For those children missed by the SPUTOVAMO tool, we have very low certainty that 134 to 670 would not receive access to the mental health services they need. Numbers of children falsely identified as being maltreated by this tool range from 4938 to 5377 per 100,000. For those children falsely identified as having been maltreated by the SPUTOVAMO checklist, we have very low certainty that over 4938 could receive a distressing CPS investigation and 1131 could be removed from their home inappropriately. The two studies (Dinpanah 2017³⁰ and Louwers 2014³¹) evaluating the Escape instrument suggest that either 0 or 400 to 2000 children exposed to maltreatment could be missed by this tool. For those children exposed to maltreatment who are missed by the Escape tool, 100 to 500 will not receive access to the mental health services they need. Numbers of children falsely identified as being maltreated by the Escape tool range from 1530 to 1960. For those children falsely identified by the Escape tool, we have very low certainty that over 1530 receive a distressing CPS investigation and 350 could be removed from their home inappropriately.	

Resources required	How large are the resource requirements (costs)?	☐ Large costs ☐ Moderate costs ☐ Negligible costs and savings ☐ Moderate savings ☐ Large savings ☐ Varies ☒ Don't know	- No studies evaluating the cost of implementing screening or case finding of children exposed to maltreatment was found. As many health care practitioners are presumably already doing clinical inquiry for other health issues in their practice (considering if a child has been maltreated based on indicators and consultation), presumably costs for case finding are negligible (although this is unknown). Costs for implementing screening programs may be marginally higher where they don't exist and where resources would be required to train staff regarding the screening protocol. - From a review of 20 studies, the discounted average lifetime cost of non-fatal child maltreatment per victim in 2015 UK GBP was calculated to be £89,390 (95% confidence interval £44,896 to £145,508). The largest contributors to these costs were social care costs, short-term health-related costs, and costs related to reduced employment.⁴³ - Similar costs per child victim are reported in the U.S.: \$63,871 2012 U.S. dollars. This calculation includes direct costs of child maltreatment (hospitalization, mental health care system, child welfare system services, and law enforcement), which are reported to be \$33,333,619,510 2012 U.S. dollars and indirect costs (special education, juvenile delinquency, mental health and health care, adult criminal justice system, and lost productivity), which are reported to be 46,926,791,578 2012 U.S. dollars..⁴⁴	
Certainty of evidence of required resources	What is the certainty of the evidence of resource requirements (costs)?	☐ Very low ☐ Low ☐ Moderate ☐ High ☒ No included studies		

Equity	What would be the impact on health equity?	☐ Reduced ☐ Probably reduced ☐ Probably no impact ☐ Probably increased ☐ Increased ☒ Varies ☐ Don't know	1. No research was found that evaluated if screening contributes to avoidable or unjust differences in access to services (i.e., inequity) for children exposed to child maltreatment in HICs or LMICs. 2. There is some evidence to suggest that children of lower socio-economic status and Indigenous and racialized children are identified at greater frequencies than other children by healthcare providers as having been maltreated. ^{45–49} 3. Children from lower socio-economic status and Indigenous and racialized children may be prone to higher identification by health care professionals due to visibility bias, labelling bias, or explicit/implicit bias.⁵⁰ Visibility bias refers to situations where certain families are more visible due to certain characteristics or behaviours. For example, families who are poor may access more social services, which may make them more prone to surveillance and identification; similarly, racialized groups that are minorities in their communities may be more visible and thus potentially subject to more identification. Labeling bias refers to the tendency for reporters to look for maltreatment in certain groups due to perceptions about these groups. For example, health care providers who share characteristics with families (e.g., similar parenting styles) may be less likely to report them and vice versa. Finally, explicit/implicit bias refers to known or unknown biases that healthcare providers may have, such as explicit or implicit racism. Health care providers who harbour implicit/explicit racial biases may be more likely to report certain groups. 4. Alternatively, children from certain groups may be underreported due to challenges in identifying maltreatment in this groups. For example, a recent meta-synthesis of qualitative research identified that mandated reporters have challenges identifying maltreatment in children with disabilities.⁵¹ 5. Even with identification of children who have been exposed to maltreatment, there does not always seem to be access to good service responses following identification, which suggests that identification is not sufficient for ensuring equitable access to services.^{40,51}	

Acceptability	Is the intervention acceptable to key stakeholders?	☐ No ☐ Probably no ☐ Probably yes ☐ Yes ☐ Varies ☒ Don't know	1. There is some evidence to suggest that some healthcare practitioners lack training about how to recognize and respond to children exposed to maltreatment and that they struggle to identify less overt forms of maltreatment, such as less severe physical abuse, emotional abuse, or children's exposure to intimate partner violence.⁵¹ 2. Barriers to identifying and responding to children exposed to maltreatment (either through case finding or screening) exist at many levels, including personally (e.g., lack of training; conflicting values, such as prioritization of parental rights over child well-being; fear of consequences, such as testifying in court), interpersonally (e.g., lack of opportunities to communicate with colleagues or others about maltreatment cases), institutionally (e.g., lack of time to report, lack of experts at institutions to consult with), in the community (e.g., lack of coordination between institutions responding to children exposed to maltreatment), and nationally (e.g., lack of national protocols for responding to maltreatment).⁵²⁻⁵⁵ 3. Facilitators to identification of children exposed to maltreatment could include institutional support, access to child abuse experts for consultation and accurate understandings of reporting requirements.^{52,54}	
Feasibility	Is the intervention feasible to implement?	☐ No ☐ Probably no ☒ Probably yes ☐ Yes ☐ Varies ☐ Don't know	1. The implementation of mandatory screening protocol across all emergency departments in the Netherlands^{29,31} suggests that screening for child maltreatment is feasible in some settings. Screening for maltreatment has also been conducted on a trial basis (in research studies) in the emergency department of one upper middle income country (Iran)³⁰, but the feasibility in low and middle income countries is otherwise unclear.	

Should screening vs. case finding be recommended for children exposed to maltreatment?

Conclusions	Strong recommendation against the intervention	Conditional recommendation against the intervention	Conditional recommendation for either the intervention or the comparison	Conditional recommendation for the intervention	Strong recommendation for the intervention
Type of recommendation	☐	☒	☐	☐	☐

Recommendation	R1 (existing): Health care providers should be alert to the clinical features associated with child maltreatment and associated risk factors and assess for child maltreatment without putting the child at increased risk. (very low, conditional) R2 (new): Health care providers should not use a universal screening approach (e.g. a standard instrument, set of criteria, or questions asked of all children in health care encounters) to identify possible child maltreatment. (low, conditional) R3 (adapted from existing): Health care providers should consider exposure to child maltreatment when assessing children with conditions that may be caused or complicated by maltreatment, in order to improve diagnosis/identification and subsequent care, without putting the child at increased risk. (indirect evidence, strong) Written information on child maltreatment should be available in health-care settings in the form of posters, and pamphlets or leaflets (<i>with appropriate warnings about taking them home in case that could compromise safety</i>).(<i>conditional</i>)
Justification	The GDG constates that: • No studies have evaluated the performance of measures in predicting referrals and health outcomes. There are no studies available that show positive results for the wellbeing of children and/or their non-offending caregivers. • Sensitivity and specificity of instruments were poor to fair depending on the instrument. • There is a high risk of identifying false positives, which can lead to severe and harmful responses such as high stigma, separation of families, placement of children in unsafe institutions etc. Evidence supporting the efficacy of strategies for detecting maltreatment of children within the context of health services is sparse and inconclusive. However, it is generally agreed that it is important for health care providers to detect child maltreatment. It is recognized that assessment of child maltreatment requires a clinician who is competent enough to ask the right questions and to respond appropriately.
Subgroup considerations	n.a.
Implementation considerations	Inquiry into child maltreatment should occur in the context of case finding by clinicians competent to do so, and should be followed by interventions, referral and/or follow up, where appropriate. Inquiry and following actions should take into account the availability of interventions. There is no evidence to support universal screening or routine inquiry. The strategies, including reporting and follow-up of the assessment should be culturally sensitive and should not allow violation of children's basic human rights according to internationally endorsed principles.
Monitoring and evaluation	n.a.
Research priorities	Research into performance in predicting referrals and health outcomes should be prioritized.

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[New 2015]

CH 5: Effective strategies for detecting maltreatment of children and youth within the context of mental health and developmental assessment. [New 2015]

SCOPING QUESTION: Within the context of mental health and developmental assessment of children and youth, what are the effective strategies for detecting maltreatment?

BACKGROUND

Child maltreatment (CM) is defined as abuse and neglect suffered by children less than 18 years of age. It includes all types of physical and/or emotional ill-treatment, sexual abuse, neglect, negligence and commercial or other exploitation that results in actual or potential harm to the child's health, survival, development or dignity, in the context of a relationship of responsibility, trust or power (World Health Organization [WHO], 2014). Exposure to intimate partner violence (IPV) is also sometimes included as a form of CM (WHO, 2014). This review takes into consideration IPV. It does not include other forms of violence against young people such as dating violence, bullying, etc.

CM is a major public health problem associated with a broad range of negative health outcomes across the lifespan (Gilbert et al., 2009). Mental health problems are increased among children and adolescents exposed to CM. The range of mental health problems includes internalizing conditions (e.g., such as depression, anxiety and post-traumatic stress disorder [PTSD]), externalizing conditions (e.g., antisocial behaviour and substance abuse) and suicidal behaviour. There is also increased risk of developmental problems (e.g., low academic achievement) and relationship problems (e.g., increased risk of problems in parenting). There are no universally accepted definitions for any type of maltreatment.

Most information about CM is based on studies conducted in high-income countries; however, increasingly, surveys are providing important information about estimates in low- and middle-income countries (Centers for Disease Control [CDC], 2014). Recent meta-analyses indicate self-reported prevalence estimates of CM include physical abuse (22.6%; no gender differences) (CDC, 2014), neglect (physical: 16.3%; and emotional: 18.4%; no gender differences) (Stoltenborgh et al., 2013), sexual abuse (18.0% in girls and 7.6% in boys) (Stoltenborgh et al., 2013); and emotional abuse (36.3%; no gender differences) (Stoltenborgh et al., 2011). Risk indicators show an association with CM, but are not necessarily causally related. Much more is known about risk indicators for physical and sexual abuse, with risk indicators for neglect and exposure to IPV similar to those for physical abuse (Stoltenborgh et al., 2012). Less is known about risk indicators for emotional abuse (Hibbard et al., 2012). Children with special needs, including developmental disabilities, are also at increased risk of CM (Jones et al., 2012).

Detecting CM is an important aspect of efforts to protect children from harm, as well as for determining which children are in need of interventions to reduce associated impairment, including mental health problems. It is helpful for healthcare providers to be aware of the clinical features that



[New 2015]

should prompt consideration of one or more types of CM. While a review of such clinical features is beyond the scope of this evidence profile, the NICE guideline on “When to suspect child maltreatment” is useful in summarizing the clinical features associated with maltreatment (National Collaborating Centre for Women’s and Children’s Health [NCC-WCH], 2009).

The types of screening/assessment tools relevant to this scoping question include:

1. Those administered to the parent or family to identify those who might be at risk of maltreating a child;
2. Those administered to a child or adolescent to identify risk of maltreatment or those who have experienced/are currently experiencing maltreatment;
3. Clinician-completed assessments that identify either caregivers or children/adolescents as described in #1 and #2; and
4. Physical examinations of the child.

The 4th is not directly relevant to the type of assessment strategies included as part of a mental health assessment of a child; however, it was included for completeness.

PART 1: EVIDENCE REVIEW

Population / Intervention / Comparison / Outcome (PICO)

- **Population:** Children and adolescents (i.e., vulnerable groups, including children with developmental disorders)
- **Interventions:** Assessment strategies (e.g., screening and assessment questionnaires, clinical interviews) for detecting maltreatment in children and adolescents
- **Comparison:** Different assessment strategies
- **Outcomes**
 - **Critical** – Appropriate identification, adverse effects
 - **Important** – Events and outcomes subsequent to identification (including referrals, fewer reported instances of severe physical assault, etc.)

Search strategy

The search was conducted in Week 39 of 2014 using the following databases: MEDLINE, Embase, PsycINFO, CINAHL, the Cochrane Library (including the Cochrane Database of Systematic Reviews, DARE, Health Technology Assessments and the NHS Economic Evaluation Database),



[New 2015]

SocIndex and Dissertations and Theses. Controlled vocabulary and key words were combined and used to express the concepts of CM and assessment or diagnosis. Examples of such terms include:

- For the concept of CM, child abuse [MeSH] and child within five words of abuse, maltreatment, neglect, assault, rape, molest, hitting, and spanking. Terms for harsh parenting and corporal punishment were also included;
- For the concept of assessment or diagnosis, examples of terms used include exp diagnosis [MeSH], mass screening [MeSH], medical history taking [MeSH], assess, detect, diagnosis, screen, interview, and identify.
- Terms within a concept were combined with the Boolean Operator OR, and the two concepts were combined with the operator AND.

The results were limited to review articles and meta-analyses through the use of very focused controlled vocabulary and key words. In databases that had limits for languages, the results were limited to English only, as well as to the years 2008-2014. This was supplemented with focused searches for systematic reviews and screening/assessment randomized controlled trials (RCTs) prior to 2008 to ensure that all relevant individual studies were assessed in at least one systematic review. This process helped to identify Nygren et al.'s (2004) US Preventive Services Task Force review, which is included in the evidence profile.

Included in narrative review

- Bailhache M, Leroy V, Pillet P, Salmi LR (2013). Is early detection of abused children possible? A systematic review of the diagnostic accuracy of the identification of abused children. *BioMed Central Pediatrics*.13(1):202. doi:10.1186/1471-2431-13-202.
- Louwers ECFM, Affourtit MJ, Moll HA, De Koning HJ, Korfage IJ (2010). Screening for child abuse at emergency departments: a systematic review. *Archives of Disease in Childhood*.95(3):214-218. doi:10.1136/adc.2008.151654.
- Nelson HD, Selph S, Bougatsos C, Blazina I. Behavioral Interventions and Counseling to Prevent Child Abuse and Neglect: Systematic Review to Update the U.S. Preventive Services Task Force Recommendation. Evidence Synthesis No. 98. AHRQ Publication No. 13-05176_EF-1. Rockville, MD: Agency for Healthcare Research and Quality; 2013.
NOTE: this review included all potential behavioural interventions for CM; for the current evidence profile, evaluation is restricted to the one trial specific to identification/assessment (the 10 other trials were specific to home visitation)
- Nygren P, Nelson HD, Klein J (2004). Screening children for family violence: a review of the evidence for the US Preventive Services Task Force. *Annals of Family Medicine*.2(2):161-169. doi:10.1370/afm.113
- van Konijnenburg EMH, Teeuw, AH, Sieswerda-Hoogendoorn T, Leenders AG, van der Lee J H (2013). Insufficient evidence for the use of a physical examination to detect maltreatment in children without prior suspicion: A systematic review. *Systematic Reviews*.2(1):109.

- Woodman J, Lecky F, Hodes D, Pitt M, Taylor B, Gilbert R (2010). Screening injured children for physical abuse or neglect in emergency departments: a systematic review. *Child: Care, Health and Development*.36(2):153-164. doi:10.1111/j.1365-2214.2009.01025.x.

Excluded from narrative review

Hepworth I, McGowan L (2013). Do mental health professionals enquire about childhood sexual abuse during routine mental health assessment in acute mental health settings? A substantive literature review. *Journal of Psychiatric and Mental Health Nursing*. 20(6):472-483.

REASON FOR EXCLUSION: Focused on extent to which inquiry occurs in adult mental health assessments.

Newton AS, Zou B, Hamm MP, Curran J, Gupta S, Dumonceaux C, Lewis M (2010). Improving child protection in the emergency department: A systematic review of professional interventions for health care providers. *Academic Emergency Medicine*.17(2):117-125. doi:10.1111/j.1553-2712.2009.00640.x.

REASON FOR EXCLUSION: Evaluated interventions for improving documentation or clinical assessments, but outcomes included physician knowledge and documentation.

Selph SS, Bougatsos C, Blazina I, Nelson HD (2013). Behavioral interventions and counseling to prevent child abuse and neglect: A systematic review to update the US Preventive Services Task Force recommendation. *Annals of Internal Medicine*. 158(3):179-190. doi:10.7326/0003-4819-158-3-201302050-00590.

REASON FOR EXCLUSION: A shorter journal publication of the full US Preventive Services Task Force (USPSTF) systematic review is presented by Nelson et al. (2013) (see 'Included' section above).

Teeuw AH, Derkx BH, Koster WA, van Rijn RR (2012). Educational paper: Detection of child abuse and neglect at the emergency room. *European Journal of Pediatrics*.171(6):877-885. doi:10.1007/s00431-011-1551-1.

REASON FOR EXCLUSION: Not a systematic review and the studies are included elsewhere.

Williams B, Naughton A, Mann M, Tempest V, Kemp A, Maguire S. Identifying neglect or emotional abuse in school aged children: A systematic review. In: Annual Conference of the Royal College of Paediatrics and Child Health, Birmingham, the United Kingdom, 8 April 2014.

REASON FOR EXCLUSION: An abstract and not a full article; main aim of presentation was to define educational, emotional or behavioural features in children aged 5-13 years experiencing neglect or emotional abuse.

Woodman J, Pitt M, Wentz R, Taylor B, Hodes D, Gilbert RE (2008). Performance of screening tests for child physical abuse in accident and emergency departments. *Health Technology Assessment*.12(33):iii, xi-xiii,1-95.

REASON FOR EXCLUSION: Overlaps with subsequent systematic evidence review addressing the same question.

PICO Table of Systematic Evidence Reviews (SERs)

Intervention	Comparison	PICO-specific Outcomes	SERs included in narrative review	Rationale
<u>Parent/Family Assessments:</u> Screening tools/checklists/observations administered to- or self-administered by the parent or family to identify those who might be at risk of maltreating a child. Tools assessed in fair/good studies (Nygren et al., 2004 only). Family Stress Checklist* Hawaii Risk Indicators Screening Tool Kempe Family Stress Inventory (KFI) (*referred to as Kempe Family Stress Inventory (KFI) in Nygren et al., 2004)	None	Identification of risk for abuse	No evidence	
		Identification of suspected abuse	Bailhache et al. (2013)	Bailhache et al. (2013) is the most recent SER that includes studies that come closest to addressing scoping question.
		Identification of confirmed abuse	Nygren et al. (2004)	Nygren et al. (2004) included parent/family screening studies not reviewed in other included SERs.
		Adverse effects (i.e., misidentification)	No evidence	
<u>Child/Adolescent Assessments:</u> Screening tools/checklists/observations administered to- or self-administered by a child or adolescent to identify risk of maltreatment or those who have experienced/are currently experiencing maltreatment. Specific tools reviewed include:	None	Identification of risk for abuse	Bailhache et al. (2013)	Bailhache et al. (2013) is the most recent SER that includes studies that come closest to addressing scoping question.
		Identification of suspected abuse	No evidence	
		Identification of confirmed abuse	No evidence	

Intervention	Comparison	PICO-specific Outcomes	SERs included in narrative review	Rationale
- Sexual abuse - Parent: Signs Associated with Sexual Abuse (SASA) (sample boys aged <18 years) - Parent: Child Sexual Behavior Inventory (CSBI) - Emotional - Child (aged 13-15 years) [un-named scale, Sri Lanka] Physical/sexual/emotional/neglect - Childhood Trauma Questionnaire, child self-report (sample males and females aged 12-17 years)		Adverse effects (i.e., misidentification)	No evidence	
<u>Clinician-completed Assessments:</u> Screening tools/checklists/observations that identify either parents or children/adolescents as described in #1 and #2. Specific types of assessment reviewed include: - Physical abuse: Prediction rule, decision tree, physical exam, history of trauma, imaging, Screening Index for Physical Abuse (SIPCA) score - Sexual abuse: physical exam - Screening markers (child less than 1 year of age; repeat attendance; injury type) - Observation in a high-risk sample	High- vs. low-risk adolescent mothers Abused or neglected children vs. non-abused children	Identification of risk for abuse Identification of suspected abuse Identification of confirmed abuse Adverse effects (i.e., misidentification)	Bailhache et al. (2013) Louwers et al., 2010 Nygren et al., 2004 Woodman et al., 2010	Bailhache et al. (2013) is the most recent SER that includes studies that come closest to addressing scoping question. Louwers et al. SER focused on specific checklist items Nygren et al. (2004) included parent/family screening studies not reviewed in other included SERs. Woodman et al. most recent SER to examine markers [limitation: all studies poor quality; none sufficiently accurate to justify use]
<u>Physical Examination:</u>	None	Identification of confirmed cases (i.e., diagnostic accuracy)	van Konijnenburg et al. (2013)	Included for completeness, even though much less

Intervention	Comparison	PICO-specific Outcomes	SERs included in narrative review	Rationale
Screening physical examination, 'Top to toe' to detect maltreatment in children (0-18 years) without prior suspicion.		- sensitivity and specificity; prevalence of any signs of child maltreatment confirmed or unconfirmed by a reference standard [independent vs. not independent from results])		relevant for context of mental health assessment, especially those conducted on an outpatient basis.
		Adverse effects (i.e., misidentification; other harms)		
<u>Integrated Interventions:</u> SEEK Model (only comprehensive intervention including an assessment component): 1) Specially trained residents, including hand-outs for doctors and patients; 2) Administration of the Parent Screening Questionnaire [assessment component]; and 3) A social worker for onsite clinical services, as needed.	Usual care	Identification of risk for abuse, identification of suspected abuse, identification of confirmed abuse (i.e., parent responses on the Parent-Child Conflict Tactics Scale measured at baseline and at 3 years; Child Protection Service reports; physical assault episodes; non-adherence to medical care; delays in immunizations)	Nelson et al. (2013)	Only recent SER that includes the SEEK trial (Dubowitz et al., 2009)

Narrative description of the studies that went into the analysis

The most recent SER that came closest to addressing the scoping question was the review by Bailhache et al. (2013). The aim of the review was to examine the accuracy of diagnostic instruments used to identify maltreatment in children (i.e., neglect, physical, sexual and psychological) at any stage prior to death and to assess whether any were adapted to screening. The instrument was defined as any reproducible assessment conducted in any type of setting. The authors noted that instruments that identified child victims of IPV were excluded because the main victim is not the child. The authors considered tools as adapted to screening if they met the WHO criteria on the adequacy of tests used in screening programs, which include: Identify children prior to serious consequences from maltreatment; identify children with high sensitivity; and identify abused children with high enough specificity to avoid stigmatization among non-abusers.

Studies that were conducted between 1966 and April 2012 in English and French and that included at least one estimate of accuracy of an assessment (i.e., a reference standard) and a description of the instrument were eligible for inclusion. The authors emphasized that there is no gold standard for detecting maltreatment and defined acceptable reference standards including expert assessments, substantiation by a social service and diagnosis by medical, social or judicial team using one or more information sources.

Of the 2380 articles identified, 13 met the inclusion criteria. There were eight studies that were prospective, with the other five retrospective. The types of maltreatment examined in the studies included physical abuse in seven studies (assessment of injuries, such as head trauma), sexual abuse in four (two involving physical assessments, two involving a parental interview), psychological abuse in one (self-report by children) and all four types of maltreatment in one (self-report by children). Study quality was determined using Quality Assessment of Diagnostic Accuracy Studies (QUADAS) criteria. The authors reported that the overall quality of the selected studies was poor without taking into account the lack of a gold standard for identifying maltreatment in children. Sensitivity and specificity of instruments varied between 0.26 and 0.97 and between 0.51 and 1, respectively. Three tests had sensitivity greater than 90%-absence of scalp swelling to identify inflicted head injury, which is a decision tool used to identify physically abused children in a Pediatric Care Unit, as well as a parental interview integrating 12 symptoms to identify sexually abused children; however, here the specificity was less than 90%.

The authors concluded that there was “very scarce and low-quality evidence on the accuracy of instruments used for identifying abused children,” (p.10) Furthermore, the authors state that the identified tools were not adapted to screening because they did not meet the WHO criteria due to low sensitivity and specificity, as well as the late identification of abused children.

Screening/Assessment Tools or Approaches – Administered to Child or Adolescent

Bailhache et al. (2013) identified two studies in their systematic review (Bernstein et al., 1997; Fernandopulle et al., 2003) that assessed instruments administered to children or adolescents. Bernstein et al. (1997) examined the validity of the Child Trauma Questionnaire (CTQ), a 70-item self-report instrument that assessed physical, sexual, emotional abuse and physical neglect in a sample of males and females (aged 11 to 17 years) that were admitted to in-patient services. Fernandopulle et al. (2003) evaluated a self-administered instrument of emotional abuse in 13-15 year-old school children. The two studies met only 5 and 7 of the 14 quality criteria, respectively, and so were considered of low quality. These are the only two of 13 studies included in the SER that focused on child self-report and so this description is provided despite their low study quality.

Screening/Assessment Tools or Approaches – Administered to Parent or Family

Nygren et al. (2004) conducted a systematic review for the USPSTF identifying two fair-to-good studies and one fair-to-poor study of self-administered screening tools, all of which were conducted in samples of high-risk, pregnant women in USA. While screening could reasonably identify potential abuse in these samples, these studies were not linked to abuse outcomes.

Screening/Assessment Tools or Approaches – Clinician-completed (including Checklists)

The review by Louwers et al. (2010) examined the effectiveness of interventions applied at emergency departments (ED) that significantly increase the detection rate of confirmed cases of child abuse. Of the fifteen papers describing interventions that were selected for review, four were included and assessed for quality. In these four studies, the intervention consisted of a checklist of indicators of risk for child abuse. The following three items in the checklist were included in all four studies: 1) Whether the findings on examination conformed to the history given by the child or parents; 2) Whether there was a delay in seeking medical help; and 3) Whether there was an inconsistent history. Other checklist items found in one or more studies included child/parent behaviour and interaction appropriate (in two studies); child/parent reported or showed evidence of abuse (in one study); previously seen at ED (in one study); and action of parents after injury appropriate (in one study).

In two studies, age of children investigated was limited to 5 or 6 years. The other two studies included children in all ages (up to 17 or 18 years). After implementation, the rate of detected cases of suspected child abuse increased by 180% (weighted mean in three studies); however, the number of confirmed cases of child abuse (reported in two out of four studies) showed no significant increase. The review authors noted that although there was no significant increase in the detection of confirmed child abuse, all studies reported an increase in the rate of suspected cases of abuse after the introduction of an intervention and improved documentation of patient files, as well as a higher level of awareness of child abuse among ED staff.

Overall, the authors concluded that interventions in emergency departments to increase the detection rate of cases of confirmed child abuse are scarce in the literature. Past study numbers and methodology have been inadequate to show conclusive evidence on the effectiveness of these interventions.

Additionally, two studies identified by Nygren et al.'s (2004) systematic review that assessed clinical screening tools/checklists were rated "poor".

Physical Examination of the Child

van Konijnenburg et al. (2013) conducted a systematic review to evaluate the diagnostic value of a screening physical examination to detect maltreatment in children without prior suspicion. Studies were selected if they presented medical findings of a complete physical examination conducted by a health care professional, in any health care setting, as a screening procedure (part or whole) for children aged 0-18 years. The recorded child maltreatment required confirmation by one reference standard including court, CPS, an expert panel, a forensic physician or a self-report. A complete physical examination was defined as minimally consisting of a visual inspection of the entire skin and oral cavity. Studies were excluded if the examination was conducted solely for the purpose of identifying sexual abuse.

The search yielded 4499 citations and a total of three studies (two cross-sectional and one prospective) met the search criteria. Study quality was determined using QUADAS-2 criteria. The aim of one study was to evaluate a brief screening assessment for child maltreatment in an ED in Italy.

The aim of the other two studies was to identify the prevalence and risk factors of child maltreatment, with one conducted in 19 emergency departments in Egypt in 2003 and the other conducted in a rural community in USA in 1982. Studies varied in terms of the age group of the sample (i.e., 12 to 18 years, 0 to 14 years and 0-2 years) and in the reference standard (i.e., CPS, expert panel and child self-report).

The prevalence of signs of maltreatment of the children examined ranged from 7.8% and 14.6% for unconfirmed cases and 0.8% and 13.5% for confirmed cases. The authors reported that none of the studies examined potential harms from the physical examination and none provided an estimation of sensitivity and specificity of the screening physical examination for child maltreatment. The authors also noted that the risk of bias was high for the reference standard across the studies. The authors concluded that due to a lack of studies, they could not draw conclusions about the diagnostic value of a physical examination in children without prior suspicion of child maltreatment.

Integrated Interventions

The Nelson et al. (2013) systematic review for the USPSTF identified one RCT by Dubowitz et al. (2009) assessing the SEEK (Safe Environment for Every Kid) model of care in pediatric clinics. This trial was conducted in 729 children (76% completion rate) aged 0-5 years. The trial reported no harms and significant improvements in the primary outcomes for the intervention group, including fewer child protection services (CPS) reports (3.3% vs. 19.2%; $p=0.03$), fewer instances of non-adherence to medical care (4.6% vs. 8.4%; $p=0.05$; 3), less delayed immunizations (3.3% vs. 9.6%; $p=0.002$), and fewer reported instances of severe or very severe physical assault (average weighted score on Conflict Tactics Scale, Parent-Child version: 0.11 vs. 0.33; $p=0.04$).

The trial was rated “fair” by Nelson et al. (2013); however, a subsequent trial of the SEEK model in a less at-risk pediatric population found few benefits for the intervention group (Dubowitz et al., 2012). This latter trial was mentioned as being “in progress” in the Nelson et al. (2013) review.

Harms/Adverse Effects

None of the SERs found evidence of harms associated with assessment/screening; however, harms were not measured as a specific outcome in the individual studies included in the SERs. Potential harms that have been identified in the literature include consequences of false negatives (i.e., children identified wrongly as not abused) and of false positives (i.e., children identified wrongly as abused and/or parents identified wrongly as abusers) (Bailhache et al., 2013); correct identification without any referral for services and/or lack of effective services; and possible increased risk of harm associated with a perpetrator becoming aware of the identification of maltreatment. Additional possible adverse effects include psychological distress and increased family conflict. The involvement of health care providers who do not have the experience and/or training to ask about CM has the potential to cause harm. Also, the issue of confidentiality is important, as well as taking into account the need to address the child’s safety following a maltreatment disclosure. Any disclosure may also lead to risk for other siblings and a non-offending parent, especially if IPV is a consideration. Despite the paucity of evidence, there is the important principle of protecting children from maltreatment and the need to identify such exposure, as well as the risk of harm.

Table 1. Summary of SER findings by intervention category

SER	Design/intervention	Samples	Key findings	Quality / Limitations / Summary
<i>Parent/Family Assessments</i>				
Nygren et al. (2004)	1 retrospective cohort study (risk-stratified at intake with Family Stress Checklist) 2 cross-sectional 2-step screening studies using Hawaii Risk Indicators Screening Tool ([HRST]; medical record or interview) then Kempe Family Stress Inventory (KFI)	262 adolescents (13-19 y) in a maternity program (USA) 287 Pregnant women at hospital obstetric clinics (USA) 2870 at-risk pregnant women (USA)	Family Stress Checklist was only significant predictor of maltreatment using multiple outcome measures. 89% sensitivity and 28% specificity for the two-step process (HRST + KFI) with high scores on the Child Abuse Potential (CAP) inventory. KFI score was highly correlated with maltreatment rates (per 1000 children): 7 for low-risk scores, 18 moderate, 45 high, and 172 severe. (others report sensitivity 97%, specificity 21% for scores in high-severe risk range).	Good-fair (differential loss to follow-up) Fair (no abuse outcomes, high attrition) Fair-poor (many confirmed reports were made by home visitors to high-risk homes) Screening can reasonably identify potential abuse in samples of high-risk, pregnant women, but no link to abuse outcomes.
Bailhache et al. (2013)	No fair or good studies.	No fair or good studies.	No fair or good studies.	No fair or good studies for parent/family assessments.
<i>Child/Adolescent Assessments</i>				
Bailhache et al. (2013)	No fair or good studies.	No fair or good studies.	No fair or good studies.	No fair or good studies for child/adolescent assessments.
<i>Clinician-completed Assessments</i>				
Louwens et al. (2010)	4 studies of risk indicator checklists including 3 common items: 1) Whether the findings on examination conformed to the history given by the child or	5 or 6 year olds (two studies); children up to 17 or 18 years (2 studies);	Rate of detected cases of suspected child abuse increased by 180% (weighted mean in three studies); however, the number of confirmed cases of child abuse (reported in two out of four studies) showed no	3 of the 4 studies rated fair/good (rating 2-3) No evidence supporting checklists to reduce abuse-related outcomes.

SER	Design/intervention	Samples	Key findings	Quality / Limitations / Summary
	parents; 2) Whether there was a delay in seeking medical help; and 3) Whether there was an inconsistent history.	recruited in emergency departments.	significant increase.	
Louwens et al. (2010) Nygren et al. (2004) Woodman et al. (2010)	No fair or good studies.	No fair or good studies.	No fair or good studies.	No fair or good studies for clinician-completed assessments.
<i>Physical Examination</i>				
van Konijnenburg et al. (2013)	No fair or good studies.	No fair or good studies.	No fair or good studies.	No evidence for physical examination.
<i>Integrated Interventions</i>				
Nelson et al. (2013)	1 RCT met criteria – SEEK (Safe Environment for Every Kid)	729 children (0-5 years); high risk sample in USA pediatric clinics	Fewer child protection services (CPS) reports (3.3% vs. 19.2%; $p=0.03$); fewer instances of non-adherence to medical care (4.6% vs. 8.4%; $p=0.05$); less delayed immunizations (3.3% vs. 9.6%; $p=0.002$); and fewer reported instances of severe or very severe physical assault (Conflict Tactics Scale, Parent-Child version: 0.11 vs. 0.33; $p=0.04$).	Fair NOTE: A subsequent trial of SEEK in a less at-risk pediatric population found few benefits for the intervention group. Promising evidence of integrated interventions including assessment, but only in high-risk samples.

Additional evidence not mentioned in PICO & Summary tables

The search identified three individual studies published since the Bailhache et al. (2013) review that were relevant to the scoping question:

- One quasi-experimental study assessed a screening protocol for adults presenting to the ED (Diderich et al., 2013);
- A second study using a prospective cohort design assessed a screening instrument completed for children presenting to the ED (Louwers et al., 2014); and
- A third cohort study examined a structured interview with parents as a screening tool (Staal et al., 2013).

None of these studies were of sufficient quality to influence the recommendation.

Diderich et al. (2013) used a before-and-after study design to evaluate a screening tool (i.e., Hague protocol) for adults presenting for care at 9 EDs in the Netherlands because of IPV, substance abuse, suicide attempt or other serious psychiatric problems. The goal was to determine if this protocol for screening adults could identify children at high risk for maltreatment. Following the implementation of the protocol, the number of parents referred to the regional child maltreatment reporting centre increased (OR=28.0; 95% CI: 4.6–170.7) and child abuse was confirmed in 91% of cases at assessment.

Louwers et al. (2014) used a prospective cohort study to evaluate a 6-item screening tool (i.e., Escape) in three Dutch EDs to measure the accuracy of detection of potential child maltreatment. Screening was completed for each child visiting the EDs for a total of 18 275 visits. There were 420 children with a positive screening result and 11 with a negative result were identified as potentially abused, resulting in a sensitivity of 0.80 and specificity of 0.98.

Stall et al. (2013) used a cross-sectional study design to evaluate a structured interview (i.e., SPARK) administered to parents of 1850 18-month old children living in Zeeland, a province of the Netherlands. The interview was conducted by trained child-health care nurses on a home visit or during a visit to a well-baby clinic and was based on parents' concerns and desire for care. Follow-up took place at 18 months after completing the screening, with the overall risk assessment of the screening tool found to be the strongest predictor for reports to regional child maltreatment reporting centres, with an OR (high vs. low risk) of 16.3 (95% CI: 5.2–50.8).

The search identified articles about the use of the National Institute of Child Health and Development (NICHD) Investigative Interview Protocol for forensic evaluation of child sexual abuse. The purpose of this structured interview protocol is to guide interviewers through administration of open-ended questions to assess exposure to child sexual abuse. One study examined its use by mental health professionals without training in the protocol (Cyr and Lamb, 2009) and determined that it led to more open-ended questions compared to the use in a matched control group; however, it did not address the outcomes of appropriate identification and referrals.

PART 2: FROM EVIDENCE TO RECOMMENDATIONS

Evidence to recommendation table

Benefits	There are no SERs that have specifically addressed the question of the use of assessments to detect maltreatment in children and adolescents, within the context of mental health and developmental assessments. One study found benefits including fewer child protection services reports; however, a second study of SEEK conducted with a lower risk group found few benefits. It was not possible to determine the balance between benefits and harms of screening or assessments because of a lack of critical evidence.
Harms	Adverse effects of assessments were not evaluated in the studies; however, potential harms include consequences of false negatives (i.e., children identified wrongly as not abused) and of false positives (i.e., children identified wrongly as abused and/or parents identified wrongly as abusers); correct identification without any referral for services and/or lack of effective services; and possible increased risk of harm associated with a perpetrator becoming aware of the identification of maltreatment. Additional possible adverse effects include psychological distress and increased family conflict and harm associated with a lack of skills in child maltreatment assessment among healthcare providers that can compromise a child's safety following a disclosure of maltreatment. Disclosures may also lead to risk for other siblings and a non-offending parent, especially if IPV is a consideration.
Summary of the quality of evidence	Sensitivity and specificity of instruments were poor to fair depending on the instrument and population. No studies have evaluated the performance of measures in predicting referrals and health outcomes. Most studies that address approaches to detection of child maltreatment have focused on identification of physical abuse either through checklists and/or physical examinations.

	The quality of the individual studies is generally very low. The SEEK study, which was considered of fair quality and showed benefits, was followed by a study with few benefits, which necessitates replication of the original SEEK study. The results of the second trial in a lower-risk sample suggest that use of the SEEK model with families of lower risk for child maltreatment may not be effective.

Value and preferences	
In favour	Although there is recognition in the child health literature of the importance of determining effective methods for health care providers to identify children at risk of- or currently experiencing abuse or neglect, there is lack of agreement about how and where these interventions should occur and who should deliver them. There is the assumption that assessment of child maltreatment by health care providers can lead to referrals (e.g., to child protection agencies) that will ensure cessation of the maltreatment and additional referrals for treatment related to the child maltreatment exposure. There is high value on identifying children at risk or experiencing abuse or neglect since once child maltreatment is detected, there is the possibility of providing education, social services, parent skills training, child protection measures and treatment to address physical and psychological harms caused to the child. Intensive psychosocial family programmes show promise in reducing recurrence of child maltreatment (Chaffin et al., 2011; Chaffin et al., 2012; Jouriles et al., 2010) and there is increasing evidence for psychological treatments to reduce symptoms in children who have been exposed to maltreatment (Macdonald et al., 2012; Cohen et al., 2011; Lieberman et al., 2006). However, according to Goldman et al.'s (2013) review for the US Agency for Healthcare Research and Quality (AHRQ), the strength of evidence is low for the majority of interventions for children exposed to maltreatment. Furthermore, the placement in out-of-home care can lead to benefits for maltreated children, but these need to be balanced against the risks of removing children from their families (MacMillan et al., 2009).

Against	Assessment of child maltreatment needs to be coupled with referrals to effective interventions once identified (Nelson et al, 2013), and there is a paucity of effective interventions available. If a child is identified as maltreated or at risk of abuse or neglect and no services are provided, harms could outweigh benefits with the identification of maltreatment.
Uncertainty or variability?	There is some uncertainty about the values and preferences, but generally it is agreed that it is important for health care providers to detect child maltreatment. The opportunity to refer a child once identified varies depending on the setting, as well as the availability of resources.
Feasibility (including resource use considerations)	No instruments have been evaluated for feasibility in the primary health care setting using measures of time, cost or others. Assessment of child maltreatment requires a clinician who is competent enough to ask the right questions and to respond appropriately. There is no evidence to support universal screening, nor is it feasible. Feasibility issues for case findings include access to training for clinicians and availability of referral resources.
Uncertainty or variability?	There is variability in the feasibility of assessing child maltreatment, depending on the availability of training and referral resources.



[New 2015]

Recommendation and remarks

Recommendation

Health care providers should be alert to the clinical features associated with child maltreatment and associated risk factors and assess for child maltreatment without putting the child at increased risk.

Rationale: Evidence supporting the efficacy of strategies for detecting maltreatment of children and youth within the context of mental health and developmental assessment is sparse and inconclusive. No studies have evaluated the performance of measures in predicting referrals and health outcomes. However, it is generally agreed that it is important for health care providers to detect child maltreatment. It is recognised that assessment of child maltreatment requires a clinician who is competent enough to ask the right questions and to respond appropriately.

Remarks

Inquiry into child maltreatment should occur in the context of case finding and diagnostic assessment by clinicians competent to do so, and should be followed by interventions, referral and/or follow up, where appropriate. Inquiry and following actions should take into account the availability of interventions, such as caregiver skills training, and services. There is no evidence to support universal screening or routine inquiry.

The strategies, including reporting and follow-up of the assessment should be culturally sensitive and should not allow violation of children's basic human rights according to internationally endorsed principles.

Examples of child maltreatment include physical abuse, sexual abuse, neglect, emotional abuse and all other forms of child maltreatment.

Judgements about the strength of a recommendation

Factor	Decision
Quality of the evidence	☐ High ☐ Moderate ☐ Low ☒ Very low
Balance of benefits versus harms	☒ Benefits clearly outweigh harms* ☐ Benefits and harms are balanced ☐ Potential harms clearly outweigh potential benefits <i>*Benefits likely outweigh harms</i>
Values and preferences	☒ No major variability ☐ Major variability
Resource use	☒ Less resource-intensive ☐ More resource-intensive
Others (Acceptability/Feasibility/Equity/Accessibility)	Feasibility of- and accessibility to competent clinicians who have received training in asking questions about exposure to child maltreatment within the context of mental health assessments.
Strength	CONDITIONAL

OTHER REFERENCES

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Web Annex 3a: Systematic Review – Psychosocial interventions for children exposed to maltreatment

Psychosocial Interventions for Children Exposed to Maltreatment: A Systematic Review

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Key Messages

- Child maltreatment, which can be defined as abuse (physical, sexual, emotional) or neglect that occurs to children under 18 years of age, is a major global public health problem, with many physical, emotional, and relationship short- and long-term health consequences across the lifespan, including mental health symptoms and disorders across childhood, adolescence, and adulthood
- The World Health Organization (WHO) guideline development group (GDG) is tasked with assisting in the creation of guidelines for service providers in the health sector who encounter and respond to cases of suspected child maltreatment. In order to do so, the GDG will consider evidence related to three main effectiveness questions (as well as a range of background questions, which are not discussed here): 1) the effectiveness of psychosocial and pharmacological interventions for children exposed to maltreatment, 2) the effectiveness of psychosocial and pharmacological interventions for adolescents and adults who maltreat children (summarized in a separate report), and 3) strategies for identifying children exposed to maltreatment (summarized in a separate report).
- The purpose of this report is to summarize the evidence related to the effectiveness of pharmacological and psychosocial interventions that treat children exposed to maltreatment. While rarely defined in the literature, psychosocial interventions usually refer to non-pharmacological interventions, such as psychoeducation or counseling interventions.
- As a previous WHO GDG group has already evaluated evidence specific to children exposed to sexual abuse, only interventions that address children's exposures to physical abuse, emotional abuse, and neglect are summarized in this report.
- Thirty-six articles representing 29 studies (randomized controlled trials) were included in this review.
- A variety of psychosocial interventions are addressed in this review, including 1) counseling/therapy interventions, 2) parenting interventions delivered in a) a clinic or community setting or b) a home setting (often referred to as home visiting interventions) and 3) child-focused skill development interventions.
- We have very low certainty in most of the evidence included in this review, due to serious concerns for risk of bias and very serious concerns for imprecision. Only the large SafeCare trial

and some aspects of parent-child interaction therapy (PCIT) were rated as moderate certainty evidence

- **Counseling/therapy interventions.** There is little evidence of effectiveness for counseling/therapy interventions for children exposed to maltreatment, although for children exposed to maltreatment (usually physical abuse, neglect, emotional abuse) we have very low certainty that preschooler-parent psychotherapy (PPT) may enable an increase in positive parent-child interaction. There is also mixed results for counseling/therapy interventions for children exposed to physical abuse and neglect, in that interventions a) seem to reduce some mental health symptoms but not others or b) do not reduce mental health symptoms at all. We do have very low certainty that individual parent and child cognitive behavioural therapy may enable small benefits in recurrence rates and may enable small reductions in internalizing and externalizing symptoms.
- **Parenting interventions, clinic or community setting.** We have very limited evidence in the effectiveness of parenting interventions delivered in a clinic- or community setting, with the exception of parent-child interaction therapy for physical abuse and neglect. For parent-child interaction therapy, we have moderate certainty evidence that it enables small benefits to internalizing and externalizing symptoms at post-treatment, and low certainty evidence that it enables small reductions in recurrence rates and small to large increases in positive parent-child interaction.
- **Parenting interventions, home-based.** For parenting interventions delivered in a home setting, we have moderate certainty evidence that SafeCare enables small reductions in recurrence rates for preschool children exposed to maltreatment, low certainty evidence that home visiting with a public health nurse may enable small reductions in recurrence rates for children (average age of 5 years) exposed to physical abuse and neglect, and very low certainty evidence that multisystemic therapy may enable small reductions in recurrence for children (ages 10-17) exposed to physical abuse, and that Project Support may enable small reductions in recurrence rates for children (ages 3-8) exposed to physical abuse and neglect. Other than this, evidence for the effectiveness of parenting interventions delivered in a home setting for children exposed to maltreatment is limited and conflicting, especially showing limited benefits to mental health symptoms.
- **Child-focused skill development.** We have very low certainty evidence that child-focused skill development interventions may enable reductions in internalizing and externalizing symptoms and behaviour problems at post-treatment.

Abstract

Background. In order to support the creation of guidelines for service providers in the health sector who encounter and respond to cases of suspected child maltreatment, this report addresses the effectiveness of psychosocial interventions for children exposed to maltreatment (specifically physical abuse, emotional abuse, and neglect, as child sexual abuse is addressed by a different GDG). **Method.** Systematic searches were conducted to retrieve any published randomized controlled trials of psychosocial or pharmacological interventions that addressed children exposed to physical abuse, emotional abuse, or neglect. Searches were conducted 10 databases from database inception until June 24, 2016. While the search terms used in the strategies were English, all languages were screened and were eligible for inclusion. Eligible outcomes for data extraction included child depression, anxiety, PTSD, externalizing symptoms, internalizing symptoms, subjective well-being, suicide ideation/behaviour, positive caregiver-child interaction, and reduction of caregiver involvement with authorities. The quality of studies was assessed using the Cochrane Risk of Bias tool and the overall certainty of the included evidence was assessed using GRADE criteria. **Setting:** All healthcare and social service settings were included. **Results.** Thirty-six articles representing 29 studies were included. No pharmacological interventions targeted at children exposed to maltreatment were found. Instead, a variety of psychosocial interventions are addressed in this review. The results indicate that there is very low certainty in the benefit of much of the psychosocial interventions for child maltreatment. Some parenting interventions delivered in a clinic or community setting, such as PCIT, improve parent-child interactions and other mental health outcomes. Some home-based parenting interventions, such as SafeCare, enable small reductions in recurrence rates. **Discussion.** These findings suggest that much work needs to be done to evaluate effective psychosocial interventions for children exposed to child maltreatment. Evidence about interventions for children exposed to neglect is particularly weak and evidence specific to children exposed to emotional abuse is entirely absent. Also absent in the included studies is any assessment of child suicidal ideation/behaviour or child subjective well-being, which the GDG ranked as essential for decision making.

1. Background

Child maltreatment, which can be defined as abuse (physical, sexual, emotional) or neglect that occurs to children under 18 years of age, is a major global public health problem, with many physical,

emotional, and relationship short- and long-term health consequences across the lifespan, such as injury and attachment disorders in infancy, academic failure and poor peer relationship in childhood, drug abuse in adolescence, relationship problems and maltreatment of one's own children in adulthood, and mental health symptoms and disorders across childhood, adolescence, and adulthood¹⁻⁵. Global estimates of child maltreatment indicate that a significant proportion of adults have experience child maltreatment as a child, including childhood physical abuse (22.6%), emotional abuse (36.3%), neglect (16.3%), and sexual abuse (18% of women and 7.6% of men)⁶⁻⁸. Furthermore, these forms of violence are often co-occurring,⁹ which can increase children's risk for impairment¹⁰⁻¹². The World Health Organization (WHO) guideline development group (GDG) is tasked with assisting in the creation of guidelines for service providers in the health sector who encounter and respond to cases of suspected child maltreatment. In order to do so, the GDG will consider evidence related to three main effectiveness questions (as well as a range of background questions, which are not discussed here): 1) the effectiveness of psychosocial and pharmacological interventions for children exposed to maltreatment, 2) the effectiveness of psychosocial and pharmacological interventions for adolescents and adults who maltreat children (summarized in a separate report), and 3) strategies for identifying children exposed to maltreatment (summarized in a separate report). The purpose of this report is to summarize the evidence related to the effectiveness of pharmacological and psychosocial interventions that treat children exposed to maltreatment. As a previous WHO GDG group has already evaluated evidence specific to children exposed to sexual abuse (guidelines specific to this process can be found here¹³), only interventions that address children's exposures to physical abuse, emotional abuse, and neglect are summarized in this report.

The Oxford English Dictionary defines the term "psychosocial" as "of or relating to the interrelation of social factors and individual thought and behaviour"¹⁴. In research literature, "psychosocial intervention" is rarely defined, but is often used to refer to non-pharmacological interventions, such as psychoeducation, psychotherapy, counseling, and eye-movement desensitization and reprocessing (EMDR) therapy. In addition to pharmacological interventions, the following types of psychosocial interventions are addressed in this review: 1. Counseling/therapy interventions, 2. Parenting interventions delivered in a clinic or community setting, 3. Parenting interventions delivered in a home setting (often referred to as home-visiting interventions), and 4. Child-focused skill development interventions. With a focus on these interventions, this review addresses the following broad questions:

- For children (0 to <18 years) exposed to CM and who are at risk of experiencing mental health difficulties (P), does psychosocial intervention A, compared to psychosocial intervention B or no psychosocial intervention (C), result in better child well-being outcomes (O)?
- For children (0 to <18 years) exposed to CM and who are at risk of experiencing mental health difficulties (P), does pharmacological intervention A, compared to pharmacological intervention B or no pharmacological intervention or pharmacological intervention B (C), result in better child well-being outcomes (O)?

2. Methods

In order to answer the above questions, a systematic review was conducted. A protocol for this review is registered with the online systematic review register, PROSPERO (PROSPERO 2016:CRD42016039656). In order to conduct this systematic review, the searches of a closely related review by the Agency for Healthcare Quality (AHRQ) were updated. This review, titled *Child Exposure to Trauma: Comparative Effectiveness of Interventions Addressing Maltreatment*,¹⁵ assessed the comparative effectiveness of interventions (psychosocial and/or pharmacological) for children age 0 to 14 exposed to maltreatment in addressing child wellbeing outcomes (mental and behavioral health; caregiver-child relationship; cognitive, language, and physical development; school-based functioning) and child welfare outcomes (safety, placement stability, and permanency). However, our search was broader than those listed in the AHRQ report in several ways.

- I. The AHRQ report did not include interventions for children over the age of 14, although their searches were sufficiently broad enough to capture this group (e.g., terms for “adolescents” were included in the search). Therefore, all studies in their report included under the “Wrong population” heading (n=203) were screened for potential inclusion.
- II. Their report also included only English-language references, so all non-English references (n=142) during the time period of their search (1990-May 2012) were screened.
- III. There was seen to be no clinically relevant reason to exclude studies older than 1990, so the search was extended to include all studies published before 1990.
- IV. An updated search was conducted (June 24, 2016) to capture studies published after the AHRQ search end date (May 2012).
- V. The AHRQ search was only run in PubMed, PsycINFO, and Web of Science. In order to ensure adequate subject coverage, including studies from low- and middle-income countries (LMICs) and non-English studies, additional databases beyond those in the AHRQ report were searched,

including Cochrane, Embase, CINAHL, Sociological Abstracts, ERIC, Social Work Abstracts, Social Services Abstracts, Criminal Justice Abstracts, ASSIA, Campbell Corporation, WHO Index Medicus (discussed below)

2.1. Inclusion Criteria

With these modifications, our report addresses the following PICO criteria:

- I. **Population:** Included studies had to include at least 80% children (0-17) exposed to child maltreatment, including physical abuse, neglect, or emotional abuse.
- II. **Intervention:** Included studies could address any psychosocial or pharmacological intervention.
- III. **Comparator:** Included studies could be any form of psychosocial/pharmacological intervention or no intervention.
- IV. **Outcomes:** In June/July 2015, the WHO child maltreatment guideline development group (GDG) and the VEGA CM evidence review group (ERG) ranked outcomes on a scale of 0-9, where 1-3 represent “unimportant” outcomes; 4-6 represent “important, but not critical outcomes” and 7-9 represent “critical” outcomes for decision-making. Rankings across these two groups were very similar and were combined to include the following nine essential outcomes: 1. Child depression, 2. Child anxiety, 3. Child subjective well-being, 4. Child internalizing symptoms, 5. Child externalizing symptoms, 6. Child PTSD, 7. Child suicidal ideation/behaviour, 8. Positive caregiver-child interaction, and 9. Reduction of caregiver involvement with authorities.
- V. **Study type:** While the AHRQ search included terms for RCTs & cohort studies, only RCTs were considered for inclusion in this review.
- VI. **Publication type:** Only published articles were considered for inclusion in this review.
- VII. **Setting:** Interventions from any country or setting were included.
- VIII. **Languages:** While the search terms used were English, all retrieved languages were screened and eligible for inclusion.
- IX. **Date range:** All dates until June 24th, 2016 (when search was executed).

2.2. Exclusion Criteria

Studies were excluded if they represented the wrong population, intervention, or study type.

- I. **Wrong population.** Studies that addressed general trauma (e.g., population exposed to maltreatment and other traumas, such as car accidents) were excluded. Studies that included a different population (e.g., depressed adolescents, general failure to thrive) were excluded,

including when they did secondary analysis specific to maltreatment were excluded. Studies that addressed primary prevention of child maltreatment (e.g., targeted at risk mothers) were excluded. Studies that addressed primarily child sexual abuse were addressed by the other guideline group.¹³

- II. **Wrong study design.** Non-RCTs were excluded, as were non-published studies, such as conference abstracts, books, and unpublished literature (such as dissertations).
- III. **Wrong outcomes.** Studies that did not address the child well-being and recurrence outcomes listed above were excluded (e.g., studies that addressed adult outcomes only).

2.3. Sources

To answer the above PICO questions, records were obtained through two sources:

- a. Database searching
- b. Citation chaining

2.3.1.Database searching

When translating AHRQ searches into additional databases suggested by the WHO librarian, the search strategy was kept as close as possible to the AHRQ PubMed search (i.e., direct translation of search strategy). However, for a few of the non-medical databases (Sociological Abstracts, ERIC, Social Work Abstracts, Social Sciences Abstracts, Criminal Justice Abstracts, ASSIA), only the child maltreatment terms and study design terms were used, as these databases did not contain any index terms for psychosocial interventions (see Appendix I).

2.3.2.Citation chaining

All included studies were subjected to citation chaining whereby all relevant citations in the articles were screened and potential relevant articles citing these studies (in Google Scholar) were screened (more details available from report author). Relevant systematic reviews and meta-analyses that were identified through citation chaining were also screened for relevant results.

2.4. Data extraction

For each included study, review team members extracted data about the population, study design, intervention, analysis and results for outcomes rated as essential through the GRADE outcome rating process. One team member completed full extraction (study characteristics and results) using electronic data extraction forms. A second team member then verified all extracted data; disagreements were

resolved through discussion and/or third party consultation when consensus could not be reached. All findings in text and tables were checked in a third round of verification.

2.5. Quality assessment

Studies were assessed using the Cochrane Review Manager Risk of Bias tool¹⁶. This rating tool covers six domains: sequence generation; allocation concealment; blinding of participants, personnel and outcome assessors; incomplete outcome reporting; selective outcome reporting; and other risk of bias (see Appendix II). For the other risk of bias domain, we examined significant baseline imbalance/differences on important characteristics between groups, contamination, and industry funding.

Information to determine risk of bias was extracted from the primary methodology paper for each study and any other related published papers (see Appendix II). For each study, one team member completed the initial ratings which were then verified by a second person; disagreements were resolved through discussion and/or third party consultation when consensus could not be reached. To assign a high or low risk of bias rating for a particular domain team members looked for explicit statements or other clear indications that the relevant methodological procedures were or were not followed. In the absence of such details, a rating of “unclear” was assigned to the applicable risk of bias domains. Study authors were not contacted to verify missing/unclear information.

For the risk of bias tool, the first two categories (sequence generation and blinding of participants/patients and providers/personnel) carry the most weight. A study can only be rated as an overall “low risk” of bias, if none of the individual domains are rated as high risk and the first two domains are low risk. A study is rated as an overall “unclear” risk of bias, if most of the domains are “unclear” and the first two domains are not high risk. A study is rated as an overall “high” risk of bias, if most of the domains are “unclear” or “high risk” and the first two domains are high risk as well. For example, most of the studies were silent about strategies for sequence generation, allocation methods, and blinding of outcome adjudicators and so were ranked as “unclear” for these domains. While studies may have one domain rated as “high” risk of bias, with overall “unclear” risk of bias across domains most studies were ranked overall as “unclear” risk of bias.

2.6. GRADE assessment

Evidence for each review included in this document was assessed using the GRADE system. The GRADE system rates the quality of a body of evidence as high, moderate, low or very low; each of the

four levels reflects the certainty in the evidence and the likelihood that further research will have an impact on the estimate of effect. High quality evidence means that we are very confident that the true effect lies close to that of the estimate of the effect, whereas moderate quality means we are moderately confident in the effect estimate and the true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different. Low quality means that our confidence in the effect estimate is limited and the true effect may be substantially different from the estimate of the effect. Very low quality means that we have very little confidence in the effect estimate and the true effect is likely to be substantially different from the estimate of effect.

A GRADE rating is based on an assessment of five domains: (1) risk of bias (limitations in study designs), (2) inconsistency (heterogeneity) in the direction and/or size of the estimates of effect, (3) indirectness of the body of evidence to the populations, interventions, comparators and/or outcomes of interest, (4) imprecision of results (few participants/events/observations, wide confidence intervals), and (5) indications of reporting or publication bias. A body of evidence based on RCTs begin with a high quality rating which may be downgraded for each of the five domains that are rated as “serious concern” or “very serious concern”. For example, with respect to risk of bias, if all (or the majority) of the studies were rated as low risk of bias, they would be categorized as “no serious concern”; if all (or the majority) of the studies were rated as unclear risk of bias, then that body of evidence would be categorized as “serious concern”; if all (or the majority) of the studies were rated as high risk of bias, then that body of evidence would be categorized as “very serious concern”. The majority of the evidence (which is based on RCTs) is rated as unclear risk of bias overall (or “serious concern”), so this would downgrade the body of evidence from high confidence to moderate confidence.¹⁶ (This body of evidence is downgraded further for other reasons, as discussed below.) As the GRADE assessment is interested in how future research might impact the estimate of effect, we did not downgrade for indirectness due to no included studies from low- and middle-income countries (LMICs) because we did not think that the effect size of an intervention conducted in a HIC would be lower in a LMIC context. Concerns about lack of evidence from LMICs are still important, however, and should be addressed in the acceptability and feasibility section of the evidence to decision table. For example, an intervention may not be culturally translatable. This may mean that a moderate certainty intervention with positive

¹⁶ Only one study was rated as overall low risk of bias (MacMillan 2005¹⁷) and only one study was rated as overall high risk of bias (Sullivan 1992¹⁸)

effects on child well-being outcomes may still not be recommended because it is not acceptable or feasible.

2.7. Data analysis

In order not to smooth out effects across intervention types and genders, the analysis has been segmented according to intervention type and gender. Where appropriate data were available, data synthesis was performed to pool the results. Otherwise we employed qualitative narrative synthesis of extracted data and results are reported according to intervention type.

For the purposes of presenting evidence as is standard in GRADE tables, some calculations were completed. For this review, the effect estimates were calculated as Mean Difference (MD) for continuous outcomes using single measures, Standardized Mean Difference (SMD) for continuous outcomes using multiple measures, and Odds Ratio (OR) for dichotomous outcomes.

The DerSimonian and Laird random effects model with inverse variance (IV) method was utilized to generate the summary measures of effect in the form of MD if outcome was reported using a single outcome measure or SMD if outcome was reported using multiple outcome measures.¹⁷ SMD was used as a summary statistic for outcomes reported using different scales or measures, as it is necessary to standardize the results of the studies to a uniform scale before they could be compared across studies or combined in a quantitative synthesis. MD and SMD were calculated using change from baseline to end-point data where possible; if baseline data was not provided, effect estimates were calculated using end-point/follow-up data. For studies that did not report baseline values, MDs were calculated using post-treatment or follow-up/end-point values. (Studies that reported only post-treatment data include: some data in Toth 2002¹⁹, Reams 1994²⁰, Deblinger 2011²¹, Sullivan 1992¹⁸, Cicchetti 2006²², Fantuzzo 1996²³, Moore 1998²⁴, Spieker 2012²⁵). For studies that did not report SD, we calculated this value from reported measures of variance such as standard error (SE) of the mean, the 95% confidence intervals (CI), and p-values or z-values using equations provided in chapter 7 and chapter 9 of the Cochrane Handbook for Systematic Reviews of Interventions²⁶. Findings from studies that reported no data for variance or no means were reported narratively. Studies (sometimes only part of studies) that were reported narratively include: Hyde 1995²⁷, Swenson 2010²⁸, Chaffin 2012²⁹, Brunk 1987³⁰, Nicol 1988³¹, Brown 2001³², Egan 1983³³, and Bernard 2015³⁴.

¹⁷ For an accessible video about the difference between MD and SMD from a public health perspective: <https://www.youtube.com/watch?v=X-UIZ1XE1JI>.

As SMD is not tied to any unit of measurement, it can be challenging to interpret the result. In general, SMD scores can range from -1 to +1. An SMD score of 0 can generally be interpreted to mean that the intervention had no effect. An SMD score that is closer to +1 or -1 could be a positive or negative finding depending on the outcome being measured. For example, the Beck Depression Inventory (BDI) has a total range of 0 to 63. A total BDI score of 10-18 indicates mild depression; 19-29 moderate depression, and 30-63 severe depression. A BDI SMD of -0.22 might indicate a small decrease in depression (in this case a more negative score indicates an improvement in the patient's symptoms). It is therefore essential to clearly indicate if increasing values show that a patient is getting better (e.g., depression is lessening) or worse (e.g., depression is worsening). Based on Cohen's rule of thumb,³⁵ an SMD value of 0.2 or less indicates a small effect, a value of 0.5 indicates a medium effect and a value of 0.8 or larger indicates a large effect.

An example of an MD calculation using change from baseline to end-point data follows. In the study by Foa and colleagues³⁶ PTSD is measured using the Child PTSD Symptom Scale–Interview (CPSS-I), where scores range from 0-51; 0-10, below threshold; 11-15, subclinical; 16-20, mild; 21-25, moderate; 26-30, moderately severe; 31-40, severe. In their study, the mean change in CPSS-I score (PTSD) from baseline to immediate-post treatment was -20.6 (27.3 - 6.7) for prolonged exposure group and -13.3 (29.4 - 16.1) for the supportive counselling group, resulting in a MD in change score of -7.30 (95% CI, range -10.60 to -4.0) favoring the prolonged exposure group. On average the measure of PTSD reduction in the group receiving prolonged exposure therapy was 7.3 points more than the reduction in PTSD measured in the conventional therapy group.

As most of the included studies are small, most studies report significant differences between on key outcomes across intervention and control groups at baseline. By calculating MD using change scores (differences between baseline and post-treatment data), we account for these differences across intervention and control groups. For example, suppose that an intervention group A had a baseline score of 65 on the Child Behaviour Checklist (CBCL) and control group B had baseline score of 58 on the CBCL (where higher scores indicate worse symptoms) and at post-treatment both groups had a CBCL score of 58. If we only used post-treatment data, we would report a MD score of 0 (58-58). However, if we calculate change scores from baseline to post-treatment for both groups (65-58=7 for group A; 58-58=0 for group B) we would find a baseline-post-treatment MD score of -7.0, suggesting a benefit for the intervention group. Thus, all MD scores discussed below represent change scores unless otherwise specified.

OR, finally, refers to the “ratio of the odds of an event”²⁶. Odds ratio is the odds of an event in the intervention group as a ratio of the odds of the event in the comparator group $[(Si/Sc) / (Fi / Fc)]$, see Table 1]. For example, Foa 2013³⁶ used clinical criteria for the Schedule for Affective Disorders and Schizophrenia for School-Age Children (K-SADS) to assess for PTSD diagnosis in the intervention group (prolonged exposure) and the controlled group (supportive counseling). At post-treatment, 21.6% (7/31) of the prolonged exposure group had a PTSD diagnosis compared to 55.2% (17/30) of supportive counseling group. The OR for this intervention, is 0.22 (95% CI, range 0.07 to 0.68) favoring prolonged exposure group. This means that the odds of a PTSD diagnosis in the prolonged exposure group was 0.22 times that of the other group (roughly one-fifth). To improve understanding of the odds ratio, the odds ratio was used to calculate what happens to children receiving prolonged therapy based on what happens to children receiving supportive counselling. For example, after supportive counselling 567 children per 1000 would be diagnosed with PTSD, but after prolonged exposure therapy 223 per 1000 would be diagnosed with PTSD.

Table 1. Calculating Odds Ratio (OR)			
	Events ("Success" (S) = no PTSD diagnosis)	No event ("Fail" (F) = PTSD diagnosis)	Total
Intervention group (i) (prolonged exposure)	Si (24)	Fi (7)	31
Control group (c) (supportive therapy)	Sc (17)	Fc (13)	30
Odds ratio = $[(Si/Sc) / (Fi/Fc)] = (24/17) / (7/13) = 0.22$			

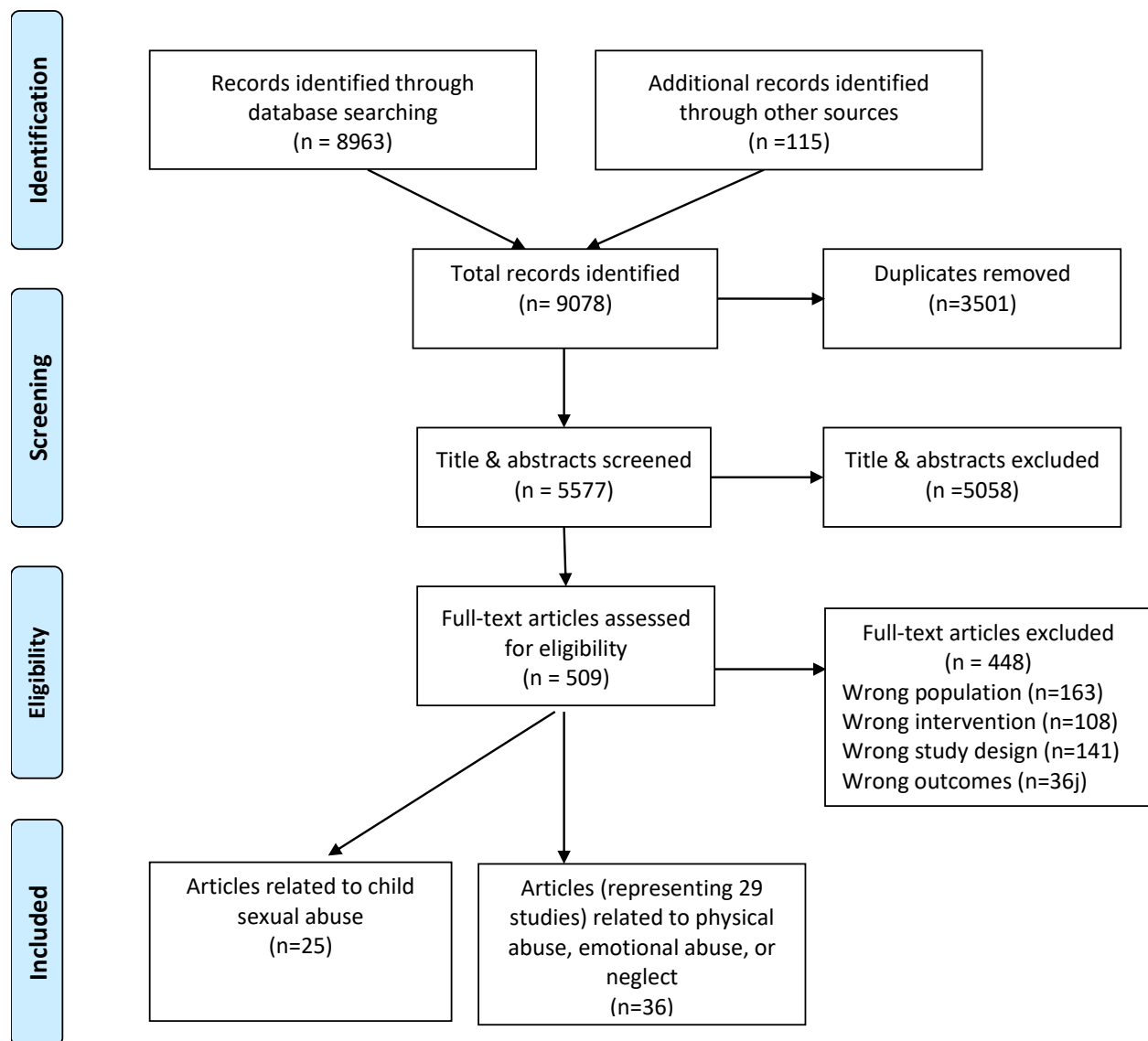
Finally, in order to characterize the size of the effect, calculated important difference values are shown in the GRADE tables following the description of the measures (e.g., SMD = -1.10). These differences follow Cohen’s rule of thumb, where an SMD value under 0.2 indicates no effect; a value of 0.2 to 0.49 indicates a small effect; a value of 0.5-0.79 indicates a medium effect; and a value of 0.8 and above a large effect. As such, a difference change score of -7.30 (with a calculated important difference of SMD = -1.10) could be characterized as a large benefit to PTSD symptoms for the prolonged exposure group.

3. Results

In total, 9078 records were identified through database searching and citation chaining, 5577 records were screened at the title and abstract level for inclusion, 509 full-text articles were screened

for inclusion, and 36 articles (representing 29 studies) were included in this review (see Figure 1). A list of excluded studies can be found in Appendix V. The rest of this report is segmented according to following interventions of interest: 1. Counseling/therapy interventions, 2. Parenting interventions delivered in a clinic or community setting, 3. Parenting interventions delivered in a home setting, and 4. Child focused skill development interventions.

Figure 1. PRISMA Diagram of Included Studies



3.1. Description of studies, GRADE assessment

All of the studies for the psychosocial interventions included in this report were RCTs. Study numbers across psychosocial interventions and maltreatment types were as follows: 13 studies addressed counseling/therapy interventions, six studies addressed parenting interventions in a clinic or community setting, 10 studies address parenting interventions in a home setting, and 2 studies addressed child focused skill development (see Table 2). Further discussion of included studies is found below.

GRADE assessment. Overall, much of the evidence included in this review is ranked as “very low” quality and was most often downgraded for serious risk of bias and very serious imprecision, because the number of children contributing to most outcomes was less than 300 (which makes the estimate of effect less precise), and confidence intervals around the effect included both no effect and important benefit/harm. More explicitly, this means that the body of evidence started as “high” quality (because only RCTs were included), but was downgraded to “moderate” quality due to serious concerns for risk of bias, then downgraded to “low” quality for small numbers of children contributing data and finally was downgraded to “very low” quality for serious concerns about imprecise effect sizes. Very low certainty evidence suggests that we have very little confidence in the effect estimate and the true effect is likely to be substantially different from the estimate of effect. It is likely that further research could have an impact on the estimate of effect.

Limited data on essential outcomes. No data was found about child suicidal ideation or behaviour or child subjective well-being. Also, very few studies reported data about if the interventions impacted recurrence rates. Finally, no adverse events related to the treatments were reported by the study authors.

Table #2. Summary of the quality and certainty of psychosocial interventions directed at children exposed to maltreatment

Abuse type	Country	Psychosocial intervention	Baseline N	Setting	Child Age	# RCTs	Quality	Certainty
		Counseling/therapy				26		
CM (multi-abuse)	U.S.	• Project Chrysalis ³²	1108	Com	A	6	U	-
	U.S.	• Child-parent psychotherapy ^{19,22}	113	Com, clin	T/P		U	VL
	U.S.	• Multi-family group therapy ³⁷	81	Com	T/P/S		U	VL
	U.S.	• Cognitive behavioral therapy (CBT) ³⁸	43	Clin	A		U	VL
	U.S.	• Play therapy ²⁰	41	Com	P		U	VL
PA & N	U.S.	• CBT ^{39,40}	159 (Families)	Clin	S	5	U	VL
	U.S.	• Family therapy ⁴⁰	55	Clin	S		U	VL
	UK	• Play therapy ³¹	38	Clin	I/T/P/S		U	VL
	JO	• CBT-TF ⁴¹	18	Clin	A		U	VL
	U.S.	• Cognitive behavioural training ⁴²	12	Com	A		U	VL
N	DE	• Dyadic music therapy ⁴³	19	Com	S	1	U	VL
		Parenting interventions						
		A) Clinic or community-based				6		
CM (multi-abuse)	U.S.	• Parent child interaction therapy ^{44,45}	301 (Dyads)	Clin	P	2	U	Moderate*
	U.S.	• Stress management ³³	41	Com	T/P/S		U	VL
PA & N	U.S.	• Parent child interaction therapy ^{46,47}	302 (Dyads)	Clin	T/P/S	1	U	Moderate*
N	U.S.	• Families actively improving relationships program ⁴⁸	31	Com	Not stated	1	U	VL
		B) Home-based				11		
CM (multi-abuse)	U.S.	• SafeCare ²⁹	2175	Home	P	8	U	Moderate
	U.S.	• Promoting first relationships ²⁵	210 (Dyads)	Home	I/T		U	VL
	CA	• Attachment oriented home visits ⁴⁹	89	Home	T/P		U	VL
	U.S.	• Psychoeducation home visits ¹⁹	64	Home	P		U	VL
	U.S.	• Psychoeducational parenting intervention ²²	53	Home	P		U	VL
	U.S.	• Multi-systemic therapy ³⁰	43 (Families)	Home	S		U	VL
PA & N	CA	• Home visits by nurses ¹⁷	163	Home	P	3	Low	Low
	U.S.	• Multi-systemic therapy ²⁸	86 (Dyads)	Home	S/A		U	VL
	U.S.	• Project Support ⁵⁰	35	Home	P/S		U	VL
	U.S.	• Internet-based interacting together everyday ⁵¹	9 (Families)	Home	P/S		U	VL
N		• Attachment & biobehavioural catchup ³⁴	40	Home	P/S		U	VL
		Child-focused skills training				2		
PA & N	U.S.	• Social skills training ^{23,52}	85	Comm	P	2	U	VL

CM=child maltreatment; PA & N=physical abuse & neglect; N=neglect-specific
U.S.=United States; UK=United Kingdom; JO=Jordan; DE=Denmark; CA=Canada

Com=Community; Clin=Clinic; Hom=Home-based

I=infant (0-1); T=toddler (1-3); P=Preschooler (3-5); S=school-aged (6-12); A=adolescent (13-17)

U=uncertain risk of bias

VL=very low certainty

*CBT-TF is moderate certainty for those trials that compared CBT-TF vs. non-CBT therapies (which we were able to pool). PCIT is moderate evidence for externalizing and externalizing symptoms, low certainty evidence for other outcomes of interest.

The results of this review are organized below according to intervention type then maltreatment type. Calculated important differences are presented in the GRADE tables following the description of the measures. These differences follows Cohen’s rule of thumb, where an SMD value under 0.2 indicates no effect; a value of 0.2 to 0.49 indicates a small effect; a value of 0.5-0.79 indicates a medium effect; and a value of 0.8 and above a large effect.

Counseling/therapy interventions

3.2. Counseling/therapy interventions

3.2.1. Child maltreatment

Participant and study characteristics. Six RCTs addressed counseling/therapy interventions for child maltreatment (participant and study characteristics can be found in Appendix III). These studies addressed a variety of intervention types (Project Chrysalis, child-parent psychotherapy, CBT, multifamily group therapy, and play therapy). Children with a ranged of abuse exposures where included in the studies, including physical abuse, neglect, emotional abuse, and sexual abuse. Notably, 58% of included children in Shirk’s 2014³⁸ CBT study had been exposed to parental IPV. Most interventions were delivered by masters or doctoral level therapists or psychologists. Most of the interventions were delivered to younger children (children under 12) (Cicchetti 2006²², Toth 2002¹⁹, Meezan 1998³⁷), including studies directed at infants (Cicchetti 2006²²) and preschoolers (Toth 2002¹⁹, Reams 1994²⁰). Two studies were delivered to adolescents (Brown 2001³², Shirk 2014³⁸). Sex of included children was mixed: the child-parent psychotherapy studies (Cicchetti 2006²², Toth 2002¹⁹) included approximately 50% boys and 50% girls, Shirk’s 2014³⁸ CBT study included a majority of adolescent girls, Brown’s 2001³² included only girls, and Ream’s 1994²⁰ play therapy intervention included a majority of boys. All studies took place in a high-income setting (the U.S.).

Risk of bias. The complete risk of bias table for the included studies is found in Appendix IV. Many of the studies did not state the use of a low-risk method of sequence generation (e.g., random number table) or a low-risk method of allocation concealment (e.g., centralized telephone), so were unclear or high risk in these areas. It is challenging to blind participants/providers in psychosocial interventions, so most studies had an unclear or high risk of bias for this category. Three of the studies (Shirk 2014³⁸, Brown 2001³², Meezan 1998³⁷) did not blind outcome assessors, making them unclear risk

of bias for this category. Three studies (Cicchetti 2006²², Toth 2002¹⁹, Brown 2001³²) had a high risk of bias for incomplete outcome data, as they didn't state a reason for why a high number of participants dropped out of the study. One study (Shirk 2014³⁸) was rated as having high risk of bias for selective reporting, as the authors reported that the Child Behaviour Checklist (CBCL) was administered at baseline and follow-up, but only baseline data is reported. This study (Shirk 2014³⁸) was also rated as having high risk of "other" bias, as there authors note that there was significant baseline differences between the two groups (the intervention group was significantly more likely to be prescribed psychotropic medicine compared to the control group). Overall, all six included studies were rated as unclear risk of bias.

GRADE assessments. Overall, the evidence included in this review is ranked as "very low" quality and was most often downgraded for serious risk of bias and very serious imprecision. Very low certainty evidence suggests that we have very little confidence in the effect estimate and the true effect is likely to be substantially different from the estimate of effect. It is likely that further research could have an impact on the estimate of effect.

Outcomes.

Project Chrysalis (1 study). One study (Brown 2001³²) investigated Project Chrysalis for adolescent girls (ages 14-18). For assessment of depression and suicidal risk, the authors did not use standardized measures and so the results should be interpreted with caution. The authors measures symptoms of depression and hopelessness by having participants to "report all the symptoms they felt nearly every day for a week or more during the past 12 months". To assess changes in depression, the authors summed the 14 items "to create one score with a higher score that reflected the presence of more symptoms". In terms of changes to depression, the authors report that "Throughout the study, Project Chrysalis had no effect on the reported number of depressive symptoms" In terms of suicide risk, participants in Project Chrysalis were asked an additional four questions about suicidal thoughts or attempts in the last year. The authors report that responses to these questions "were averaged to create a composite index representative of an overall suicide risk score". In terms of changes in suicidal risk/thoughts, the authors report that "No significant program effects were found immediately following participation in Project Chrysalis". Further, the authors suggest that Project Chrysalis session attendance and negative (lessening) suicide risk scores "reached significance at Follow-up 2 and was found to account for 2.2% of the variance associated with suicide-risk scores 2 years after participation in Project Chrysalis".

Child-parent psychotherapy vs. community control (2 studies). One study (Toth 2002¹⁹) examined preschooler-parent psychotherapy (PPP) for boys/girls (average age of 4 years) exposed to child maltreatment and another study (Cicchetti 2006²²) examined infant-parent psychotherapy (IPP) for infant boys/girls (average age of 13.31 months). Immediately post-treatment, we have very low certainty that PPP may enable a large increase in positive parent-child interaction (MD = 0.79, 95% CI, 0.35 to 1.23, P=0.0004). At 12-months follow-up, we have very low certainty that IPP shows no effect on internalizing symptoms (MD = 1.64, 95% CI, -3.52 to 6.80, P=0.53) or externalizing symptoms (MD = 1.05, 95% CI, -3.58 to 5.68, P=0.66). Overall, we have very low certainty that immediately post-treatment for boys/girls (average age of 4 years), PPP may enable a large increase in parent-child interaction; however, at 3-months follow-up, infant-parent psychotherapy for boys/girls (average age of 13.31 months) shows no effect on internalizing or externalizing symptoms.

Multi-family group therapy vs. traditional family therapy (1 study). One study (Meezan 1998³⁷) examined multi-family group therapy (MFGT) for children (ages 2-11) Immediately post-treatment, we have very low certainty that MFGT shows no effect on internalizing symptoms (MD = -0.45, 95% CI, -4.97 to 4.07, P=0.85), externalizing symptoms (MD = -0.66, 95% CI, -5.74 to 4.42, P=0.80), or depression (MD = 0.82, 95% CI, -2.01 to 3.65, P=0.57).

CBT vs. usual care (1 study). One study (Shirk 2014³⁸) examined CBT for adolescent boys/girls (average age of 15-16 years) exposed to sexual abuse, parental IPV, physical abuse, or emotional abuse. Note that this is the only study included that overlaps with the children's exposure to IPV guidance. Immediately post-treatment, we have very low certainty evidence that CBT may enable a small reduction in depression (MD = -4.33, 95% CI, -12.18 to 3.52, P=0.28).

Play therapy vs. control (1 study). One study (Reams 1994²⁰) examined play therapy vs. control for boys/girls (3.5-5 years) exposed to child maltreatment. Immediately post-treatment, we have very low certainty that play therapy has no effect on externalizing symptoms/behaviour problems (MD = 0.73, 95% CI, -5.69 to 7.15, P=0.82) or anxiety (MD = 0.32, 95% CI, -2.11 to 2.75, P=0.80). At 3-months follow-up, we have very low certainty that play therapy shows a small effect on externalizing symptoms (MD = -2.29, 95% CI, -8.71 to 4.13, P=0.48), but still has no effect on anxiety symptoms.

Summary: For children exposed to maltreatment, we have very low certainty that preschooler-parent psychotherapy (PPT) may enable a large positive increase in parent-child interaction (see Table 3). Aside from this finding, there is little evidence of effectiveness for psychotherapeutic interventions for children exposed to maltreatment.

3.2.2. Child physical abuse and neglect

Participant and study characteristics. Five RCTs addressed psychotherapeutic interventions for children exposed to physical abuse and neglect. Four of the studies were directed at children exposed to physical abuse only (Damra 2014⁴¹, Runyon 2010³⁹, Kolko 1996⁴⁰, Nicol 1988³¹) and one was directed at children exposed to physical abuse and neglect (LeSure-Lester 2002⁴²). Most of the included studies addressed a form of CBT, including CBT with a trauma focus (Damra 2014⁴¹), parent-child CBT (Runyon 2010³⁹), cognitive behavioural training (LeSure-Lester 2002⁴²), individual child or parent CBT (Kolko 1996⁴⁰). One of the included studies addressed play therapy (Nicol 1988³¹). Therapist training varied and included “experts” in counseling, masters trained counselors, social workers, and psychologists. Age ranges of children also varied with children ranging from infants to adolescents. Some studies focused on young people (ages 10 and up) (Damra 2014⁴¹, LeSure-Lester 2002⁴²) and some focusing on older and young children (ages 6-13) (Runyon 2010³⁹, Kolko 1996⁴⁰). The study by Nicol 1988 included infants and children up to age 14. For those studies that stated the sex of included children, two included only boys (Damra 2014⁴¹, LeSure-Lester 2002⁴²), one included mostly boys (Kolko 1996⁴⁰), and one included approximately 50% girls and boys (Runyon 2010³⁹). Four of the included studies took place in high-income settings, including the U.S. (Runyon 2010³⁹, Kolko 1996⁴⁰, LeSure-Lester 2002⁴²) and the UK (Nicol 1988³¹). One of the included studies (Damra 2014⁴¹) took place in an upper middle-income setting (Jordan).

Risk of bias. The complete risk of bias table can be found in Appendix IV. All studies did not state the use a low-risk method of sequence generation (e.g., random number table) or a low-risk method of allocation concealment (e.g., centralized telephone), so were unclear risk in these areas. It is challenging to blind participants/providers in psychosocial interventions, so all studies were unclear risk of bias for this category (i.e., authors were silent about blinding). Blinding of outcome assessment involves both the a) evaluators and b) the patients being blinded for assessment. Four of the studies (Kolko 1996⁴⁰, Damra 2014⁴¹, LeSure-Lester 2002⁴², and Nicol 1988³¹) were silent about whether blinding occurred for both patients and evaluators, making them unclear risk. One of the studies (Runyon 2010³⁹) explicitly stated that participants were told about their therapy, indicating clearly that blinding did not occur (making them high risk). Two of the studies (Runyon 2010³⁹, Nicol 1988³¹) were high risk of bias for incomplete outcomes, as there was no rationale offered for high rates of participant drop out. All five studies were low risk of bias for selective reporting. Overall, all five studies are unclear risk of bias.

GRADE assessments. Overall, the evidence can be considered “very low” quality and was downgraded for serious risk of bias and serious imprecision. Very low certainty evidence suggests that we have very little confidence in the effect estimate and that the true effect is likely to be substantially different from the estimate of effect. It is likely that further research could have an impact on the estimate of effect.

Outcomes.

Individual parent-child CBT vs. routine community services (1 study). One study (Kolko 1996⁴⁰) reported about individual child-parent CBT vs. routine community services for boys/girls (ages 6-13) exposed to physical abuse. We have very low certainty that immediately post-treatment, individual parent-child CBT may enable a reduction in internalizing symptoms (MD = -5.6, 95% CI, -12.79 to 1.59, P=0.13) and a small reduction in externalizing symptoms (MD = -3.3, 95% CI, -11.09 to 4.49, P=0.41); however, the control group (routine community services) shows a small but greater reduction in depression (MD = 2, 95% CI, -2.13 to 6.13, P=0.34) at this time point. We have very low certainty that 20% of people report maltreatment in routine services compared with 5% in the individual parent-child CBT group (for a difference of 15%). At 3-months follow-up, we have very low certainty that individual parent-child CBT may enable a large reduction in internalizing symptoms (MD = -10.3, 95% CI, -19.34 to -2.26, P=0.01), as well as a reduction in externalizing symptoms (MD = -5, 95% CI, -12.68 to 2.68, P=0.20); the control group (routine community services) shows a greater reduction in depression (MD = 2, 95% CI, -1.38 to 5.38, P=0.25) at this time point. At 12-months follow-up, we have very low certainty that individual parent-child CBT may enable a small reduction in internalizing (MD = -3.1, 95% CI, -10.57 to 4.37, P=0.42) and externalizing symptoms (MD = -4.1, 95% CI, -12.93 to 4.73, P = 0.36); the control group shows small but greater reductions in depression (MD = 1.3, 95% CI, -2.12 to 4.72, P = 0.46) at this time point. At 12-month follow-up, we have very low certainty that re-report rates (including substantiated reports) for the routine community services group were 250 per 1000 compared to 80 per 1000 for the individual child and parent CBT group (for a difference of 170).

Combined parent-child CBT vs. parent-only CBT (1 study). One study (Runyon 2010³⁹) reports about combined parent-child CBT vs. parent-only CBT for boys/girls (ages 7 to 13). We have very low certainty that immediately post-treatment, combined parent-child CBT may enable a large reduction in PTSD symptoms (MD = 1.25, 95% CI, -2.06 to -0.44, P=0.002); however, the control group (parent-only CBT) shows a small but greater reduction in internalizing symptoms (MD = 1.38, 95% CI, -1.35 to 4.11, P=0.32) and externalizing symptoms (MD = 3.27, 95% CI, -0.77 to 7.31, P=0.11) at this time point.

Play therapy vs. focused case work (1 study). One study (Nicol 1988³¹) reported about play therapy vs. focused case work for children (ages 0-14) exposed to physical abuse. Family interaction was assessed using the Family Interaction Coding System, where researchers code 29 clearly defined behavioral categories (prosocial and aggressive behaviours) in 6 second segments. Each family member is a “target” for a block of consecutive observations lasting 5 minutes. Immediately post-treatment, we have very low certainty that there is no effect on positive behaviours in either the play session group or the focused casework group, but that the focused casework significantly lessened coercive behaviours from before to after treatment ($p < 0.05$). These effects are only found when family members are looked at together; effects disappear when mothers, fathers, and children are examined separately.

CBT with a trauma focus vs. wait list (1 study). One study (Damra 2014⁴¹) reported about CBT with a trauma focus vs. wait list for adolescent boys (10-12 years) exposed to physical abuse. Immediately post-treatment, we have very low certainty that CBT with a trauma focus may enable a large reduction in PTSD symptoms (MD = -10.31, 95% CI, -11.29 to -9.33, $P < 0.00001$) and depression (MD = -16.1, 95% CI, -18.55 to -13.65, $P < 0.00001$). At 4-months follow-up, we have very low certainty that this large effect in PTSD and depression is still seen.

Family therapy vs. routine community services (1 study). One study (Kolko 1996⁴⁰) reported about family therapy vs. routine community services for boys/girls (6-13). We have very low certainty that immediately post-treatment family therapy shows no effect on internalizing or externalizing symptoms and that the control group (routine community services) shows a small but greater reduction in depression (MD = 1.8, 95% CI, -2.51 to 6.11, $P = 0.41$) at this time point. We have very low certainty that 20% of people report maltreatment in routine services compared with 6% in the individual parent-child CBT group (for a difference of 14%). At 3-month follow-up, we have very low certainty that family therapy may enable a reduction in internalizing symptoms (MD = -7.2, 95% CI, -15.17 to 0.77, $P = 0.08$) and no effect on externalizing symptoms; the control group also shows a greater reduction in depression (MD = 2.3, 95% CI, -1.42 to 6.02, $P = 0.47$) at this time point. At 12-months follow-up, family therapy may enable a reduction in externalizing symptoms (MD = -6.2, 95% CI, -14.9 to 2.5, $P = 0.16$), but no effect on internalizing symptoms; the control group shows a very small but greater reduction in depression at this time point. At 12-month follow-up, we have very low certainty that re-report rates (including substantiated reports) for the routine community services group were 250 per 1000 compare to 112 per 1000 for the family therapy group (for a difference of 138 per 1000).

Cognitive behavioural training vs. non-skilled/active listening (1 study). One study (LeSure-Lester 2002⁴²) reported about cognitive behavioural training vs. non-skilled/active listening for adolescent boys (12-16 years). Immediately post-treatment, we have very low certainty that cognitive behavioural training may enable a large reduction in externalizing symptoms (MD = -0.67, 95% CI, -1.06 to -0.28, P=0.0007).

Summary. For children exposed to physical abuse and neglect, we have very low certainty that some of the cognitive behavioural therapies (CBT) may reduce PTSD and depression at post-treatment and longest follow-up (see Table 3). For example, combined parent-child CBT shows large reductions in PTSD symptoms at post-treatment and CBT with a trauma focus (results for boys only) shows large reductions in PTSD symptoms and depression at post-treatment and 4-month follow-up. Cognitive behavioural training (results for boys only) may enable a large reduction in externalizing symptoms at post-treatment.

3.2.3. Child neglect

Participant and study characteristics. One study (Jacobsen 2014⁴³) which took place in Denmark reported Dyadic Music Therapy for children (ages 5-7) exposed to neglect.

Risk of bias. This study is overall ranked as unclear risk of bias, mainly because the study authors did not explicitly state the use a low-risk method of sequence generation (e.g., random number table), or a low-risk method of allocation concealment (e.g., centralized telephone). Jacobsen 2014⁴³ is high risk of bias for blinding of patients/providers, as one of the music therapists was also the researcher (and thus not blind to allocation).

GRADE assessment. Overall, this evidence can be considered “very low” quality, downgraded for serious risk of bias and very serious imprecision. Very low certainty evidence suggests that we have very little confidence in the effect estimate and that the true effect is likely to be substantially different from the estimate of effect. It is likely that further research could have an impact on the estimate of effect.

Outcomes.

Dyadic music therapy vs. treatment as usual (1 study). One study (Jacobsen 2014⁴³) assessed Dyadic music therapy vs. treatment as usual for girls/boys (ages 5-12 years) exposed to neglect. Immediately post-treatment, we have very low certainty that Dyadic music therapy may enable a small increase in positive parent behaviour/response (MD = 0.78, 95% CI, -1.44 to 3, P=0.49). However,

immediately post-treatment the control group (vs. Dyadic music therapy) shows a very small, but greater decrease in negative parent behaviour/response (MD = 0.34, 95% CI, -1.15 to 1.83, P=0.66). Overall, for girls boys (ages 5-12), we have very low certainty that immediately post-treatment Dyadic music therapy may increase positive parent behaviour/response; however, the control group's rate of decreasing negative parent behaviour/response was greater.

Summary of counseling/therapy interventions. For children exposed to maltreatment (usually physical abuse, neglect, emotional abuse), we have very low certainty that preschooler-parent psychotherapy (PPT) may enable a large positive increase in parent-child interaction. Aside from this finding, there is little evidence of effectiveness for counseling/therapy interventions for children exposed to maltreatment. For children exposed to physical abuse and neglect, we have very low certainty that individual parent and child cognitive behavioural therapy may enable small benefits in recurrence rates and may enable small reductions in internalizing and externalizing symptoms. Other than this finding, counseling/therapy interventions for children exposed to physical abuse and neglect show limited or mixed results.

Table 3. Summary of symptom change [large (L), medium (M), small (S), and no effect (N)] in counseling/therapy interventions for exposure child maltreatment at post-treatment (PT) or longest month (mo) follow-up

Note: We have very low certainty in all evidence

Note: We have very low certainty in all evidence.

Counseling/therapy	N	Internalizing symptoms												Externalizing				Parent-child interaction				Recurrence			
		Internalizing				Depression				Anxiety				PTSD											
		N	S	M	L	N	S	M	L	N	S	M	L	N	S	M	L	N	S	M	L	N	S	M	L
Child maltreatment																									
PC vs. C (PT)	1108					x																			
IPP vs. CC (12-mo)	113	x												x											
MFGT vs. TFT	81																								
PPP vs. CC (PT)	53																						x		
CBT vs. UC (PT)	43						x																		
PT vs. C (PT)	41									x					x										
--PT vs. C (3-mo)	41									x						x									
Physical abuse & neglect																									
C-CBT vs. P-CBT (PT) *	44 D												x												
PT vs. FCW	38 F																								
I-CBT vs. RCS (PT) *	33				x			≠								x									
--I-CBT vs. RCS (12-mo) *	33			x				≠								x								x	
FT vs. RCT (PT) *	29		x												x										
--FT vs. RCS (12-mo) *	29		x														x								x
CBT-TF vs. WL (PT) ^B	18							x					x												
--CBT-TF vs. WL (4-mo) ^B	18							x					x												
CT vs. AL (PT) ^B	12																x								
Neglect-specific																									
DMT vs. TAU*	19															≠				x/ ≠					
^G =Girls only; ^B =Boys only D=Dyads; F=Families																									

For child maltreatment therapies: PC=Project Chrysalis; C=Control; IPP=infant-parent psychotherapy; CC=community control; MFGT=multi-family group therapy; TFT=traditional family therapy; PPT=preschooler-parent psychotherapy; CBT=cognitive behavioural therapy; UC=usual care; PT=play therapy

For physical abuse and neglect therapies: C-CBT=combined parent-child CBT; PT=play therapy; FCW=focused case work; I-CBT= Individual child-parent cognitive behavioural therapy; RCS=routine community services; FT=family therapy; CBT-TF=cognitive behavioural therapy with a trauma focus; CT= cognitive behavioural training; AL=non-skilled/active listening group.

Note: For I-CBT vs. RCS (12-mo) the control group shows a small but greater reduction in depression symptoms at this time point. For C-CBT vs. P-CBT (PT), the control group shows a small but greater reduction in internalizing symptoms, externalizing symptoms. For FT vs. RCS (PT), the control group shows a small but greater reduction in depression. For FT vs. RCS (12-mo), the control group shows a very small but greater reduction in depression.

For neglect-specific therapies:

Note: For DMT vs. TAU the control group shows a very small but greater reduction in negative parent behaviour.

3.3. Parenting interventions, Clinic or community

3.3.1. Child maltreatment

Participant and study characteristics. Three studies (all RCTs) used parenting interventions delivered in a clinic or community setting to address exposure to child maltreatment (see Appendix III for study characteristics). Two studies examined parent-child interaction therapy (Thomas 2011⁴⁴, 2012⁴⁵) and one study addressed stress management (Egan 1983³³). Children in one of the studies were an average of 4-5 years old (Thomas 2011⁴⁴, 2012⁴⁵) and in the other study they were from 2 to 14 years of age (Egan 1983³³). Both studies took place in high-income countries, including the U.S. (Egan 1983³³) and Australia (Thomas 2011⁴⁴, 2012⁴⁵).

Risk of bias. The complete risk of bias table can be found in Appendix IV. The included studies did not state the use a low-risk method of sequence generation (e.g., random number table) or a low-risk method of allocation concealment (e.g., centralized telephone), so were unclear risk in these areas. It is challenging to blind participants/providers in psychosocial interventions, so both studies were unclear risk of bias for this category (i.e., authors were silent about blinding). Blinding of outcome assessment involves both the a) evaluators and b) the patients being blinded for assessment. Two of the studies (Thomas 2011⁴⁴, 2012⁴⁵) were silent about whether blinding occurred for both patients and evaluators, making them unclear risk. One of the studies (Thomas 2012⁴⁵) was high risk of bias for incomplete outcomes, as there was no rationale offered for high rates of participant drop out. Overall, all four studies are unclear risk of bias.

GRADE assessments. Information about parent child interaction therapy was pooled across maltreatment types (child maltreatment & physical abuse/neglect) for evidence about externalizing and internalizing symptoms. This evidence can be considered “moderate”, as it was only downgraded for serious risk of bias. Moderate quality evidence means that we are moderately confident in the effect estimate and the true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different. Otherwise the evidence was “low” quality, downgraded for serious risk of bias and imprecision or “very low” quality, downgraded for serious risk of bias and very serious imprecision. Low certainty evidence suggests that our confidence in the effect estimate is limited and the true effect may be substantially different from the estimate of the effect and very low certainty

evidence suggests that we have very little confidence in the effect estimate and that the true effect is likely to be substantially different from the estimate of effect. It is likely that further research could have an impact on the estimate of effect.

Outcomes & Summary.

Parent child interaction therapy (3 studies). Three studies reported on parent-child interaction therapy (vs. control) for boys/girls (average age of 5 years) exposed to child maltreatment (Thomas 2011⁴⁴, 2012⁴⁵) or parent-child interaction therapy (vs. standard community-based parenting group) for children exposed to physical or for children (2.5-12 years) exposed to physical abuse and neglect (Chaffin 2004⁴⁶). Only the pooled results for Chaffin 2004⁴⁶ are discussed here; other results are discussed below. Immediately post-treatment, we have moderate confidence that parent-child interaction therapy enables a small reduction in internalizing symptoms (SMD = -0.32, 95% CI, -0.55 to -0.09, P=0.003) and a small reduction in externalizing symptoms (SMD = -0.47, 95% CI, -0.70 to -0.24, P=0.0001). For parent-child interaction, these studies used the Dyadic Parent–Child Interaction Coding System Revised (DPICS-R) where researchers can observe and code up to 24 parent or child behaviors. Observation coding is continuous and results in the total frequency of each behavior per 5-minute interval. In this study positive behaviours include praise and reflections and negative behaviours include commands and questions. For children exposed to child maltreatment immediately post-treatment, we have low certainty that parent-child interaction therapy may enable a large increase in caregivers' praising behaviour (MD = 9.19, 95% CI, 7.05 to 11.34, P=0.00001), caregivers' positive reflective behaviour (MD = 14.35, 95% CI, 10.75 to 17.96, P=0.00001), as well as a reduction in caregivers' use of commands (MD = -3.6, 95% CI, -1.83 to -5.38, P=0.0001) and a large reduction in caregivers' use of questions (MD = -18.49, -16.04 to -20.94, P=0.00001). Overall, we have moderate certainty that for boys/girls (ages 2-12) that immediately post-treatment parent-child interaction therapy reduces internalizing and externalizing symptoms and children exposed to child maltreatment or physical abuse/neglect. We have low certainty that for boys/girls (average age of 5) immediately post-treatment parent-child interaction therapy may enable an increase in caregivers' praising and positive reflective behaviour and reduce caregivers' use of commands and questions (negative parenting behaviour) in children exposed to maltreatment.

Stress management vs. treatment as usual (1 study). One study (Egan 1983³³) assessed stress management, child management, or stress/child management vs. treatment as usual for children (ages 2-14 years). For this study, no measure of variance (standard deviation or standard error) was reported

for any outcomes of interest, hence results are being reported narratively. Child state-trait anxiety was measured using the State-Trait Anxiety Inventory and caregiver-child interaction was measured through observations of caregiver-child behaviour, which was coded for a) positive verbal responses, such as praise; b) negative verbal responses, such as attacks and commands; c) positive action responses, such as parental/child positive affect; and d) negative action responses, such as severe negative discipline, or punitive restraint. For the stress management group vs. treatment as usual at post-treatment, this study reported benefit favoring intervention group for parental positive affect (post-treatment mean 5.63 vs. 3.84; $p < 0.05$), verbal command (post-treatment mean 9.85 vs. 7.98; $p < 0.05$), child positive affect (post-treatment mean 4.81 vs. 3.37; $p < 0.01$) and positive verbal response (post-treatment mean 0.41 vs. 0.29; $p < 0.05$). For the child management group vs. treatment as usual, at post-treatment this study reported benefit favouring the intervention group for child positive affect (post-treatment mean 2.12 vs. 2.97; $p < 0.001$) and comply followed by positive verbal responses (post-treatment mean 1.69 vs. 1.40; $p < 0.05$). No benefit to state-trait anxiety was reported by either group.

3.3.2. Child physical abuse and neglect

Participant and study characteristics. Two studies (both RCTs) used a parent-child interaction therapy to address physical abuse only (Chaffin 2004⁴⁶) or physical abuse and neglect (Chaffin 2009⁴⁷) (see Appendix III for study characteristics). Both studies were delivered by master's level therapists. Sex of included children was not stated in either study; the age range of children ranged from 4 to 12 years in the other study (Chaffin 2004⁴⁶) and 2.5 to 12 years in the other study (Chaffin 2009⁴⁷). Both studies took place in the U.S.

Risk of bias. Overall, the two included studies were unclear risk of bias, mainly because the study authors did not explicitly state the use a low-risk method of sequence generation (e.g., random number table), or a low-risk method of allocation concealment (e.g., centralized telephone).

GRADE assessments. As stated above, this evidence can be considered "moderate", as it was only downgraded for serious risk of bias.

Outcomes & Summary.

Parent child interaction therapy vs. standard of care (1 study). One study (Chaffin 2004⁴⁶) examined parent-child interaction therapy or enhanced parent-child interaction therapy (where caregivers received standard parent-child interaction therapy plus attention to services targeting parental depression, substance use, or family conflict/violence) vs. standard community-based

parenting group) for children (4-12 years) exposed to physical abuse. For both arms of this study they measured parent-child interaction using the DPICS-R (discussed above); however, they reported overall positive parent behaviour and overall negative parent behaviour. **Standard parent-child interaction therapy:** Immediately post-treatment, we have very low certainty evidence that standard parent-child interaction therapy may enable a small increase in positive parent behaviour (MD = 18, 95% CI, -10.34 to 46.34, P=0.21) and a large reduction in negative parent behaviour (MD = -18, 95% CI, -10.53 to -25.47, P=0.00001). As discussed above, we have moderate confidence that standard parent-child interaction therapy enables a small reduction in internalizing symptoms and a small reduction in externalizing symptoms. At a mean of 850 days (just under 2 years), we have very low certainty that children in the standard community care group had re-report rates of 486 per 1000 compared to 191 per 1000 in the parent-child interaction therapy group (for a difference of 295). At a mean of 850 days, we have very low certainty that children in the enhanced parent-child interaction therapy group had a re-report rate of 486 per 1000 compared to 366 per 1000 (for a difference of 120 per 1000). **Enhanced parent-child interaction therapy.** Immediately post-treatment, we have very low certainty evidence that enhanced parent-child interaction therapy may enable a small reduction in internalizing symptoms (MD = -6.6, 95% CI, -0.11 to -13.09, P=0.05), no effect on externalizing symptoms (MD = -0.8, 95% CI, -4.74 to 3.14, P=0.69), as well as a small increase in positive parent behaviour (MD = 9.15, 95% CI, -9.15 to 59.15, P=0.15) and a large decrease in negative parent behaviour (MD= -16, 95% CI, -8.3 to -23.7, P=0.001). Overall, we have very low certainty that for children (ages 2.5-12 years) immediately post-treatment, standard parent-child interaction therapy may reduce internalizing symptoms, externalizing symptoms, and negative behaviour, and may increase positive parent behaviour. We have very low certainty evidence that immediately post-treatment enhanced parent-child interaction therapy may reduce internalizing symptoms (but not externalizing symptoms) and negative parent behaviour, as well as increase positive parent behaviour.

Parent child interaction with or without motivational orientation vs. standard didactic parenting intervention with or without motivational orientation (1 study). One study (Chaffin 2009⁴⁷) compared parent-child interaction therapy with or without a motivational orientation (loosely based on motivational interviewing) to standard didactic parenting intervention with or without motivational interviewing for children (2.5 to 12 years) exposed to physical abuse or neglect.

3.3.3. Child neglect

Participants and study characteristics. One study (an RCT) addressed a multi-component intervention – Families Actively Improving Relationships (Saldana 2015⁴⁸) (see Appendix IV for study details). This intervention was carried out in the U.S. by counselors, skills coaches, and resources builders (education level not stated).

Risk of bias. Overall, this study was unclear risk of bias, mainly because the study authors did not explicitly state the use of a low-risk method of sequence generation (e.g., random number table), or a low-risk method of allocation concealment (e.g., centralized telephone). This study is rated as high risk of bias for incomplete outcome data, as dropout rates were higher than 10% with no rationale and intention to treat analysis was not stated.

GRADE assessments. Overall, this study can be considered to be “very low” certainty and was downgraded for serious risk of bias and serious imprecision. Very low certainty evidence suggests that we have very little confidence in the effect estimate and that the true effect is likely to be substantially different from the estimate of effect. It is likely that further research could have an impact on the estimate of effect.

Outcomes & Summary.

Families Actively Improving Relationships Program (FAIR) vs. treatment as usual (1 study).

One study (Saldana 2015⁴⁸) reported on FAIR vs. treatment as usual (children sex/gender not specified). Immediately post-treatment and at 6-month follow-up, we have very low certainty that FAIR may enable a large reduction in externalizing symptoms (MD 6-month = -8.56, 95% CI, -15.81 to -1.31, P=0.01).

Summary of parenting interventions delivered in a clinic or community setting. We have very limited evidence in the effectiveness of parenting interventions delivered in a clinic- or community setting, with the exception of parent-child interaction therapy for physical abuse and neglect (see Table 4). For parent-child interaction therapy, we have moderate certainty evidence that it enables small benefits to internalizing and externalizing symptoms at post-treatment, and low certainty evidence that it enables small reductions in recurrence rates and small to large increases in positive parent-child interaction.

Table 4. Summary of symptom change [large (L), medium (M), small (S), and no effect (N)] in parenting interventions delivered in a clinic or community setting for exposure child maltreatment at post-treatment (PT) or longest month (mo) follow-up

Note: We have very low certainty in all evidence except evidence for PCIT (internalizing and externalizing symptoms), which is moderate certainty*

Parenting, Clinic or Community	N	Internalizing symptoms												Externalizing				Parent-child interaction				Recurrence				
		Internalizing				Depression				Anxiety				PTSD												
		N	S	M	L	N	S	M	L	N	S	M	L	N	S	M	L	N	S	M	L	N	S	M	L	
Child maltreatment																										
PCIT vs. C (PT)				X											X					X	X	X			X	
SM vs TAU †																			X							
Physical abuse & neglect																										
E-PCIT vs. C (PT)				X											X					X			X			X
Neglect																										
FAIR vs. TAU (PT)																					X					
• FAIR vs. TAU (6-mo)																					X					
*PCIT is moderate certainty evidence for internalizing and externalizing symptoms, † Note that SM vs. TAU did not provide information that could be put into the GRADE tables. Refer to the report for more details.																										

3.4. Parenting interventions, Home-based

3.4.1. Child maltreatment

Participant and study characteristics. Six studies (RCTs) used home visiting interventions for children exposed to child maltreatment (see Appendix III for study characteristics). A variety of interventions were used, including SafeCare (Chaffin 2012²⁹), Promoting First Relationships (Spieker 2012²⁵), was attachment oriented home visits (Moss 2011⁴⁹), psychoeducational home visiting (Toth 2002¹⁹), psychoeducational parenting intervention (Cicchetti 2006²²), and multisystemic therapy (Brunk 1987³⁰). When stated, interventions were delivered by individuals with bachelor's and master's level or master's level training. Children in this group tended to be younger, either infants or toddlers (Spieker 2012²⁵, Toth 2002¹⁹, Cicchetti 2006²²) or preschoolers (Chaffin 2012²⁹). Only one study looked at school aged children (average age of 6.8 or 9.8 years, Brunk 1987³⁰). All studies took place in high-income countries, including the U.S. (Chaffin 2012²⁹, Spieker 2012²⁵, Toth 2002¹⁹, Cicchetti 2006²², Brunk 1987³⁰) and Canada (Moss 2011⁴⁹)

Risk of bias. Overall, all of the studies were unclear risk of bias, mainly because the one study did not state the use of a low risk method of allocation concealment (e.g., centralized telephone) and all three studies did not explicitly state the use a low-risk method of sequence generation (e.g., random number table). One study (Toth 2002¹⁹) was high risk of bias for incomplete outcome data as dropout rates were higher than 10% with no rationale and intention to treat analysis was not stated. One study (Brunk 1987³⁰) was rated as high risk of bias for selective reporting, as the study authors indicate that the Behavior Problem Checklist was used to measure child behaviour, but results are not reported. This study (Brunk 1987³⁰) was also rated as high risk for "other" bias, as significant baseline differences between groups were found for child and parent age.

GRADE assessments. Overall, except for SafeCare, which is ranked as moderate risk of bias, this evidence can be considered to be "very low" certainty and was downgraded for serious risk of bias and very serious imprecision. Very low certainty evidence suggests that we have very little confidence in the effect estimate and the true effect is likely to be substantially different from the estimate of effect. It is likely that further research could have an impact on the estimate of effect.

Outcomes & Summary.

Safe Care vs. services as usual (1 study). One study (Chaffin 2012²⁹) investigated Safe Care vs. home-based services as usual. At 12-month follow-up (mean of 6 years assessed), we have moderate certainty that the services as usual group will experience recidivism at a rate of 450 per 1000 compared to 391 per 1000 in the SafeCare group (for a difference of 59 per 1000).

Promoting First Relationships vs. early education support (1 study). One study (Spieker 2012²⁵) reported on Promoting First Relationships vs. early education support for girls/boys (ages 10-24 months). Immediately post-treatment, we have very low certainty that Promoting First Relationships enables an increase in sensitivity in parent-child interaction (MD = 1.49, 95% CI, 0.67-2.31, P=0.0004). At 6-months, we have very low certainty that Promoting First Relationships shows a small increase in sensitivity in parent-child interaction (MD = 0.87, 95% CI, -0.03 to 1.77, P=0.06). Immediately post-treatment, we have very low certainty that Promoting First Relationships shows no effect on supportive parent-child interactions (MD = -0.06, 95% CI, -0.15 to 0.03, P=0.21). At 6-months, we have very low certainty that Promoting First Relationships shows no effect on internalizing (MD = -0.06, 95% CI, -2.04 to 1.72, P=0.87) or externalizing symptoms (MD = -1.07, 95% CI, -4 to 1.86, P=0.47) and no effect on supportive parent-child interactions. Note that for internalizing symptoms at 6-month follow-up, only post-treatment values are offered (i.e., no baseline values). Overall, we have very low certainty that Promoting First Relationships may increase maternal sensitivity at post-treatment and 6-month follow-up.

Attachment oriented home visits vs. standard care (1 study). One study (Moss 2011⁴⁹) reported on attachment oriented home visits for girls/boys (ages 1-6). We have very low certainty in this evidence due to serious concerns for risk of bias and very serious concerns for imprecision. Immediately post-treatment, we have very low certainty that attachment-oriented home visits enable a small reduction in internalizing symptoms (MD = -3.06, 95% CI, range -6.46 to 0.34, P=0.08) and an increase to maternal sensitivity in parent-child interaction (MD = 0.19, 95% CI, range 0.04 to 0.34, P=0.01). Immediately post-treatment, the control group (vs attachment oriented home visiting group) showed a very small reduction of externalizing symptoms (MD= 1.57, 95% CI, range -2.2 to 5.34, P=0.41). Overall, we have very low certainty that attachment oriented home visits may reduce internalizing symptoms and increase maternal sensitivity post-treatment.

Psychoeducational home visits vs. community control (1 study). One study (Toth 2002¹⁹) reported on psychoeducational home visits vs. community control for boys/girls (average age of 4 years). Immediately post-treatment, we have very low certainty evidence that the community control

group (vs. the psychoeducational home visits group) showed a small increase in relationship expectation (parent-child interaction measure) (MD = -0.25, 95% CI, -0.67 to 0.17, P=0.25). Overall, psychoeducational home visits show no benefit at post-treatment.

Psychoeducational parenting intervention vs. community control (1 study). One study (Cicchetti 2006²²) examined psychoeducational parenting intervention vs. community control for children (average age of 13.31 months) exposed to child maltreatment. Overall, we have very low certainty that psychoeducational parenting intervention shows no effect on internalizing symptoms or externalizing symptoms at 12-month follow-up.

Multi-systemic therapy vs. parent training (1 study). One study (Brunk 1987³⁰) reported on multisystemic therapy vs. parent training for boys/girls (average age of 6.8 to 9.8 years) exposed to child maltreatment. The authors assessed child behaviour problems using the Behavior Project Checklist, 55-item (three point scale) used by parents to report of child behaviour problems. Parent-child interaction was assessed through Schaffer and Crook's parent-child interaction system. This system "yields three-part sequences (antecedent child behavior – parent control – consequent child behavior) of parent-child interaction". The sequential behaviours were assessed and reported as parental effectiveness in attention (e.g., child is looking away; parent asks child to look at the blocks; child complies) or action (e.g., child is looking at blocks; parent indicates the child should copy the picture; child attempts to do so), or parental unresponsiveness (e.g., child is looking at the picture and the parent says "look at this picture", i.e., parent is not sensitive to the child's involvement state and attempts to gain the child's attention toward an object that she/he is already attending to). The findings from this study are split with some benefits in parent-child interaction resulting from multisystemic therapy and some benefits resulting from parent training. The authors report that there were significant differences in multisystemic therapy vs. parental training for parental attention ($p < 0.29$). Post hoc tests indicated that for one aspect of parental attention (Not oriented – Verbal attention – Oriented), multisystemic therapy offered significant benefits in neglectful families (mean MST vs. PT = 17 vs. -14.4) and parent training offered significant benefits for abusive families (mean PT vs. MST = 13.8 vs. 2.3). For another aspect of improvements in parental attention (Contact – Nonverbal attention – Oriented), multisystemic therapy showed improvements for both abusive (mean MST vs. PT, 1.7 vs. -3.5) and neglectful (mean MST vs. PT: 20 vs. -2.1) families. Both neglectful and abusive families showed improvement in a final aspect of parental attention (Not oriented – Verbal Attention – Oriented). Significant differences were found for aspects of parental action, including Oriented – Verbal action – Task completed ($p < 0.032$), Contact –

Verbal action – Task completed ($P<0.033$), and Contact – Nonverbal action – Task completed ($p<0.001$), with post hoc tests showing significant worsening for multisystemic therapy participants for Oriented – Verbal action – Task completed and significant improvements in parental actions for both a) Contact – Verbal action – Task completed and b) Contact – Nonverbal action – Task completed. For parental unresponsiveness, multisystemic therapy enabled a significant ($p<0.010$) reduction in one aspect of parental unresponsiveness (Oriented – Verbal attention – Oriented) for both abusive (mean MST vs. PT: -23.4 vs. -7.9) and neglectful (mean MST vs. PT: -52.7 vs. 20.1) families. All groups had a significant increase in Oriented – Verbal attention – Task completed, indicating a positive response to both therapies. Overall, benefits across multisystemic therapy and parent training are split.

Table 5. Parent-child interaction pre- to post-treatment means and mean difference (MD) across parent training and multisystemic therapy as reported in Brunk 1987.				
Yellow = significant improvement				
Red = significant worsening				
	Abusive families		Neglectful families	
	Multisystemic therapy	Parent training	Multisystemic therapy	Parent training
Parental effectiveness (attention):				
Not oriented – Verbal attention – Oriented (Higher scores are better.)	2.3 (2.3-0.0)	13.8 (17.1-3.3)	17 (17.5-0.5)	-13.4 (4.7-18.1)
Contact – Nonverbal attention – Oriented (Higher scores are better.)	1.7 (6.4-4.7)	-3.5 (6.9-10.4)	20 (22.4-2.4)	-2.1 (8.4-10.5)
Not oriented – Verbal Attention – Oriented (Higher scores are better.)	9.4 (9.4-0.0)	4.1 (5.9-1.8)	30.1 (30.1-0.0)	2.2 (2.8-0.6)
Parental effectiveness (action):				
Oriented – Verbal action – Task completed (Higher scores are better.)	17.8 (19.7-37.5)	1.4 (27.4-26.0)	19.9 (8.1-28.0)	3.7 (21.8-18.1)
Contact – Verbal action – Task completed (Higher scores are better.)	18.6 (37.8-19.2)	3.8 (24.9-21.1)	27.7 (48.8-22.1)	-8.7 (25.5-34.2)
Contact – Nonverbal action – Task completed (Higher scores are better.)	31.1 (35.8-4.7)	-7.7 (8.3-16.0)	30.7 (30.7-0.0)	-13.8 (9.0-22.8)
Parental unresponsiveness:				
Oriented – Verbal attention – Oriented (Lower scores are better.)	-23.4 (8.4-31.8)	-7.9 (24.7-32.6)	-52.7 (5.8-58.5)	20.1 (38.8-18.7)
Oriented – Nonverbal attention – Oriented (Lower scores are better.)	-20.6 (3.5-24.1)	-24.5 (10.7-35.2)	-19.5 (1.0-20.5)	24.1 (37.5-13.4)
Oriented – Verbal attention – Task completed	23.7 (27.1-3.4)	0.7 (9.8-9.1)	3.4 (5.2-1.8)	8.3 (14.7-6.4)

(Higher scores are better.)				

3.4.2. Child physical abuse and neglect

Participants and study characteristics. Four studies (all RCTs) addressed parenting interventions delivered in a home setting for children exposed to physical abuse and neglect, including a home-visiting study using public health nurses (MacMillan 2005¹⁷), multisystemic therapy (Swenson 2010²⁸), Project Support (Jouriles 2010⁵⁰) and Internet-based Interacting Together Everyday: Recovery after Childhood TBI (inTERACT) (Mast 2014⁵¹) (see Appendix III for study characteristics). Aside from the study about multisystemic therapy (Swenson 2010²⁸), which addressed older children (ages 10-17 years), children in these studies tended to be preschoolers and school aged children (MacMillan 2005¹⁷, Jouriles 2010⁵⁰, Mast 2014⁵¹). All studies took place in high-income countries, including the U.S. (Swenson 2010²⁸, Jouriles 2010⁵⁰, Mast 2014⁵¹) and Canada (MacMillan 2005¹⁷).

Risk of bias. One study (MacMillan 2005¹⁷) was considered to be low risk of bias because no categories were rated as high risk of bias and the sequence generation and allocation concealment categories were rated low risk of bias. All other studies were considered to be unclear risk of bias. One study (Swenson 2010²⁸) was rated as unclear risk of bias due to high risk of bias for blinding of patients/providers, because the authors explicitly state that the participants were not blinded to the intervention. One study (Jouriles 2010⁵⁰) was rated as a high risk of bias for blinding of participant/providers and blinding of outcomes, as the authors explicitly stated that mothers were informed of their treatment condition and staff were not blinded.

GRADE assessments. One study (MacMillan 2005¹⁷) was ranked as low certainty evidence for very serious imprecision. Low certainty evidence suggests that our confidence in the effect estimate is limited and the true effect may be substantially different from the estimate of the effect. The other three studies (Swenson 2010²⁸, Jouriles 2010⁵⁰, Mast 2014⁵¹) were ranked as very low certainty evidence.

Outcomes.

Home visiting by public health nurse (vs. standard care). One study (MacMillan 2005¹⁷) reported home visiting by a public health nurse vs. standard care for girls/boys (average age of 5 years). Immediately post-treatment, we have low certainty evidence that home visiting by a public health nurse enables a small increase in positive parent-child interaction (MD = 4.2, 95% CI, 1.05 to 7.35, P=0.009)

and no effect on externalizing symptoms in males (MD = 01.5, 95% CI, -5.57 to 2.57, P=0.47). Immediately post-treatment, the standard care group (vs. the home visiting by a public health nurse) showed a reduction in externalizing symptoms for girls (MD = 4.8, 95% CI, 0.92 to 8.68, P=0.02) and anxiety symptoms for girls (MD = 1.9, 95% CI, 0.29 to 3.51, P=0.02), a small reduction in anxiety symptoms for boys (MD = 1, 95% CI, -0.76 to 2.76, P=0.26). At 12-months follow-up, there is still a positive increase in parent-child interaction (MD = 5.2, 95% CI, 1.74 to 8.66, P=0.003), as well as a reduction in externalizing symptoms in boys (MD = -4.4, 95% CI, -8.42 to -0.38, P=0.03). At 12-months follow-up, the standard care group (vs. the home visiting by a public health nurse) showed a small reduction in externalizing symptoms for girls (MD = 2.9, 95% CI, -0.84 to 6.64, P=0.13), a large reduction in anxiety symptoms for girls (MD = 2.4, 95% CI, 0.80 to 4.0, P=0.003), as well as no effect on anxiety symptoms in boys. At 12-month follow up, we have low certainty that children in the standard care group will experience re-reports of physical abuse at a rate of 431 per 1000 compared to 330 per 1000 for children receiving home visits from a public health nurse (for a difference of 101 per 1000). At 12-month follow-up we have low certainty that children in the standard care group will experience re-reports of neglect at a rate of 514 per 1000 compared to 467 per 1000 for children receiving home visits from a public health nurses (for a difference of 47 per 1000).

Multisystemic therapy vs. enhanced outpatient treatment (1 study). One study (Swenson 2010²⁸) reported about multisystemic therapy vs. enhanced outpatient treatment for adolescent boys/girls (10-17 years). For this study we report the calculated mean differences and measure of variance (standard error) reported by study, as no baseline or post-treatment data is provided by the study. As such, we were not able to calculate SMD values to interpret the size of the effect. Immediately post-treatment, we have very low certainty that multisystemic therapy may enable a reduction in internalizing symptoms (MD = -2.13, 95% CI, -3.99 to -0.27, P=0.02) and PTSD symptoms (MD = -1.43, 95% CI, -2.8 to -0.06, P= 0.04), but small or no effect on externalizing symptoms (MD = -0.75, 95% CI, -3.63 to 2.13, P=0.61), anxiety (MD = -0.13, 95% CI, -0.35 to 0.09, P=0.24), and depression (MD = -0.03, 95% CI, -0.27 to 0.21, P=0.80).¹⁸ We have very low certainty that immediately post-treatment 21.4% of the control group compared with 9.2% of the multisystemic therapy group had PTSD diagnoses (for a difference of 12.2%). At 16-month follow up, we have very low certainty that the

¹⁸ Swenson 2010²⁸ report changes as follows: “A main effect for time (slope) was found for youth-reported PTSD and depressive symptoms and parent-reported social skills, indicating overall improvement in these areas across conditions. However, the improvement in youth-reported PTSD symptoms was significantly greater for MST-CAN [multisystemic therapy] youth. Further, MST-CAN, but not EOT youth, showed significant decreases in parent-reported internalizing, PTSD, and total symptoms, and youth reported dissociative symptoms.

enhanced outpatient treatment group had reabuse rates of 119 per 1000 compared to the 45 per 1000 in the multisystemic therapy group (for a difference of 74 per 1000).

Project Support vs. treatment as usual (1 study). One study (Jouriles 2010⁵⁰) reported about Project Support for children (ages 3-8 years). At 20 months follow-up, we have very low certainty that re-report rates of maltreatment in the treatment as usual group were 278 per 1000 compared to 58 per 1000 in the Project Support intervention (for a difference of 20 per 1000).

Internet-based Interacting Intervention (InTERACT) vs. internet resources (1 study). One study (Mast 2014⁵¹) examined InTERACT vs. internet resources comparison for children (ages 3-9 years). Caregiver-child interaction was measure through the DPICS, discussed above. At 2-months follow-up, we have very low certainty that InTERACT may enable a large increase in caregiver praise (MD = 4.5, 95% CI, 2.16 to 6.84, P=0.0002), an increase in positive caregiver reflections (MD = 3, 95% CI, -1.81 to 7.81, P=0.22), a reduction in caregiver commands (MD = 6.42, 95% CI, -8.28 to 21.12, P=0.39), and a small reduction in caregiver questions (MD = -5.58, 95% CI, -36.19 to 25.03, P=0.72). However, at 2-months follow-up, we have very low certainty that the control group (vs. InTERACT) may find a small, but greater reduction in internalizing symptoms (MD = 2.45, 95% CI, -5.14 to 10.04, P=0.53) and externalizing symptoms (MD = 2.7, 95% CI, -6.2 to 11.6, P=0.55). Overall, for children (ages 3-9 years), we have very low certainty that at 2-months follow-up, InTERACT may increase caregiver praise and positive caregiver reflections, as well as decrease caregiver commands and caregiver questions. However, the control group had a more significant reduction in internalizing and externalizing symptoms.

3.4.3. Child neglect

Participant and study characteristics. One study (Bernard 2015³⁴) reported about a parenting intervention for children exposed to neglect, specifically an Attachment and Biobehavioral Catchup (ABC) intervention for children ages 4 to 6 (see Appendix III for study details). The ABC intervention was carried out by trained parent coaches and took place in the U.S.

Risk of bias. This study is overall ranked as unclear risk of bias, mainly because the study authors did not explicitly state the use a low-risk method of sequence generation (e.g., random number table), or a low-risk method of allocation concealment (e.g., centralized telephone).

GRADE assessments. Overall, this evidence can be considered “very low” quality, downgraded for serious risk of bias and very serious imprecision. Very low certainty evidence suggests that we have very little confidence in the effect estimate and that the true effect is likely to be substantially different

from the estimate of effect. It is likely that further research could have an impact on the estimate of effect.

Outcomes & Summary.

Attachment and Biobehavioral Catch-up vs. development education for families (1 study). One study (Bernard 2015³⁴) assessed Attachment and Biobehavioral Catch-up vs. development education for families for boys/girls (average age of 4-6) exposed to neglect. The authors did not report means or variance for findings, so they will be summarized narratively. The authors assessed maternal sensitivity through the Observational Ratings of the Caregiver Environment, where scores for sensitivity can range from 1.0 to 5.0 and are determined by coding videotaped play interactions. While the authors are unclear about the exact follow-up date, initial data collection began in January 2006 and assessments for this study were done between November 2011 and June 2012; this indicates that the study is approximately a 5-year follow-up. At baseline, the authors report that there “were no differences in observed maternal sensitivity between mothers” ($p = 0.98$). At 5-year follow-up, significant differences in maternal sensitivity were found ($p < 0.001$) and specifically mothers in the development education for families group scored significantly lower than mothers in the Attachment and Biobehavioral Catch-up group ($p < 0.001$).

Summary of parenting interventions delivered in a home setting. For parenting interventions delivered in a home setting, we have moderate certainty evidence that SafeCare enables small reductions in recurrence rates for preschool children exposed to maltreatment, low certainty evidence that home visiting with a public health nurse may enable small reductions in recurrence rates for children (average age of 5 years) exposed to physical abuse and neglect and very low certainty evidence that multisystemic therapy may enable small reductions in recurrence for children (ages 10-17) exposed to physical abuse, and that Project Support may enable small reductions in recurrence rates for children (ages 3-8) exposed to physical abuse and neglect (see Table 6). Other than this, evidence for the effectiveness of parenting interventions delivered in a home setting for children exposed to maltreatment is limited and conflicting, showing limited benefits especially for mental health symptoms. We have very low certainty that some interventions (e.g., promoting first relationships, attachment-oriented home visits) may enable moderate benefits to certain aspects of parent-child interaction and that multi-systemic therapy may enable small reductions in internalizing symptoms and PTSD symptoms (but not depression or anxiety symptoms).

Table 6. Summary of symptom change [large (L), medium (M), small (S), and no effect (N)] in parenting interventions delivered in a home setting for exposure child maltreatment at post-treatment (PT) or longest month (mo) follow-up

Note: We have very low certainty in all evidence

Note: We have very low certainty in all evidence

Parenting, Home-based	N	Internalizing symptoms												Externalizing				Parent-child interaction				Recurrence				
		Internalizing				Depression				Anxiety				PTSD												
		N	S	M	L	N	S	M	L	N	S	M	L	N	S	M	L	N	S	M	L	N	S	M	L	
Child maltreatment																										
SC/C vs. SAU/UC (6-yrs)	2175																								X	
SC/UC vs. SAU/UC (6-yrs)	2175																								X	
SAU/C vs. SAU/UC (6-yrs)	2175																								X	
PFR vs. EES (PT)	210 D																	X				X				
--PFR vs. EES (6-mo)	210 D	X													X			X	X							
AOHV vs. SC (PT)*	89			X											≠						X					
PEHV vs. CC (PT)*	64																		≠							
PEPI vs. CC (12-mo)	53	X													X											
MST vs. PT (PT)	43																			X						
Physical abuse & neglect																										
HPHN vs. SC (PT)* ^G	163										≠						≠									
HPHN vs. SC (PT)* ^B	163										≠				X											
--HPHN vs. SC (12-mo)* ^G	163																≠							X		
--HPHN vs. SC (12-mo)* ^B	163									X							X							X		
MST vs. EOT (PT)	86			X			X			X				X		X										
--MST vs. EOT (10-mo)	86																							X		
PS	35																							X		
I-InT vs. IRC (2-mo)*	9			≠											≠					X	≠	X				
Neglect																										
ABC vs. DEF †	40														≠					X						

B=Boys only; G=Girls only

D=Dyads

†Note that ABC vs. DEF did not provide information that could be put into the GRADE tables. Refer to the report for more details.

SC=SafeCare; C=Coached; SAU=Services as usual; UC=uncoached; PRF=Promoting First Relationships; EES=Early education support; AOHV=Attachment oriented home visits; SC=Standard care; PEHV=Psychoeducational home visits; CC=Community control; PEPI=Psychoeducational parenting intervention; MST=multi-systemic therapy; PT=play therapy; HPHN=Home visits with a public health nurse; SC=Standard care; EOT=Enhanced outpatient treatment;

PS=Project Support; I-InT= Internet-based interacting together intervention; IRC=Internet Resource Comparison; ABC=Attachment & biobehavioral catch-up; DEF=Development education for families

For child maltreatment interventions:

Note: AOHV vs. SC (PT), the control group shows a small but greater reduction in externalizing symptoms. For PEHV vs. CC (PT)*, the control group shows a small but greater increase in positive parent-child interaction

For physical abuse & neglect interventions:

Note: For HVPHN vs. SC (PT), the control group shows a greater reduction in girls' externalizing symptoms, a greater reduction in girls'/boys' anxiety. For HVPHN vs. SC (12-mo)*, the control group shows a greater reduction in girls' externalizing symptoms and anxiety symptoms. For InTERACT vs. IRC (2-mo)* the control group shows a small but greater reduction in internalizing and externalizing symptoms and a greater reduction in negative parental commands.

3.5. Child-focused skills development

3.5.1. Child physical abuse and neglect

Participants and study characteristics. Two studies (both RCTs) address child-focused skills development for children ranging from 3 to 5 years of age (Fantuzzo 1988⁵², 1996²³) (see Appendix III for study characteristics). One of the studies used parent volunteers to support play between children (Fantuzzo 1996²³) and the other use peer-initiated or teacher's aide-initiated play between children (Fantuzzo 1988⁵²). Both studies took place in the U.S.

Risk of bias. Overall, the two included studies (Fantuzzo 1988⁵², 1996²³) were rated as unclear risk of bias, mainly because the studies did not state the use of a low risk method of allocation concealment (e.g., centralized telephone) or the use a low-risk method of sequence generation (e.g., random number table).

GRADE assessments. Overall, the evidence is considered to be "very low" certainty and was downgraded for serious risk of bias and serious imprecision. Very low certainty evidence suggests that we have very little confidence in the effect estimate and that the true effect is likely to be substantially different from the estimate of effect. It is likely that further research could have an impact on the estimate of effect.

Outcomes. One study (Fantuzzo 1988⁵²) reported on the adult or child initiated social interaction vs. a control group (where the control group had the same number of play sessions, but the peer mentor did not initiate interaction) for boys/girls ages 3 to 5 exposed to physical abuse and neglect. Immediately post-treatment, we have very low certainty that child initiated social interaction (vs. control) may have a large effect on anxiety/psychological problems favouring the intervention (MD = -10.1, 95% CI, range -15.02 to -5.78, $P < 0.0001$), but this effect was not found for adult initiated peer mentoring (vs. control) (MD = 5.5, 95% CI, range -0.19 to 11.19, $P=0.06$). Another study (Fantuzzo 1996²³) reported on the use of resilient peer treatment where the intervention group involved pairing a resilient peer with a socially withdrawn peer for play sessions (the control group had the same number of play sessions, but the peer did not initiate interaction) for girls/boys ages 3 to 5 exposed to physical abuse and neglect. This study only provides data for post-treatment / follow-up only (i.e., no baseline data was provided). Immediately post-treatment, we have very low certainty evidence that resilient

peer treatment (vs. control) has a large effect on internalizing symptoms ($M = -15.83$, 95% CI, range -21.8 to -9.86, $P < 0.00001$) and externalizing symptoms ($M = -14.03$, 95% CI, range -28.31 to 0.25, $P=0.05$). Overall, we have very low certainty that child-initiated skills development may favour the intervention for the reduction of anxiety/psychological problems, externalizing symptoms, and internalizing symptoms.

Summary of child-focused skills development interventions. We have very low certainty evidence that child-focused skill development interventions may enable large reductions in internalizing and externalizing symptoms and behaviour problems at post-treatment (see Table 7).

Table 7. Summary of symptom change [large (L), medium (M), small (S), and no effect (N)] in child-focused skills training for exposure child maltreatment at post-treatment (PT) or longest month (mo) follow-up

Note: We have very low certainty in all evidence

Child-focused skill intervention	N	Internalizing symptoms												Externalizing				Parent-child interaction				Recurrence			
		Internalizing				Depression				Anxiety				PTSD											
		N	S	M	L	N	S	M	L	N	S	M	L	N	S	M	L	N	S	M	L	N	S	M	L
Child maltreatment																									
C-SIPM vs. AC (PT)	36												X												
A-SIPM vs. AC (PT)*	36									≠															
RPT vs. AC (PT)	20				X												X								
C-SIPM=child-initiated social initiation peer mentoring intervention; AC=attention control; A-SIPM=adult-initiated social initiation peer mentoring intervention; RPT=resilient peer treatment																									
Note: For A-SIPM vs. AC (PT), control group shows a moderate greater reduction in anxiety symptoms/																									

4. Discussion

This systematic review addresses psychosocial interventions for children exposed to physical abuse, emotional abuse, or neglect for the purposes of supporting guidance development relating to health sector responses to children exposed to maltreatment. In order to facilitate comparisons for the purposes of guideline development, the findings of this review are compared to the recent guidance statements for psychosocial interventions developed by the National Institute of Health and Care Excellence (NICE) for child abuse and neglect. For reference, the NICE guideline looked at children *at risk of* or experiencing child abuse and neglect, whereas this review only examined children experiencing child abuse and neglect. They also reviewed both systematic reviews, RCTs, and quasi-experimental studies, whereas all of the analysis for the present review addressed RCTs.

4.1. Interventions for children exposed to maltreatment

No studies were found that addressed pharmacological interventions for children exposed to maltreatment. For psychosocial interventions directed at children exposed to maltreatment, we analyzed 29 unique studies (26 unique intervention types published 36 articles). Our review found two intervention types to be of moderate certainty: SafeCare for children exposed to maltreatment and parent-child interaction therapy for children exposed to physical abuse and neglect. When considering single studies (of very low certainty) that showed benefit to two or more outcomes of interest, the following two intervention types were considered to be “promising” – in that they showed benefit to two or more outcomes of interest – but require more studies before firm recommendations can be made: individual parent and child CBT for children exposed to physical abuse and attachment-oriented home visits for children exposed to maltreatment. With these studies in mind, we compare our results to guidance offered by the NICE for child abuse and neglect.

Three NICE recommendations relate to child sexual abuse, and as such are not being considered in this report. NICE recommendation 1.6.9 recommends “parent-child interaction therapy for parents and children under 12 if the parent has physically abused or neglected the child...”. In this review, the evidence for parent-child interaction therapy was found to be moderate certainty evidence and this intervention demonstrated small benefits to internalizing and externalizing symptoms, recurrence rates and small to large benefits to aspects of parent-child interaction.

The other recommendations offered in the NICE guidelines are based on evidence that our review found to be of very low certainty, with some (but not all) of the interventions offering mixed or little benefit to children exposed to maltreatment (in terms of the essential outcomes analyzed for this review) (see Table 8), including recommendations related to attachment and biobehavioural catch-up (ABC), child-parent psychotherapy, home-based parenting interventions, multi-systemic therapy, individual focused psychoanalytic therapy, and group psychotherapeutic and psychoeducational sessions. Notably, the NICE recommendation for home-based parenting

interventions involved a review of mostly at-risk families, where there is more evidence for the benefits of home visiting interventions.

Table 8. Comparing NICE recommendations to the findings of this review				
CM Type	Intervention type	Baseline N	NICE Recommendation	Findings from this review
N	Attachment & biobehavioural catch-up	50	1.6.4 "Offer attachment-based intervention to parents or carers who have neglected or physically abused a child under 5..." Note: Findings based on evidence from children exposed to maltreatment and foster children.	Effectiveness: - We have very low certainty evidence that ABC may enable small benefits to parent-child interaction, but the control group's externalizing symptoms improved at a greater rate than the ABC group. Limitations in evidence: - Single, small trials - Limited evidence for outcomes considered to be essential for decision-making
CM	Preschooler-parent psychotherapy	53	NICE guideline 1.6.6, "Consider child-parent psychotherapy for parents or carers and children under 5 if the parent or carer has physically or emotionally abused or neglected the child, or the child has been exposed to domestic violence..."	Effectiveness: - We have very low certainty that immediately post-treatment preschooler-parent psychotherapy may enable a large increase in positive parent-child interaction. Infant-parent psychotherapy shows no effect on reducing internalizing or externalizing symptoms at 12-month follow-up. Limitations in evidence: - Single, small trials - Limited evidence for outcomes considered to be essential for decision-making
CM	Infant parent psychotherapy	84		
CM	SafeCare	2175	1.6.8 "Consider a comprehensive parenting intervention for parents and children under 12 if the parent or carer has physically or emotionally abused or neglected the child. This should comprise weekly home visits for at least 6 months that address..." Note: Their findings are mostly based on evidence from at risk families.	Effectiveness: For parenting interventions delivered in a home setting, we have moderate certainty evidence that SafeCare enables small reductions in recurrence rates for preschool children exposed to maltreatment, low certainty evidence that home visiting with a public health nurse may enable small reductions in recurrence rates for children exposed to physical abuse and neglect and very low certainty evidence that multisystemic therapy may enable small reductions in recurrence for exposed to physical abuse, and that Project Support may enable small reductions in recurrence rates for children exposed to physical abuse and neglect. Other than this, evidence for the effectiveness of parenting interventions delivered in a home setting for children exposed to maltreatment is limited and conflicting, showing limited benefits especially for mental health
CM	Promoting first relationships ²⁵	210 (Dyads)		
CM	Attachment oriented home visits ⁴⁹	89		
CM	Psychoeducation home visits ¹⁹	64		
CM	Psychoeducational parenting intervention ²²	53		
CM	Multi-systemic therapy ³⁰	43 (Families)		
PA & N	Home visits by nurses ¹⁷	163		

PA	Multi-systemic therapy ²⁸	86 (Dyads)		symptoms. We have very low certainty that some interventions (e.g., promoting first relationships, attachment-oriented home visits) may enable moderate benefits to certain aspects of parent-child interaction and that multi-systemic therapy may enable small reductions in internalizing symptoms and PTSD symptoms (but not depression or anxiety symptoms).
PA & N	Project Support ⁵⁰	35		
PA	Internet-based interacting together everyday ⁵¹	9 (Families)		
CM	Multi-systemic therapy ³⁰	43 (Families)	1.6.10 “Consider multi-systemic therapy for child abuse and neglect for parents, children and young people aged 10-17 if the parent has abused or neglected their child...”	- In the present review, the evidence for multi-systemic therapy was considered to be very low certainty. For child maltreatment, one RCT found some benefits in parent-child interaction resulting from multisystemic therapy (the intervention) and some benefits resulting from parent training (the control group). For physical abuse, the RCT found a reduction in children’s internalizing and PTSD symptoms, as well as small reduction in recurrence rates, but small or no effect on externalizing, anxiety, and depression symptoms. reduction in internalizing symptoms Limitations in evidence: - Single, small trials that reported different outcomes (so could not be pooled)
PA	Multi-systemic therapy ²⁸	86 (Dyads)		

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Appendix I: Complete Search Strategies

Database Details and Number of Returned Records						
A. Updates to AHRQ Searches						
			Records Retrieved			
Database	Search Interface	Import Order	Before January 1, 1990	Non-English between January 1, 1990 and April 1, 2012	After April 1, 2012	Data of Database Inception – Date Search was Run
Medline	PubMed	1	162	107	695	- June 24, 16
PyscINFO	OVID	2	4	3	121	- June 24, 16
Web of Science	Thomson Reuters	3	1	32	691	- June 24, 16
Total records retrieved for search update			2846			
B. Additional Searches Across All Time Spans						
Database	Search Interfact	Import Order	Records Retrieved			Date of Database Inception – Date Search was Run
Cochrane	(Wiley)	4	347			- June 24, 16
Embase	OVID	5	1596			- June 24, 16
CINAHL	Ebsco	6	714			- June 24, 16
Sociological Abstracts	Proquest	7	709			- June 24, 16
ERIC	Proquest	8	480			- June 24, 16
Social Work Abstracts	Ebsco	9	270			- June 24, 16
Social Services Abstracts	Proquest	10	918			- June 24, 16
Criminal Justice Abstracts	Ebsco	11	896			- June 24, 16
ASSIA	Ebsco	12	425			- June 24, 16
WHO’s Global Index Medicus		13	109			
Total records across other WHO suggested databases						
Total records across all databases					8963	
Total records after deduplication						

	PubMed	
Search	Query	Items found
#35	(#2 AND #35) NOT Medline[sb]	683
#34	randomized [tiab] OR placebo [tiab] OR randomly [tiab] OR trial [tiab] OR groups [tiab] OR cohort*[tiab]	2515429
#33	Search #20 AND (#21 OR #22 OR #23) Filters: Publication date from 1990/01/01 to 2012/04/01; Afrikaans; Albanian; Arabic; Armenian; Azerbaijani; Bosnian; Bulgarian; Catalan; Chinese; Croatian; Czech; Danish; Dutch; Esperanto; Estonian; Finnish; French; Georgian; German; Greek, Modern; Hebrew; Hindi; Hungarian; Icelandic; Indonesian; Italian; Japanese; Kinyarwanda; Korean; Latin; Latvian; Lithuanian; Macedonian; Malay; Malayalam; Maori; Multiple Languages; Norwegian; Persian; Polish; Portuguese; Pushto; Romanian; Russian; Sanskrit; Scottish gaelic; Serbian; Slovak; Slovenian; Spanish; Swedish; Thai; Turkish; Ukrainian; Undetermined; Vietnamese; Welsh	107
#32	Search #20 AND (#21 OR #22 OR #23) Filters: Publication date from 1990/01/01 to 2012/04/01	2190
#30	Search #20 AND (#21 OR #22 OR #23) Filters: Publication date to 1990/01/01	162
#25	Search #20 AND (#21 OR #22 OR #23) Filters: Publication date from 2012/04/01	695
#24	Search #20 AND (#21 OR #22 OR #23)	2995
#23	Search "Observation"[Mesh]	5124
#22	Search "Cohort Studies"[Mesh]	1527409
#21	Search "Randomized Controlled Trial"[Publication Type] OR "Randomized Controlled Trials as Topic"[Mesh] OR "Single-Blind Method"[Mesh] OR "Double-Blind Method"[Mesh] OR "Random Allocation"[Mesh] OR "trial"[tiab]	844280
#20	Search #5 AND (#6 OR #7 OR #8 OR #9 OR #10 OR #11 OR #12 OR #13 OR #14 OR #15 OR #16 OR #17 OR #18 OR #19)	17012
#19	Search "Drug Therapy"[Mesh]	1142811
#18	Search "Anesthetics, Dissociative" [Pharmacological Action]	10342
#17	Search "Opiate Alkaloids"[Mesh]	78390
#16	Search "Benzodiazepines"[MeSH]	60444
#15	Search Tranquilizing Agents [Pharmacological Action]	172991
#14	Search Antipsychotic Agents [Pharmacological Action]	112783
#13	Search Adrenergic Agents [Pharmacological Action]	329940
#12	Search Anticonvulsants [Pharmacological Action]	138213
#11	Search Monoamine Oxidase Inhibitors [Pharmacological Action]	20862
#10	Search Antidepressive Agents [Pharmacological Action]	127702
#9	Search "Psychotropic Drugs"[Mesh]	140040
#8	Search "Complementary Therapies"[Mesh]	192563
#7	Search "Psychotherapy"[Mesh]	167069
#6	Search "intervention"[tiab] OR "interventions"[tiab] OR "treatment"[tiab] OR "treatments"[tiab] OR "therapy"[tiab] OR "therapies"[tiab] OR "therapeutic"[tiab] OR "training"[tiab] OR "psychoeducation"[tiab] OR "program"[tiab] OR "programs"[tiab]	5644792
#5	Search #3 AND #4	59072
#4	Search "Adolescent"[Mesh] OR "Child"[Mesh] OR "Infant"[Mesh]	3070009

#3	Search #1 OR #2	84076
#2	Search "child abuse"[tiab] OR "child maltreatment"[tiab] OR "neglect"[tiab] OR "domestic violence"[tiab] OR "child welfare"[tiab] OR "foster care"[tiab] OR "kinship care"[tiab] OR "out of home care"[tiab] OR "out of home placement"[tiab] OR "looked after child"[tiab] OR "looked after young"[tiab] OR child protective service* OR physical abuse*	35089
#1	Search "Child Abuse"[Mesh] OR "Child Welfare"[Mesh] OR "Infant Welfare"[Mesh] OR "Domestic Violence"[Mesh] OR "Foster Home Care"[Mesh]	67201

Database: PsycINFO <1806 to June Week 3 2016>

Search Strategy:

-
- 1 child abuse/ or battered child syndrome/ (25122)
 - 2 Child Welfare/ (6843)
 - 3 Domestic Violence/ (9837)
 - 4 Foster Care/ (4619)
 - 5 ("child abuse" or "child maltreatment" or neglect or "domestic violence" or "child welfare" or "foster care" or "kinship care" or "out of home care" or "out of home placement" or "looked after child" or "looked after young" or child protective service* or physical abuse*).mp. (68024)
 - 6 (intervention or interventions or treatment or treatments or therapy or therapies or therapeutic or training or psychoeducation or program or programs).mp. (1262955)
 - 7 psychotherapy/ or adlerian psychotherapy/ or adolescent psychotherapy/ or analytical psychotherapy/ or autogenic training/ or behavior therapy/ or brief psychotherapy/ or brief relational therapy/ or child psychotherapy/ or client centered therapy/ or cognitive behavior therapy/ or conversion therapy/ or eclectic psychotherapy/ or emotion focused therapy/ or existential therapy/ or experiential psychotherapy/ or expressive psychotherapy/ or eye movement desensitization therapy/ or feminist therapy/ or geriatric psychotherapy/ or gestalt therapy/ or group psychotherapy/ or guided imagery/ or humanistic psychotherapy/ or hypnotherapy/ or individual psychotherapy/ or insight therapy/ or integrative psychotherapy/ or interpersonal psychotherapy/ or logotherapy/ or narrative therapy/ or network therapy/ or persuasion therapy/ or primal therapy/ or psychoanalysis/ or psychodrama/ or psychodynamic psychotherapy/ or psychotherapeutic counseling/ or rational emotive behavior therapy/ or reality therapy/ or relationship therapy/ or solution focused therapy/ or supportive psychotherapy/ or transactional analysis/ (165099)
 - 8 alternative medicine/ or acupuncture/ or aromatherapy/ or faith healing/ or folk medicine/ (6988)
 - 9 drugs/ or adrenergic blocking drugs/ or adrenergic drugs/ or alcohols/ or alkaloids/ or amines/ or analgesic drugs/ or anesthetic drugs/ or anti inflammatory drugs/ or antiandrogens/ or antibiotics/ or anticoagulant drugs/ or anticonvulsive drugs/ or antidepressant drugs/ or antiemetic drugs/ or antiestrogens/ or antihistaminic drugs/ or antihypertensive drugs/ or antineoplastic drugs/ or antispasmodic drugs/ or antitremor drugs/ or antitubercular drugs/ or antiviral drugs/ or appetite depressing drugs/ or barbiturates/ or benzodiazepines/ or bromides/ or cannabis/ or channel blockers/ or cholinergic blocking drugs/ or cholinergic drugs/ or cholinomimetic drugs/ or cns affecting drugs/ or diuretics/ or dopamine agonists/ or emetic drugs/ or enzyme inhibitors/ or enzymes/ or ergot derivatives/ or ganglion blocking drugs/ or generic drugs/ or hallucinogenic drugs/ or heart rate affecting drugs/ or hypnotic drugs/ or muscle relaxing drugs/ or narcotic agonists/ or narcotic antagonists/ or narcotic drugs/ or neurotransmitter uptake inhibitors/ or nonprescription drugs/ or nootropic drugs/ or performance enhancing drugs/ or prescription drugs/ or psychotomimetic drugs/ or respiration stimulating drugs/ or sedatives/ or serotonin agonists/ or serotonin antagonists/ or statins/ or steroids/ or sympatholytic drugs/ or sympathomimetic drugs/ or thimerosal/ or tranquilizing drugs/ or vasoconstrictor drugs/ or vasodilator drugs/ (103026)
 - 10 or/1-5 (68045)
 - 11 or/6-9 (1351602)
 - 12 10 and 11 (29595)

13 randomized controlled trial*.mp. (17160)
 14 "single blind method".mp. (2)
 15 "double blind method".mp. (53)
 16 "random allocation".mp. (189)
 17 trial.mp. (83718)
 18 cohort stud*.mp. (14191)
 19 observation.mp. (62983)
 20 or/13-19 (163103)
 21 12 and 20 (1102)
 22 limit 21 to (all journals and human and ("0200 clinical case study" or "0410 experimental replication" or "0430 followup study" or "0450 longitudinal study" or "0451 prospective study" or "0453 retrospective study" or 1600 qualitative study or 1800 quantitative study or "2000 treatment outcome/clinical trial") and (100 childhood <birth to age 12 yrs> or 120 neonatal <birth to age 1 mo> or 140 infancy <2 to 23 mo> or 160 preschool age <age 2 to 5 yrs> or 180 school age <age 6 to 12 yrs> or 200 adolescence <age 13 to 17 yrs>) and journal article) (271)
 23 limit 22 to yr="1860 - 1990" (4)
 24 limit 22 to yr="2012 -Current" (121)
 25 limit 22 to ((afrikaans or albanian or arabic or bulgarian or catalan or chinese or czech or danish or dutch or finnish or french or georgian or german or greek or hebrew or hindi or hungarian or iranian or italian or japanese or korean or lithuanian or malaysian or nonenglish or norwegian or polish or portuguese or romanian or russian or serbo croatian or slovak or slovene or spanish or swedish or turkish or ukrainian) and yr="1990 - 2012") (3)

Web of Science		
Set	Results	
# 29	32	#26 AND #25
		Refined by: PUBLICATION YEARS: (2016 OR 2002 OR 1998 OR 2008 OR 2000 OR 1995 OR 2007 OR 1999 OR 1994 OR 2012 OR 2005 OR 2001 OR 1992 OR 2011 OR 2004 OR 1996 OR 1993 OR 2010 OR 2006 OR 1997 OR 2009 OR 2003) AND LANGUAGES: (SPANISH OR PORTUGUESE OR RUSSIAN OR GERMAN OR FRENCH OR DUTCH)
		Indexes=SCI-EXPANDED, SSCI, A&HCI Timespan=All years
		Indexes=SCI-EXPANDED, SSCI, A&HCI Timespan=All years
# 28	692	#26 AND #25
		Refined by: PUBLICATION YEARS: (2015 OR 2014 OR 2013 OR 2012 OR 1987)
		Indexes=SCI-EXPANDED, SSCI, A&HCI Timespan=All years
# 27	1,517	#26 AND #25
		Indexes=SCI-EXPANDED, SSCI, A&HCI Timespan=All years
# 26	717,557	TS=(randomized controlled trial) OR TS=(observational) OR TS=(cohort study)
		Indexes=SCI-EXPANDED, SSCI, A&HCI Timespan=All years
# 25	16,553	#23 AND #22
		Refined by: DOCUMENT TYPES: (ARTICLE)
		Indexes=SCI-EXPANDED, SSCI, A&HCI Timespan=All years
# 24	19,084	#23 AND #22
		Indexes=SCI-EXPANDED, SSCI, A&HCI Timespan=All years
# 23	1,753,731	TS=(child*) OR TS=(youth) OR TS=(baby) OR TS=(adolescent) OR TS=(teen) OR TS=(teenager) OR TS=(toddler) OR TS=(Infant)
		Indexes=SCI-EXPANDED, SSCI, A&HCI Timespan=All years
# 22	38,506	#21 OR #20
		Indexes=SCI-EXPANDED, SSCI, A&HCI Timespan=All years
# 21	2,816	#13 OR #12 OR #11 OR #10 OR #9 OR #8 OR #7 OR #6 OR #5 OR #4 OR #3 OR #2 OR #1

		Refined by: RESEARCH AREAS: (RESEARCH EXPERIMENTAL MEDICINE OR PHARMACOLOGY PHARMACY)
		Indexes=SCI-EXPANDED, SSCI, A&HCI Timespan=All years
# 20	37,078	#19 AND #14
		Indexes=SCI-EXPANDED, SSCI, A&HCI Timespan=All years
# 19	5,896,831	#18 OR #17 OR #16 OR #15
		Indexes=SCI-EXPANDED, SSCI, A&HCI Timespan=All years
# 18	53,090	TS=(Psychotherapy)
		Indexes=SCI-EXPANDED, SSCI, A&HCI Timespan=All years
# 17	3,065,698	TS=("therapy") OR TS=("therapies") OR TS=("therapeutic") OR TS=("training") OR TS=("psychoeducation") OR TS=("program") OR TS=("programs")
		Indexes=SCI-EXPANDED, SSCI, A&HCI Timespan=All years
# 16	669,620	TS=("intervention") OR TS=("interventions")
		Indexes=SCI-EXPANDED, SSCI, A&HCI Timespan=All years
# 15	3,410,866	TS=("treatment") OR TS=("treatments")
		Indexes=SCI-EXPANDED, SSCI, A&HCI Timespan=All years
# 14	151,909	#13 OR #12 OR #11 OR #10 OR #9 OR #8 OR #7 OR #6 OR #5 OR #4 OR #3 OR #2 OR #1
		Indexes=SCI-EXPANDED, SSCI, A&HCI Timespan=All years
# 13	16,091	TS=(physical abuse*)
		Indexes=SCI-EXPANDED, SSCI, A&HCI Timespan=All years
# 12	1,762	TS=(child protective service*)
		Indexes=SCI-EXPANDED, SSCI, A&HCI Timespan=All years
# 11	20	TS=("looked after young")
		Indexes=SCI-EXPANDED, SSCI, A&HCI Timespan=All years
# 10	2	TS=("looked after child")
		Indexes=SCI-EXPANDED, SSCI, A&HCI Timespan=All years
# 9	331	TS=("out of home placement")
		Indexes=SCI-EXPANDED, SSCI, A&HCI Timespan=All years
# 8	611	TS=("out of home care")
		Indexes=SCI-EXPANDED, SSCI, A&HCI Timespan=All years
# 7	444	TS=("kinship care")
		Indexes=SCI-EXPANDED, SSCI, A&HCI Timespan=All years
# 6	4,224	TS=("foster care")
		Indexes=SCI-EXPANDED, SSCI, A&HCI Timespan=All years
# 5	5,410	TS=("child welfare")
		Indexes=SCI-EXPANDED, SSCI, A&HCI Timespan=All years
# 4	11,484	TS=("domestic violence")
		Indexes=SCI-EXPANDED, SSCI, A&HCI Timespan=All years
# 3	100,130	TS=(neglect)
		Indexes=SCI-EXPANDED, SSCI, A&HCI Timespan=All years
# 2	31,977	TS=(child) AND TS=(abuse*)
		Indexes=SCI-EXPANDED, SSCI, A&HCI Timespan=All years
# 1	3,763	TS=("child maltreatment")
		Indexes=SCI-EXPANDED, SSCI, A&HCI Timespan=All years

Cochrane (Wiley)

ID	Search	Hits
#1	MeSH descriptor: [Child Abuse] explode all trees	499
#2	MeSH descriptor: [Child Welfare] explode all trees	414
#3	MeSH descriptor: [Infant Welfare] explode all trees	101
#4	MeSH descriptor: [Domestic Violence] this term only	150
#5	MeSH descriptor: [Foster Home Care] explode all trees	101
#6	("child abuse" or "child maltreatment" or "neglect" or "domestic violence" or "child welfare" or "foster care" or "kinship care" or "out of home care" or "out of home placement" or "looked after child" or "looked after young"):ti,ab	1095
#7	child protective service* or physical abuse*	1925
#8	#1 or #2 or #3 or #4 or #5 or #6 or #7	3623
#9	MeSH descriptor: [Adolescent] explode all trees	85203
#10	MeSH descriptor: [Child] explode all trees	178
#11	MeSH descriptor: [Infant] explode all trees	14344
#12	#9 or #10 or #11	98218
#13	#8 and #12	663
#14	(intervention or interventions or treatment or treatments or therapy or therapies or therapeutic or training or psychoeducation or program or programs):ti,ab	533546
#15	MeSH descriptor: [Psychotherapy] explode all trees	18614
#16	MeSH descriptor: [Complementary Therapies] explode all trees	16672
#17	MeSH descriptor: [Antidepressive Agents] explode all trees	5382
#18	MeSH descriptor: [Monoamine Oxidase Inhibitors] explode all trees	389
#19	MeSH descriptor: [Anticonvulsants] explode all trees	2225
#20	MeSH descriptor: [Adrenergic Agents] explode all trees	8657
#21	MeSH descriptor: [Antipsychotic Agents] explode all trees	4223
#22	MeSH descriptor: [Tranquilizing Agents] explode all trees	7054
#23	MeSH descriptor: [Benzodiazepines] explode all trees	8125
#24	MeSH descriptor: [Opiate Alkaloids] explode all trees	7752
#25	MeSH descriptor: [Anesthetics, Dissociative] explode all trees	324
#26	MeSH descriptor: [Psychotropic Drugs] explode all trees	12592
#27	MeSH descriptor: [Drug Therapy] explode all trees	126818
#28	#14 or #15 or #16 or #17 or #18 or #19 or #20 or #21 or #22 or #23 or #24 or #25 or #26 or #27	588103
#29	#13 and #28	489
#30	MeSH descriptor: [Randomized Controlled Trial] explode all trees	156
#31	MeSH descriptor: [Randomized Controlled Trials as Topic] explode all trees	21856
#32	MeSH descriptor: [Double-Blind Method] explode all trees	115011
#33	MeSH descriptor: [Random Allocation] explode all trees	20529
#34	trial:ti,ab	291306
#35	MeSH descriptor: [Cohort Studies] explode all trees	126333
#36	MeSH descriptor: [Observation] explode all trees	196
#37	#30 or #31 or #32 or #33 or #34 or #35 or #36	438905
#38	#29 and #37	347

Database: Embase Classic+Embase <1947 to 2016 June 23>

Search Strategy:

- 1 child abuse/ or child neglect/ or child sexual abuse/ (31946)
- 2 ("child abuse" or "child maltreatment" or neglect or "foster care" or "kinship care" or "out of home care" or "out of home placement" or "looked after child" or "looked after young").tw. (28990)
- 3 or/1-2 (49926)
- 4 exp adolescent/ or exp child/ or exp infant/ (3189576)
- 5 (child* or infant* or baby or babies or toddler* or preschool* or pre-school* or "young person" or "young

people" or teen* or adolescen* or youth*).tw. (2082130)

6 or/4-5 (3718152)

7 3 and 6 (35021)

8 intervention study/ (28322)

9 exp psychotherapy/ (217866)

10 exp alternative medicine/ (40260)

11 drug therapy/ (425316)

12 (intervention or interventions or treatment or treatments or therapy or therapies or therapeutic or training or psychoeducation or program or programs).tw. (7696701)

13 or/8-12 (7982939)

14 7 and 13 (11401)

15 (random\$ or placebo\$ or single blind\$ or double blind\$ or triple blind\$).tw. (1227921)

16 RETRACTED ARTICLE/ (8321)

17 or/15-16 (1236032)

18 (animal\$ not human\$).sh,hw. (4081189)

19 (book or conference paper or editorial or letter or review).pt. not exp randomized controlled trial/ (4390945)

20 (random sampl\$ or random digit\$ or random effect\$ or random survey or random regression).ti,ab. not exp randomized controlled trial/ (74003)

21 17 not (18 or 19 or 20) (956119)

22 exp cohort analysis/ (247880)

23 exp longitudinal study/ (89935)

24 exp prospective study/ (340452)

25 exp follow up/ (1073813)

26 cohort\$.tw. (573635)

27 or/21-26 (2615884)

28 14 and 27 (1596)

CINAHL (EBSCO)

Search Terms	Search Options	Actions	
S24	S17 AND S23	Search modes - Boolean/Phrase	View Results (714)
S23	S18 OR S19 OR S20 OR S21 OR S22	Search modes - Boolean/Phrase	View Results (359,635)
S22	TX (cohort stud* OR observation)	Search modes - Boolean/Phrase	View Results (71,578)
S21	(MH "Prospective Studies") OR (MH "Concurrent Prospective Studies") OR (MH "Nonconcurrent Prospective Studies")	Search modes - Boolean/Phrase	View Results (183,665)
S20	TI (trial) OR AB (trial)	Search modes - Boolean/Phrase	View Results (114,800)
S19	(MH "Random Assignment")	Search modes - Boolean/Phrase	View Results (33,493)
S18	(MH "Randomized Controlled Trials") OR (MH "Single-Blind Studies") OR (MH "Triple-Blind Studies") OR (MH "Double-Blind Studies")	Search modes - Boolean/Phrase	View Results (50,585)
S17	S3 AND S16	Search modes - Boolean/Phrase	View Results (3,150)
S16	S4 OR S5 OR S6 OR S7 OR S8 OR S9 OR S10 OR S11 OR S12 OR S13 OR S14 OR S15	Search modes - Boolean/Phrase	View Results (1,486,614)

S15	(MH "Drug Therapy")	Search modes - Boolean/Phrase	View Results (6,705)
S14	(MH "Anesthetics, Dissociative+")	Search modes - Boolean/Phrase	View Results (1,247)
S13	(MH "Morphine+")	Search modes - Boolean/Phrase	View Results (7,621)
S12	(MH "Antianxiety Agents, Benzodiazepine+")	Search modes - Boolean/Phrase	View Results (4,433)
S11	(MH "Antipsychotic Agents+")	Search modes - Boolean/Phrase	View Results (9,412)
S10	(MH "Adrenergic Agents+")	Search modes - Boolean/Phrase	View Results (21,146)
S9	(MH "Anticonvulsants+")	Search modes - Boolean/Phrase	View Results (9,105)
S8	(MH "Monoamine Oxidase Inhibitors+")	Search modes - Boolean/Phrase	View Results (653)
S7	(MH "Psychotropic Drugs") OR (MH "Antidepressive Agents+") OR (MH "Hallucinogens+") OR (MH "Tranquilizing Agents+")	Search modes - Boolean/Phrase	View Results (28,379)
S6	(MH "Alternative Therapies") OR (MH "Apitherapy") OR (MH "Aromatherapy") OR (MH "Auriculotherapy") OR (MH "Bioelectromagnetic Applications") OR (MH "Bioenergy Therapies") OR (MH "Bowen Technique") OR (MH "Buteyko Method") OR (MH "Detoxification, Alternative Therapy") OR (MH "Life Style Changes") OR (MH "Manual Therapy") OR (MH "Mind Body Techniques") OR (MH "Natural and Biologically Based Therapies") OR (MH "Rejuvenation") OR (MH "Wilderness Experience")	Search modes - Boolean/Phrase	View Results (33,470)
S5	(MH "Psychotherapy") OR (MH "Art Therapy") OR (MH "Behavior Modification") OR (MH "Bibliotherapy") OR (MH "Biofeedback") OR (MH "Crisis Intervention") OR (MH "Dance Therapy") OR (MH "Guided Imagery") OR (MH "Hypnosis") OR (MH "Music Therapy") OR (MH "Pet Therapy") OR (MH "Play Therapy") OR (MH "Psychotherapeutic Processes") OR (MH "Psychotherapy, Brief") OR (MH "Psychotherapy, Psychodynamic") OR (MH "Reality	Search modes - Boolean/Phrase	View Results (64,334)

	Therapy") OR (MH "Reminiscence Therapy") OR (MH "Socioenvironmental Therapy") OR (MH "Su ...		
S4	TX (intervention or interventions or treatment or treatments or therapy or therapies or therapeutic or training or psychoeducation or program or programs)	Search modes - Boolean/Phrase	View Results (1,448,830)
S3	S1 OR S2	Limiters - Human; Age Groups: Infant, Newborn: birth-1 month, Infant: 1-23 months, Child, Preschool: 2-5 years, Child: 6-12 years, Adolescent: 13-18 years	View Results (6,873)
S2	TI ("child abuse" or "child maltreatment" or neglect or "domestic violence" or "child welfare" or "foster care" or "kinship care" or "out of home care" or "out of home placement" or "looked after child" or "looked after young" or child protective service* or physical abuse*) OR AB ("child abuse" or "child maltreatment" or neglect or "domestic violence" or "child welfare" or "foster care" or "kinship care" or "out of home care" or "out of home placement" or "looked after child" or "looked after y ...	Search modes - Boolean/Phrase	View Results (13,796)
S1	(MH "Child Abuse") OR (MH "Child Abuse, Sexual") OR (MH "Munchausen Syndrome By Proxy") OR (MH "Child Welfare") OR (MH "Domestic Violence") OR (MH "Foster Home Care")	Search modes - Boolean/Phrase	View Results (26,211)

Sociological Abstracts (Proquest)

Set	Search	Databases	Results
S3	S1 AND S2	Sociological Abstracts	709°
S2	(TI(random* or placebo* or "single blind*" or "double blind*" or "triple blind*") OR AB(random* or placebo* or "single blind*" or "double blind*" or "triple blind*")) OR (TI(cohort*) OR AB(cohort*))	Sociological Abstracts	25,849°
S1	(SU.EXACT("Child Sexual Abuse") OR SU.EXACT("Child Abuse") OR SU.EXACT("Family Violence") OR SU.EXACT("Foster Care")) OR (TI("child abuse" or "child maltreatment" or neglect or "domestic violence" or "child welfare" or "foster care" or "kinship care" or "out of home care" or "out of home placement" or "looked after child" or "looked after young" or	Sociological Abstracts	19,156°

	child protective service* or physical abuse*) OR AB("child abuse" or "child maltreatment" or neglect or "domestic violence" or "child welfare" or "foster care" or "kinship care" or "out of home care" or "out of home placement" or "looked after child" or "looked after young" or child protective service* or physical abuse*))		

ERIC (Proquest)

Set	Search	Databases	Results
S3	((SU.EXACT("Child Abuse") OR SU.EXACT("Child Welfare") OR SU.EXACT("Foster Care")) OR (TI("child abuse" OR "child maltreatment" OR neglect OR "domestic violence" OR "child welfare" OR "foster care" OR "kinship care" OR "out of home care" OR "out of home placement" OR "looked after child" OR "looked after young" OR child protective service* OR physical abuse*) OR AB("child abuse" OR "child maltreatment" OR neglect OR "domestic violence" OR "child welfare" OR "foster care" OR "kinship care" OR "out of home care" OR "out of home placement" OR "looked after child" OR "looked after young" OR child protective service* OR physical abuse*))) AND ((TI(random* or placebo* or "single blind*" or "double blind*" or "triple blind*") OR AB(random* or placebo* or "single blind*" or "double blind*" or "triple blind*")) OR (TI(cohort*) OR AB(cohort*)))	ERIC	480°
S2	(TI(random* or placebo* or "single blind*" or "double blind*" or "triple blind*") OR AB(random* or placebo* or "single blind*" or "double blind*" or "triple blind*")) OR (TI(cohort*) OR AB(cohort*))	ERIC	36,803°
S1	(SU.EXACT("Child Abuse") OR SU.EXACT("Child Welfare") OR SU.EXACT("Foster Care")) OR (TI("child abuse" or "child maltreatment" or neglect or "domestic violence" or "child welfare" or "foster care" or "kinship care" or "out of home care" or "out of home placement" or "looked after child" or "looked after young" or child protective service* or physical abuse*) OR AB("child abuse" or "child maltreatment" or neglect or "domestic violence" or "child welfare" or "foster care" or "kinship care" or "out of home care" or "out of home placement" or "looked after child" or "looked after young" or child protective service* or physical abuse*))	ERIC	18,335°

Social Work Abstracts (Ebsco)

Search ID#	Search Terms	Search Options	Actions
S5	S3 AND S4	Search modes - Boolean/Phrase	View Results (270)
S4	(TI(random* or placebo* or "single blind*" or "double blind*" or "triple blind*") OR AB(random* or placebo* or "single blind*" or "double blind*" or "triple blind*")) OR (TI(cohort*) OR AB(cohort*))	Search modes - Boolean/Phrase	View Results (3,222)
S3	S1 OR S2	Search modes - Boolean/Phrase	View Results (6,045)
S2	TI ("child abuse" or "child maltreatment" or neglect or "domestic violence" or "child welfare" or "foster care" or "kinship care" or "out of home care" or "out of home	Search modes - Boolean/Phrase	View Results (5,821)

	placement" or "looked after child" or "looked after young" or child protective service* or physical abuse*) OR AB ("child abuse" or "child maltreatment" or neglect or "domestic violence" or "child welfare" or "foster care" or "kinship care" or "out of home care" or "out of home placement" or "looked after child" or "looked after y ...		
S1	(ZU "child abuse") or (ZU "child abuse and neglect")	Search modes - Boolean/Phrase	View Results (1,145)

Social Services Abstracts (Proquest)

Set	Search	Databases	Results
S3	((SU.EXACT("Child Sexual Abuse") OR SU.EXACT("Child Abuse") OR SU.EXACT("Child Welfare Services") OR SU.EXACT("Foster Care")) OR TI("child abuse" OR "child maltreatment" OR neglect OR "domestic violence" OR "child welfare" OR "foster care" OR "kinship care" OR "out of home care" OR "out of home placement" OR "looked after child" OR "looked after young" OR child protective service* OR physical abuse*) OR AB("child abuse" OR "child maltreatment" OR neglect OR "domestic violence" OR "child welfare" OR "foster care" OR "kinship care" OR "out of home care" OR "out of home placement" OR "looked after child" OR "looked after young" OR child protective service* OR physical abuse*)) AND (SU.EXACT("Cohort Analysis") OR (TI(random* or placebo* or "single blind*" or "double blind*" or "triple blind*") OR AB(random* or placebo* or "single blind*" or "double blind*" or "triple blind*")) OR (TI(cohort*) OR AB(cohort*)))	Social Services Abstracts	918°
S2	SU.EXACT("Cohort Analysis") OR (TI(random* or placebo* or "single blind*" or "double blind*" or "triple blind*") OR AB(random* or placebo* or "single blind*" or "double blind*" or "triple blind*")) OR (TI(cohort*) OR AB(cohort*))	Social Services Abstracts	9,305°
S1	(SU.EXACT("Child Sexual Abuse") OR SU.EXACT("Child Abuse") OR SU.EXACT("Child Welfare Services") OR SU.EXACT("Foster Care")) OR TI("child abuse" OR "child maltreatment" OR neglect OR "domestic violence" OR "child welfare" OR "foster care" OR "kinship care" OR "out of home care" OR "out of home placement" OR "looked after child" OR "looked after young" OR child protective service* OR physical abuse*) OR AB("child abuse" OR "child maltreatment" OR neglect OR "domestic violence" OR "child welfare" OR "foster care" OR "kinship care" OR "out of home care" OR "out of home placement" OR "looked after child" OR "looked after young" OR child protective service* OR physical abuse*)	Social Services Abstracts	23,443°

Note: this is how we should likely go in these **small** databases. AHRQ terms for child maltreatment and then terms for RCTs/cohort studies

Criminal Justice Abstracts (Ebsco)

Search ID#	Search Terms	Search Options	Actions
S7	S3 AND S6	Search modes - Boolean/Phrase	View Results (896)
S6	S4 OR S5	Search modes - Boolean/Phrase	View Results (12,719)
S5	(TI(random* or placebo* or "single blind*" or "double blind*" or "triple blind*") OR AB(random* or placebo* or "single blind*" or "double blind*" or "triple blind*")) OR (TI(cohort*) OR AB(cohort*))	Search modes - Boolean/Phrase	View Results (12,587)
S4	(ZU "randomized controlled trials")	Search modes - Boolean/Phrase	View Results (960)
S3	S1 OR S2	Search modes - Boolean/Phrase	View Results (20,195)
S2	TI ("child abuse" or "child maltreatment" or neglect or "domestic violence" or "child welfare" or "foster care" or "kinship care" or "out of home care" or "out of home placement" or "looked after child" or "looked after young" or child protective service* or physical abuse*) OR AB ("child abuse" or "child maltreatment" or neglect or "domestic violence" or "child welfare" or "foster care" or "kinship care" or "out of home care" or "out of home placement" or "looked after child" or "looked after y ...	Search modes - Boolean/Phrase	View Results (15,402)
S1	(((((ZU "child abuse"))) or ((ZU "child welfare"))) or ((ZU "intimate partner violence"))) or ((ZU "foster home care")))	Search modes - Boolean/Phrase	View Results (11,034)

ASSIA (Ebsco)

Set	Search	Databases	Results
S3	((SU.EXACT("Sexually abused young children") OR SU.EXACT("Abused preschool children") OR SU.EXACT("Childhood abuse") OR SU.EXACT("Abused disabled children") OR SU.EXACT("Abused young children") OR SU.EXACT("Fatal child abuse") OR SU.EXACT("Sexually abused children") OR SU.EXACT("Ritually abused children") OR SU.EXACT("Child abuse") OR SU.EXACT("Sexually abused disabled children") OR SU.EXACT("Abused children") OR SU.EXACT("Child sexual abuse") OR SU.EXACT("Childhood sexual abuse") OR SU.EXACT("Sexually abused preschool children") OR SU.EXACT("Childhood psychological abuse") OR SU.EXACT("Ritual child abuse") OR SU.EXACT("Child welfare") OR SU.EXACT("Kinship foster care") OR SU.EXACT("Kinship foster carers") OR SU.EXACT("Temporary foster care") OR SU.EXACT("Foster care") OR SU.EXACT("Long term foster care")) OR (TI ("child abuse" OR "child maltreatment" OR neglect OR "domestic violence" OR "child welfare" OR "foster care" OR "kinship care" OR "out of home care" OR "out of home placement" OR "looked after child" OR "looked after young" OR child protective service* OR physical abuse*) OR AB ("child abuse" OR "child maltreatment" OR neglect OR "domestic violence" OR "child welfare" OR "foster care" OR "kinship care" OR "out of home care" OR "out of home placement" OR "looked after child" OR "looked after young" OR child protective service* OR physical abuse*))) AND ((SU.EXACT("Cluster randomized trials") OR SU.EXACT("Clinical randomized controlled trials") OR SU.EXACT("Single blind randomized controlled trials") OR SU.EXACT("Randomized controlled trials") OR SU.EXACT("Cluster randomized controlled trials") OR SU.EXACT("Double blind randomized trials") OR SU.EXACT("Double blind randomized controlled trials") OR SU.EXACT("Cohort	Applied Social Sciences Index & Abstracts (ASSIA)	425°

	analysis")) OR (TI(random* OR placebo* OR "single blind*" OR "double blind*" OR "triple blind*") OR AB(random* OR placebo* OR "single blind*" OR "double blind*" OR "triple blind*")) OR (TI(cohort*) OR AB(cohort*))		
S2	(SU.EXACT("Cluster randomized trials") OR SU.EXACT("Clinical randomized controlled trials") OR SU.EXACT("Single blind randomized controlled trials") OR SU.EXACT("Randomized controlled trials") OR SU.EXACT("Cluster randomized controlled trials") OR SU.EXACT("Double blind randomized trials") OR SU.EXACT("Double blind randomized controlled trials") OR SU.EXACT("Cohort analysis")) OR (TI(random* or placebo* or "single blind*" or "double blind*" or "triple blind*") OR AB(random* or placebo* or "single blind*" or "double blind*" or "triple blind*")) OR (TI(cohort*) OR AB(cohort*))	Applied Social Sciences Index & Abstracts (ASSIA)	43,263°
S1	(SU.EXACT("Sexually abused young children") OR SU.EXACT("Abused preschool children") OR SU.EXACT("Childhood abuse") OR SU.EXACT("Abused disabled children") OR SU.EXACT("Abused young children") OR SU.EXACT("Fatal child abuse") OR SU.EXACT("Sexually abused children") OR SU.EXACT("Ritually abused children") OR SU.EXACT("Child abuse") OR SU.EXACT("Sexually abused disabled children") OR SU.EXACT("Abused children") OR SU.EXACT("Child sexual abuse") OR SU.EXACT("Childhood sexual abuse") OR SU.EXACT("Sexually abused preschool children") OR SU.EXACT("Childhood psychological abuse") OR SU.EXACT("Ritual child abuse") OR SU.EXACT("Child welfare") OR SU.EXACT("Kinship foster care") OR SU.EXACT("Kinship foster carers") OR SU.EXACT("Temporary foster care") OR SU.EXACT("Foster care") OR SU.EXACT("Long term foster care")) OR (TI ("child abuse" or "child maltreatment" or neglect or "domestic violence" or "child welfare" or "foster care" or "kinship care" or "out of home care" or "out of home placement" or "looked after child" or "looked after young" or child protective service* or physical abuse*) OR AB ("child abuse" or "child maltreatment" or neglect or "domestic violence" or "child welfare" or "foster care" or "kinship care" or "out of home care" or "out of home placement" or "looked after child" or "looked after young" or child protective service* or physical abuse*))	Applied Social Sciences Index & Abstracts (ASSIA)	8,868°

WHO's Global Index Medicus

(child abuse) OR (child maltreatment) OR (Child neglect) OR (domestic violence) OR (child welfare) OR (foster care) OR (kinship care) OR (out of home care) OR (out of home placement) OR (looked after child) OR (looked after young) OR (child protective services) OR (physical abuse)

- LILACs: 62 CCTs, 32 cohort studies
- IMSEAR (SEARO): 0 CCTs, 0 cohort studies
- WHOLIS (KMS): 5 CCTs, 1 cohort studies
- IMEMR (EMRO): 4 CCTs, 2 cohort studies
- WPRIM (WPRO): 1 CCTs, 2 cohort study
- AIM (AFRO): 0 CCTs, 0 cohort studies

Appendix II: Elements of the Risk of Bias Assessment

Elements that comprised the risk of bias (ROB) assessment, which led to a low (L), unclear (U), or high (H) risk of bias**		
ROB component and definition	Rating	Explanation of what informed rating
1. Sequence generation [Selection bias (biased allocation to interventions) due to inadequate generation of a randomized sequence.]	L	Explicit mention of a random component e.g., random number table, computer random number generator, coin tossing, shuffling cards or envelopes, throwing dice, drawing lots, minimization with or without random element
	U	Authors indicate participants were randomized but do not say how; block or stratified randomization is rated unclear unless the authors also explicitly state that the sequence was computer generated; authors do not mention randomization; insufficient information to permit judgement
	H	Explicit mention of a non-random, systematic, or judgement-based approach e.g., day/date of birth or admission, patient/clinic record number, clinician judgement, participant preference, lab test results, availability of intervention
2. Blinding of patients/ participants and providers / personnel [Selection bias (biased allocation to interventions) due to inadequate concealment of allocations prior to assignment.]	L	No/incomplete blinding but outcome not likely to be affected by lack of blinding OR blinding ensured and unlikely could have been broken
	U	Insufficient information to permit judgement; authors are silent on blinding; authors indicate there was "double blinding" but do not specify which parties were blinded
	H	No/incomplete blinding OR blinding attempted and likely broken and either way the outcome likely to be influenced by lack of blinding
3. Blinding of outcome assessment [Performance bias due to knowledge of the allocated interventions by participants and/or personnel during the study.]	L	No/incomplete blinding but outcome assessment not likely to be affected by lack of blinding OR blinding ensured and unlikely could have been broken
	U	Insufficient information to permit judgement; authors are silent on blinding; authors indicate there was "double blinding" but do not specify which parties were blinded
	H	No/incomplete blinding OR blinding attempted and likely broken and either way the outcome assessment likely to be influenced by lack of blinding
4. Incomplete outcome data [Attrition bias due to amount, nature or handling of incomplete outcome data.]	L	No missing data; drop out rates $\leq 10\%$; drop out rates $>10\%$ but $\leq 30\%$ AND reasons are acceptable and not connected to the intervention AND there is no imbalance in rates/reasons between groups; reasons for missing data unlikely related to the intervention; missing data balanced in numbers across groups with similar reasons; missing data have been appropriately imputed
	U	Insufficient reporting of attrition/exclusions to permit judgement e.g., data tables do not suggest whether there were dropouts or not, number randomized not stated, no reasons for missing data provided
	H	Dropout rates $>10\%$ AND reasons are connected to the intervention OR there is an imbalance in the rates/reasons between groups OR no reasons are given; "as-treated" analysis done with substantial departure of the

		intervention received from that assigned at randomization; potentially inappropriate application of simple imputation
5. Selective reporting [Reporting bias due to selective outcome reporting.]	L	Outcome appears in both methods and results; protocol available and all pre-specified outcomes are reported in pre-specified way or protocol not available but clear the published reports include all expected outcomes
	U	Outcome not mentioned in methods but appears in the results; insufficient information to permit judgement
	H	Outcome is mentioned in methods but does not appear in results; some pre-specified primary outcomes not reported, 1+ outcomes reported using measurements, analysis methods or subsets of data not pre-specified, 1+ outcomes not pre-specified and no clear justification for reporting, 1+ outcomes reported incompletely and cannot be meta-analyzed, no results for key outcome
6. "Other bias" [Bias due to problems not covered elsewhere in the table; significant baseline imbalance in study groups on important characteristics; contamination; industry funding]	L	The study appears to be free of other sources of bias OR if industry sponsored and there is an explicit statement the industry had no involvement other than funding
	U	Industry sponsored/funded but no explicit details about other involvement; may be risk of bias but there is either insufficient information to assess whether important risk exists or insufficient rational or evidence that identified problem will introduce bias
	H	At least one important risk of bias e.g., related to specific study design used, fraudulent claims, sampling/recruitment bias, validity/reliability of measures not good, industry involvement beyond funding, extreme baseline imbalance, etc
*For each category, verbatim quotes, summary of known facts, reviewer comments, page number was copied. Otherwise, staff wrote "probably done," "probably not done," or included a explicit statement if no information was available to inform a judgement **Modified from the Cochrane Risk of Bias Tool ⁵³		

Appendix III: Participant and study characteristics

Counseling/therapy interventions for children exposed to maltreatment							
Study ID / RefID	Maltreatment type	Intervention (n at baseline)	Comparison (n at baseline)	Intervention delivered by	Child mean age (Age range of inclusion criteria)	Participant gender	Country (Income Level, World Bank)
A) Child maltreatment							
Brown 2001 ³² / RefID 24	CM 36.8-45.8% - PA 38.3-60.4% - SA 46.9-76.5% EA	(n=1108 total) Project Chrysalis (n=not stated)	Control group (n=not stated)	School counselors, therapists; education level not stated	15.13-15.44 (14-18) years	100% adolescent girls	U.S.
Cicchetti 2006 ²² / RefID 213 Stronach 2013 ⁵⁴ / RefID 6972	84.6% N 69.2% EA 8.8% PA	Infant-parent psychotherapy (IPP) (n=32) Psychoeducational parenting intervention (PPI) (n=24) Community controls (CS) (n=81)	Normative comparison (n=52)	IPP/PPI – master’s level therapists CC – not stated	13.31 months	53.4% girls 46.6% boys	U.S. (High)
Toth 2002 ¹⁹ / RefID 252	24% N/EA 21% N 18% PA/N/EA 14% EA 10% PA/EA 5% PA 5% PA/N 1% SA/PA/N/EA 1% SA/N/EA 1% SA/N	Preschooler-parent psychotherapy (PPP) (n=23) Psychoeducational home visitation (PHV) (n=34) Community standard (n=30)	Normative control (n=35)	Master’s level therapists	PPP – 48 months PHV – 47.86 months CS – 49.16 months NC – 47.77 months	55.7% boys 44.3% girls	U.S. (High)
Meezan 1998	66% - PA 29.1% - severe N	Multifamily group therapy (MFGT)	Traditional family group therapy	Not stated	(2-11) years	Not stated	U.S. (High)

³⁷ / Refid 6976	24.1% - general N 24.1% - EA 10% - SA	(n=42)	(n=39)				
Shirk 2014 ³⁸ / Refid 6975	67% SA 58% CE-IPV 49% PA 47% EA	CBT (n=20)	Usual care (n=23)	Master's and doctoral level psychologists	CBT - 15.25 years Usual care – 15.69 years	CBT - 85% adolescent girls, 15% adolescent boys Usual care - 82.61% adolescent girls, 17.39 adolescent boys	U.S. (High)
Reams 1994 ²⁰ / Refid 6973	Play therapy: 48% EA 64% EN 44% PA 53% PN 24% SA	Play therapy (n=26)	Control (n=15)	12 therapists: all had bachelor's degree in education, psychology or nursing, 8 had a master's degree	Play therapy – 4.13 years Control – 4.17 years (3.5-5) years	Play therapy – 80% boys, 20% girls Control – 66.7% boys, 33.3% girls	U.S. (High)
B) Physical abuse & Neglect							
Runyon 2010 ³⁹ / RefID 246	PA	Combined Parent-Child Cognitive Behavioral Therapy (CPC-CBT) (n=34 c & n=24 p)	Parent-only CBT (n=26 c & 20 p)	Not stated	9.88 (7-13) years	CPC-CBT: 56% boys, 44% girls P-CBT: 50% girls, 50% boys	U.S. (High)
Kolko 1996b ⁴⁰ / RefID 5278	PA	Individual child or parent CBT (n=21) Family therapy (FT) (n=17)	Routine community services (RCS) (n=12)	5 with master's degree in social work or psychology, 1 with BA and 16 years of experience	8.6 (6-13) years	72.3% boys 27.7% girls	U.S. (High)
Nicol 1988 ³¹ / RefID 2053	PA	(n=38 families) Play therapy (n=not stated)	Focused case work (n=not stated)	Play therapy: Clinical psychologist Focused case work: social worker	4.8 (0-14) years	Not stated	UK (High)

Damra 2014 ⁴¹ / RefID 6725	PA	CBT with trauma-focus (n=9)	Wait list? (n=9) (received treatment after study completed)	Experts in psychotherapy and counseling	11.3 (10-12) years	100% boys	Jordan (Upper middle)
LeSure-Lester 2002 ⁴² / RefID 5198	PA & N	Cognitive behavioral training (n=6)	Active listening (n=6)	Psychologist	13.16 (12-16) years	100% adolescent boys	U.S. (High)
C) Neglect-specific therapies							
Jacobson 2014 ⁴³	N	Dyadic music therapy (n=10 child-parent dyads)	Treatment as usual (n=9 child-parent dyads)	Trained music therapists	DMT – 6.78 years TAU – 8.44 years (5-12) years	DMT – 56.6% girls, 44.4% boys TAU – 56.6% girls, 44.4% boys	Denmark (High)

Parenting interventions, clinic- or community							
Study ID	Maltreatment type	Intervention (n at baseline)	Comparison (n at baseline)	Intervention delivered by	Child mean age (Age range of inclusion criteria)	Participant gender	Country (Income Level, World Bank)
Child maltreatment							
Thomas 2012 ⁴⁵ / RefID 1904	CM	Standard Parent child interaction therapy (SPCIT) (n=61)	Wait list (n=91)	Masters and doctoral psychologists trained in PCIT	4.57 years	70.4% boys 29.6% girls	Australia (High)
Thomas 2011 ⁴⁴ / RefID 183	CM	Parent child interaction therapy (PCIT) (n=99)	Wait list (n=51)	PCIT trained psychologists	5 years	71% boys 29% girls	Australia (High)
Egan 1983 ³³ / Refid 6970	CM	Stress management (n=11) Child management (n=11) Stress/child management (n=9)	Treatment as usual or wait list (n=10)	Not stated	(2-12) years	Not stated	U.S. (High)
Physical abuse & neglect							

Chaffin 2004 ⁴⁶ / RefID 210	PA	PCIT only (n=102) Enhanced PCIT (n=?)	Community control (n=114)	Master's level therapists	(4-12) years	Not stated	U.S. (High)
Chaffin 2009 ⁴⁷ / Ref ID 211 Chaffin 2011 ⁵⁵ / Ref ID 208	PA & N	Motivational orientation + PCIT (n=34) Standard orientation + PCIT (n=36)	Standard orientation + parenting group (n=42) Motivational orientation + parenting group (n=n=41)	Master's level therapists	(2.5-12) years	Not stated	U.S. (High)
Neglect-specific							
Saldana 2015 ⁴⁸ / RefID 1333	N & substance abuse	Families Actively Improving Relationships Program (FAIR) (n=18)	TAU (n=13)	Counselors, skills coaches, resource builder, clinical supervisor	Not stated	Not stated	U.S. (High)

Parenting interventions, home-based							
Study ID / RefID	Maltreatment type	Intervention (n at baseline)	Comparison (n at baseline)	Intervention delivered by	Child mean age (Age range of inclusion criteria)	Participant gender	Country (Income Level, World Bank)
Chaffin 2012 ²⁹ / Refid 209 Chaffin 2012 ⁵⁶ / RefID 1909	CM N, PA, SA	Safe Care/Coached (n=25% of cases) Safe Care/Uncoached (28% of cases)	Services as usual/Coached (n=24% of cases) Services as usual/Uncoached (23% cases)	Home visitors were trained, but education level not stated	N/A – participants adults	N/A – participants adults Inclusion criteria are for preschool aged children in home	U.S. (High)
Spieker 2012 ²⁵ / RefID 1902 Oxford 2013 ⁵⁷ / RefID 2735 Oxford 2016 ⁵⁸ / RefID 2408	CM	Promoting first relationships (PFR) (n=105)	Early education support (EES) (n=105)	PFR - Master's level home providers Bachelor's level community providers	18.01 (10-24) months	56% boys, 44% girls	U.S. (High)

Pasalich 2016 ⁵⁹ / Refid 6971							
Moss 2011 ⁴⁹ / Refid 243	CM N – 72% PA – 7% SA – 3% N/PA – 16% N/SA – 2%	Standard agency services + attachment oriented home visits (n=35)	Standard agency services (n=33)	Varied: 3 had bachelor level degrees in psychology, one had master's degree.	3.35 years (12-71 months)	61.2% boys 38.8% girls	Canada (High)
Toth 2002 ¹⁹ / RefID 252	24% N/EA 21% N 18% PA/N/EA 14% EA 10% PA/EA 5% PA/N 5% PA/N 1% SA/PA/N / EA 1% SA/N/EA 1% SA/N	Psychoeducational home visitation (PHV) (n=34) Preschooler-parent psychotherapy (PPP) (n=23)	Normative control (n=35) Community standard (n=30)	Master's level therapists	PPP – 48 months PHV – 47.86 months CS – 49.16 months NC – 47.77 months	55.7% boys 44.3% girls	U.S. (High)
Cicchetti 2006 ²² / RefID 213 Stronach 2013 ⁵⁴ / Refid 1663	84.6% N 69.2% EA 8% PA	Psychoeducational parenting intervention (PPI) (n=24) Infant-parent psychotherapy (IPP) (n=34)	Normative comparison (n=52) Community controls (CS) (n=81)	IPP/PPI – master's level therapists CC – not stated	13.31 months	53.4% girls 46.6% boys	U.S. (High)
Brunk 1987 ³⁰ / RefID 6001	CM PA EA N	Multisystemic therapy (MST) (n=16)	Parent training (n=17)	Master's level psychologists	MST children with N – 9.8 years Children in other groups – 6.8 years	55% boys 45% girls	U.S. (High)
Physical abuse & neglect							
MacMillan 2005 ¹⁷ / RefID 237	PA N	Standard care + home visitation by a public-health	Standard care (n=74)	Public health nurse	Intervention – 5.1 years Control –	Intervention – 42% boys 58% girls	Canada (High)

		nurse (n=89)			5.2 years	Control – 61% boys 39% girls	
Swenson 2010 ²⁸ / RefID 179	PA	Multisystemic therapy for child abuse and neglect (MST- CAN) (n=44)	Enhanced outpatient treatment (EOT) (n=42)		13.88 (10- 17) years	55.8% adolescen t girls 44.2% adolescen t boys	U.S. (High)
Jouriles 2010 ⁵⁰ / RefID 4148	PA & N PA – 63% N – 25% PA, N – 12%	Project Support (PS) (n=17)	Treatment as usual (TAU) (n=18)	PS - Master's- level licensed mental health providers and one or more undergradu ate or post- undergradu ate student	5.4 (3-8) years	Not stated	U.S. (High)
Mast 2014 ⁵¹ / RefID 1565	PA (abusive head trauma)	Internet-based Interacting Together Everyday: Recovery After Childhood TBI (InTERACT) (n=4 families)	Internet Resource Comparison (IRC) (n=3 families)	Master's level research personnel	(3-9) years	Not stated	U.S. (High)
Neglect-specific							
Bernard 2015 ³⁴ / Refid 3026 Companion paper: Lind 2014 ⁶⁰ / Ref ID 1572	N (allegati on, not substant iated)	Attachment and biobehavioral catchup (ABC) (n=19)	Development education for families (DEF) (n=21) Low-risk comparison (LRC) (n=30)	Trained parent coaches	ABC – 4.94 (4.12- 6.13) DEF – 4.83 (3.99- 6.20)	ABC: 74% boys 26% girls DEF: 62% boys 38% girls LRC: 37% boys 63% girls	U.S. (High)

Child-focused skills development							
Study ID	Maltreatment type	Intervention (n at baseline)	Comparison (n at baseline)	Intervention delivered by	Child mean age (Age range of inclusion criteria)	Participant gender	Country (Income Level, World Bank)
Fantuzzo 1996 ²³ / RefID 4753	PA & N PA – 15%	Resilient peer treatment (RPT) (n=10)	Attention control (AC) (n=10)	Parent volunteers support play	4.46 (3.80- 5.10) years	58.7% girls 44.2% boys	U.S. (High)

	Physical N – 23.9% PA & Physical N – 8.7%			between "resilient peer" and target child			
Fantuzzo 1988 ⁵² / RefID 6966	PA & N – 46.2% PA – 23.1%	Peer initiation (n=12) Adult initiation (n=12)	Control (n=12)	Play supported by a "peer confederate" or teacher's aide	4.3 (3.1-5.3) years	71.8% boys, 28.2% girls	U.S. (High)

Appendix IV: Risk of bias tables

Risk of Bias for Psychotherapeutic Studies								
Risk of Bias for Parenting Interventions								
Author year	Sequence Generation	Allocation Concealment	Blinding of Participants/ Providers	Blinding of Outcome Assessment	Incomplete Outcomes	Selective Reporting	Other Bias	Overall rating
A) Clinic or community-based								
Child maltreatment								
Cicchetti, 2006 {#213} Companion paper: Stronach, 2013 {#6972}	U	U	U	L	H	L	L	U
Thomas, 2012 {#1904}	U	U	U	U	H	L	L	U
Thomas, 2011 {#183}	U	U	U	U	L	L	L	U
Egan, 1983 {#6970}	U	U	U	L	U	L	L	U
Physical abuse & neglect								
Chaffin, 2004 {#210}	U	U	U	L	L	L	L	U
Chaffin, 2011 {#208}; Chaffin, 2009 {#211}	U	U	U	L	L	L	L	U
Saldana, 2015 {#1333}	U	U	U	U	H	L	L	U
B) Home-based								
Chaffin, 2012 {#209}, Companion paper Chaffin, 2012 {#1909}	U	U	U	U	L	L	L	U
Spieker, 2012 {#1902} Companion papers: Oxford, 2013 {#2735}; Pasalich,	L	U	U	L	L	L	L	U

2016 {#6971}; Oxford, 2016 {#2408}								
Moss, 2011 {#243}	U	U	U	L	L	L	L	U
Toth, 2002 {252}	U	U	U	L	H	L	U	U
Cicchetti, 2006 {#213} Companion paper: Stronach, 2013 {#6972}	U	U	U	L	H	L	L	U
Brunk, 1987 {#6001}	U	U	U	L	L	H	H	U
Physical abuse & neglect								
MacMillan, 2005 {#237}	L	L	U	L	L	L	L	L
Swenson, 2010 {#179}	L	L	H	U	L	L	L	U
Jouriles, 2010 {#4148}	L	U	H	H	L	L	L	U
Mast, 2014 {#1565}	U	U	U	U	L	L	L	U
Neglect-specific								
Bernard, 2015 {#3026} Companion papers: Bernard, 2015 {#1465}; Lind, 2014 {#1572}	U	U	L	L	U	L	L	U
U=Uncertain risk of bias; H=High risk of bias; L=low risk of bias								

Risk of Bias for Child-focused Skills Development Studies								
Author, year	Sequence Generation	Allocation Concealment	Blinding of Participants/ Providers	Blinding of Outcome Assessment	Incomplete Outcomes	Selective Reporting	Other Bias	Overall
Physical abuse & neglect								

Fantuzzo, 1996 {#4753}	U	U	U	U	L	L	L	U
Fantuzzo, 1988 {#6966}	U	U	U	U	U	L	L	U
U=Uncertain risk of bias; H=High risk of bias; L=low risk of bias								

Appendix V

Wrong population (n=163)

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Wrong intervention target (n=108)

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Wrong study design (n=141)

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Wrong outcomes (n=36)

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Web Annex 3b: GRADE tables – Psychosocial interventions for children exposed to maltreatment

Counseling/therapy

Child maltreatment

Child-Parent psychotherapy compared to Community Control for Child Maltreatment

Patient or population: Toth 2002: Mothers (n=122) and preschoolers (n=68 boys and n=55 girls). 87 of the families (71%) had documents history of maltreatment and 35 of the families lacked such history. Cicchetti 2006: Infants (n=137 infants; ~60 boys, 77 girls) and their mothers who were from maltreating families (families identified by child protection services).

Setting: Country: U.S. Setting of intervention: Mt. Hope Family Center (community-based research center affiliated with the University of Rochester)

Intervention: Child-parent psychotherapy

Comparison: Community standard comparison (standard services and resources comparison). "Consistent with other treatment studies, a community standard (CS) comparison group was used to determine the effects of standard services and resources available through the Department of Social Services on child and family functioning." Toth 2002: 60% of the children in the CS condition were in full- or part-time daycare and 50% were enrolled in a pre-school program. In addition, 13% of the CS children participants in individual psychotherapy over the treatment period." Cicchetti 2006: "Families may have continued to be monitored by CPS and may have participated in other preventive services programs"

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	No of participants (studies)	Quality of the evidence (GRADE)	Comments
	Risk with Community Control	Risk with Child-Parent psychotherapy				
Change in Parent-Child Interaction assessed with: MGRS	The mean change in Parent-Child Interaction was 0.9	The mean change in Parent-Child Interaction in the intervention group was 0.79 higher (0.35 higher to 1.23 higher)	-	53 (1 RCT) ^a	⊕○○○ VERY LOW ^b	Modified Bickham and Fiese's global relationship expectation scale (MGRS), rated as very low(1), relationship dissatisfying, unpredictable, dangerous to very high(5), relationship as fulfilling & rewarding. Higher values are better. Calculated important difference shows a large effect (SMD = 0.95)

Child-Parent psychotherapy compared to Community Control for Child Maltreatment

Patient or population: Toth 2002: Mothers (n=122) and preschoolers (n=68 boys and n=55 girls). 87 of the families (71%) had documents history of maltreatment and 35 of the families lacked such history. Cicchetti 2006: Infants (n=137 infants; ~60 boys, 77 girls) and their mothers who were from maltreating families (families identified by child protection services).

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Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	No of participants (studies)	Quality of the evidence (GRADE)	Comments
	Risk with Community Control	Risk with Child-Parent psychotherapy				
Internalizing symptoms assessed with: CBCL-INT follow up: mean 12 months	The mean internalizing symptoms was 53.1 ^c	The mean internalizing symptoms in the intervention group was 1.64 higher (3.52 lower to 6.8 higher)	-	76 (1 RCT) ^d	⊕○○○ VERY LOW e,f	Child Behavior Checklist (CBCL-Int), T scores (range 0-100) < 60 are considered normal range, 60-63 as borderline, and scores greater than 63 are in the clinical range. Lower values are better. Calculated important difference shows no effect (SMD = 0.13)
Externalizing symptoms assessed with: CBCL-EXT follow up: mean 12 months	The mean externalizing symptoms was 53.47 ^c	The mean externalizing symptoms in the intervention group was 1.05 higher (3.58 lower to 5.68 higher)	-	76 (1 RCT) ^d	⊕○○○ VERY LOW e,f	Child Behavior Checklist (CBCL-Ext), T scores (range 0-100) < 60 are considered normal range, 60-63 as borderline, and scores greater than 63 are in the clinical range. Lower values are better. Calculated important difference shows no effect (SMD = 0.10)

*The risk in the intervention group (and its 95% confidence interval) is based on the assumed risk in the comparison group and the **relative effect** of the intervention (and its 95% CI).

CI: Confidence interval; MD: Mean difference

Child-Parent psychotherapy compared to Community Control for Child Maltreatment

Patient or population: Toth 2002: Mothers (n=122) and preschoolers (n=68 boys and n=55 girls). 87 of the families (71%) had documents history of maltreatment and 35 of the families lacked such history. Cicchetti 2006: Infants (n=137 infants; ~60 boys, 77 girls) and their mothers who were from maltreating families (families identified by child protection services).

Setting: Country: U.S. Setting of intervention: Mt. Hope Family Center (community-based research center affiliated with the University of Rochester)

Intervention: Child-parent psychotherapy

Comparison: Community standard comparison (standard services and resources comparison). "Consistent with other treatment studies, a community standard (CS) comparison group was used to determine the effects of standard services and resources available through the Department of Social Services on child and family functioning." Toth 2002: 60% of the children in the CS condition were in full- or part-time daycare and 50% were enrolled in a pre-school program. In addition, 13% of the CS children participants in individual psychotherapy over the treatment period." Cicchetti 2006: "Families may have continued to be monitored by CPS and may have participated in other preventive services programs"

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	No of participants (studies)	Quality of the evidence (GRADE)	Comments
	Risk with Community Control	Risk with Child-Parent psychotherapy				

GRADE Working Group grades of evidence

High quality: We are very confident that the true effect lies close to that of the estimate of the effect

Moderate quality: We are moderately confident in the effect estimate: The true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different

Low quality: Our confidence in the effect estimate is limited: The true effect may be substantially different from the estimate of the effect

Very low quality: We have very little confidence in the effect estimate: The true effect is likely to be substantially different from the estimate of effect

a. Toth, 2002

b. Serious concerns for risk of bias and sample size <300.

c. Data at post-treatment / Follow-up only. Baseline data not provided.

d. Cicchetti, 2006

e. Serious concerns regarding risk of bias.

f. The sample size is <300 and effect estimate is imprecise.

Multi-Family group therapy compared to Traditional family therapy for Child Maltreatment

Patient or population: 81 families referred by the Los Angeles County Department of Children and Family Services (DCFS) with at least one child between the ages of 2-11 years. Reasons for referral: physical abuse (almost two thirds), severe neglect (29.1%), general neglect (24.1%), caretaker absence (13.9%), emotional abuse (24.1%). Some children had exposures to sexual abuse (10%), although this was not the reason for referral. Families could not have incomes greater than 185% of the poverty line; cases in which sexual abuse was the primary allegation were not eligible.

Setting: Country: U.S. Intervention setting: Community setting, not specified.

Intervention: Multi-Family group therapy

Comparison: Traditional family therapy

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	No of participants (studies)	Quality of the evidence (GRADE)	Comments
	Risk with Traditional family therapy	Risk with Multi-Family group therapy				
Change in Internalizing symptoms assessed with: CBCL-INT	The mean change in Internalizing symptoms was -2.18	The mean change in Internalizing symptoms in the intervention group was 0.45 lower (4.97 lower to 4.07 higher)	-	62 (1 RCT) ^a	⊕○○○ VERY LOW b,c	Child Behavior Checklist (CBCL-Int), T scores (range 0-100) < 60 are considered normal range, 60-63 as borderline, and scores greater than 63 are in the clinical range. Lower values are better. Calculated important difference shows no effect (SMD = -0.05)
Change in Externalizing symptoms assessed with: CBCL-EXT	The mean change in Externalizing symptoms was -2.75	The mean change in Externalizing symptoms in the intervention group was 0.66 lower (5.74 lower to 4.42 higher)	-	62 (1 RCT) ^a	⊕○○○ VERY LOW b,c	Child Behavior Checklist (CBCL-Ext), T scores less than 60 are considered in the normal range, 60-63 represent borderline, and scores greater than 63 are in the clinical range. Lower values are better. Calculated important difference shows no effect (SMD = -0.06)
Change in Depression assessed with: CBCL-DEP	The mean change in Depression was -1.92	The mean change in Depression in the intervention group was 0.82 higher (2.01 lower to 3.65 higher)	-	62 (1 RCT) ^a	⊕○○○ VERY LOW b,c	Child Behavior Checklist (CBCL-Depression subscale), T scores (range 0-100) <60 are considered in the normal range, 60-63 as borderline, and scores greater than 63 are in the clinical range. Lower values are better. Calculated important difference shows no effect (SMD = 0.14)

Multi-Family group therapy compared to Traditional family therapy for Child Maltreatment

Patient or population: 81 families referred by the Los Angeles County Department of Children and Family Services (DCFS) with at least one child between the ages of 2-11 years. Reasons for referral: physical abuse (almost two thirds), severe neglect (29.1%), general neglect (24.1%), caretaker absence (13.9%), emotional abuse (24.1%). Some children had exposures to sexual abuse (10%), although this was not the reason for referral. Families could not have incomes greater than 185% of the poverty line; cases in which sexual abuse was the primary allegation were not eligible.

Setting: Country: U.S. Intervention setting: Community setting, not specified.

Intervention: Multi-Family group therapy

Comparison: Traditional family therapy

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	No of participants (studies)	Quality of the evidence (GRADE)	Comments
	Risk with Traditional family therapy	Risk with Multi-Family group therapy				

*The risk in the intervention group (and its 95% confidence interval) is based on the assumed risk in the comparison group and the **relative effect** of the intervention (and its 95% CI).

CI: Confidence interval; MD: Mean difference

GRADE Working Group grades of evidence

High quality: We are very confident that the true effect lies close to that of the estimate of the effect

Moderate quality: We are moderately confident in the effect estimate: The true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different

Low quality: Our confidence in the effect estimate is limited: The true effect may be substantially different from the estimate of the effect

Very low quality: We have very little confidence in the effect estimate: The true effect is likely to be substantially different from the estimate of effect

a. Meezan, 1998

b. Serious concerns regarding risk of bias.

c. The sample size is <300 and effect estimate is imprecise.

Cognitive Behavioral therapy for Adolescents compared to Usual care for Child Maltreatment

Patient or population: Participants were 43 adolescents (34 adolescent girls) between the ages of 13-17 years who were referred for outpatient treatment. All eligible adolescents reported at least one incident of physical abuse (49%), witnessing family violence (58%), sexual abuse (67%), and verbal/emotional abuse (47%).

Setting: Country: U.S. Intervention setting: outpatient treatment at a large urban community mental health center with two clinics serving children and adolescents

Intervention: Cognitive Behavioral therapy for Adolescents

Comparison: Usual care (UC). Therapists in the usual care group used treatment strategies and procedures that they regularly used and believed to be effective in their clinical practice. UC therapists described themselves to be eclectic, with client-centered, psychodynamic, and family interventions favored.

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	No of participants (studies)	Quality of the evidence (GRADE)	Comments
	Risk with Usual care	Risk with Cognitive Behavioral therapy for Adolescents				
Change in Depression assessed with: BDI-II	The mean change in Depression was 12.83	The mean change in Depression in the intervention group was 4.33 lower (12.18 lower to 3.52 higher)	-	43 (1 RCT) ^a	⊕○○○ VERY LOW b,c	Beck Depression Inventory – Second Ed (BDI-II), a 21-item (scored 0-3) adolescent self-report of depression. Lower values are better. Calculated important difference shows a small effect (SMD = - 0.32)

*The risk in the intervention group (and its 95% confidence interval) is based on the assumed risk in the comparison group and the **relative effect** of the intervention (and its 95% CI).

CI: Confidence interval; MD: Mean difference

GRADE Working Group grades of evidence

High quality: We are very confident that the true effect lies close to that of the estimate of the effect

Moderate quality: We are moderately confident in the effect estimate: The true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different

Low quality: Our confidence in the effect estimate is limited: The true effect may be substantially different from the estimate of the effect

Very low quality: We have very little confidence in the effect estimate: The true effect is likely to be substantially different from the estimate of effect

a. Shirk, 2014

b. Serious concerns regarding risk of bias.

c. The sample size is <300 and effect estimate is imprecise.

Play therapy intervention compared to Control for Child Maltreatment

Patient or population: 36 preschoolers (10 girls) between the ages of 3.5 and 5 years of age who attended a therapeutic nursery for maltreated children. Children were identified by their case manager as either a victim or the sibling a victim of physical abuse, sexual abuse, physical neglect, emotional neglect, and/or emotional abuse.

Setting: Country: U.S. Intervention setting: A therapeutic nursery serving maltreated children

Intervention: Play therapy intervention (with ongoing services, referred to as 'milieu therapy')

Comparison: Control (milieu therapy only)

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	N of participants (studies)	Quality of the evidence (GRADE)	Comments
	Risk with Control	Risk with Play therapy intervention				
Externalizing symptoms assessed with: ECBI	The mean externalizing symptoms was 15.56 ^a	The mean externalizing symptoms in the intervention group was 0.73 higher (5.69 lower to 7.15 higher)	-	36 (1 RCT) ^b	⊕○○○ VERY LOW c,d	Eyberg Child Behavior Inventory (ECBI) is a 36-item scale that reflects common behaviour problems seen in children. A "yes" or "no" indicates how much the behavior is a problem (Possible range 0-36). Lower values are better. Calculated important difference shows no effect (SMD = 0.08)
Anxiety symptoms assessed with: PBQ	The mean anxiety symptoms was 4.77 ^a	The mean anxiety symptoms in the intervention group was 0.32 higher (2.11 lower to 2.75 higher)	-	36 (1 RCT) ^b	⊕○○○ VERY LOW c,d	Preschool Behavior Questionnaire (PBQ), a teacher report that yields a total score and three factor scores (hostility, anxiety, hyperactive) (scale 0-2). Score >17 indicates clinical range. Lower values are better. Calculated important difference shows no effect (SMD = 0.09)
Externalizing symptoms assessed with: ECBI follow up: mean 3 months	The mean externalizing symptoms was 12.87 ^a	The mean externalizing symptoms in the intervention group was 2.29 lower (8.71 lower to 4.13 higher)	-	36 (1 RCT) ^b	⊕○○○ VERY LOW c,d	Eyberg Child Behavior Inventory (ECBI) is a 36-item scale that reflects common behaviour problems seen in children. A "yes" or "no" indicates how much the behavior is a problem (Possible range 0-36). Lower values are better. Calculated important difference shows a small effect (SMD = -0.24)

Play therapy intervention compared to Control for Child Maltreatment

Patient or population: 36 preschoolers (10 girls) between the ages of 3.5 and 5 years of age who attended a therapeutic nursery for maltreated children. Children were identified by their case manager as either a victim or the sibling a victim of physical abuse, sexual abuse, physical neglect, emotional neglect, and/or emotional abuse.

Setting: Country: U.S. Intervention setting: A therapeutic nursery serving maltreated children

Intervention: Play therapy intervention (with ongoing services, referred to as 'milieu therapy')

Comparison: Control (milieu therapy only)

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	No of participants (studies)	Quality of the evidence (GRADE)	Comments
	Risk with Control	Risk with Play therapy intervention				
Anxiety symptoms assessed with: PBQ follow up: mean 3 months	The mean anxiety symptoms was 4.17 ^a	The mean anxiety symptoms in the intervention group was 0.31 lower (2.74 lower to 2.12 higher)	-	36 (1 RCT) ^b	⊕○○○ VERY LOW c,d	Preschool Behavior Questionnaire (PBQ), a teacher report that yields a total score and three factor scores (hostility, anxiety, hyperactive) (scale 0-2). Score >17 indicates clinical range. Lower values are better. Calculated important difference shows no effect (SMD = -0.08)

*The risk in the intervention group (and its 95% confidence interval) is based on the assumed risk in the comparison group and the **relative effect** of the intervention (and its 95% CI).

CI: Confidence interval; MD: Mean difference

GRADE Working Group grades of evidence

High quality: We are very confident that the true effect lies close to that of the estimate of the effect

Moderate quality: We are moderately confident in the effect estimate: The true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different

Low quality: Our confidence in the effect estimate is limited: The true effect may be substantially different from the estimate of the effect

Very low quality: We have very little confidence in the effect estimate: The true effect is likely to be substantially different from the estimate of effect

a. Data at post-treatment / Follow-up only. Baseline data not provided.

b. Reams, 1994

c. Serious concerns regarding risk of bias.

d. The sample size is <300 and effect estimate is imprecise.

Physical abuse & neglect

Individual Parent-Child Cognitive Behavioral therapy compared to Routine community services for Child Maltreatment

Patient or population: 55 physically maltreated children (13 girls, mean age of 8.6 years) and their parents or guardians. Child protection services caseworkers referred 87% of cases following incidents of physical abuse (n=20), physical maltreatment (n=15) or severe/frequent use of physical discipline or force having a high likelihood of physical injury (6).

Setting: Country: U.S. Intervention setting: Clinic, details not specified

Intervention: Individual Parent-Child Cognitive Behavioral therapy

Comparison: Routine community services (families were referred to the individually prescribed community services recommend by their caseworkers; services included home visits to provide support and information, family skills specialists who taught homemaking and related skills, and parenting information and support groups. Some treatment plans in this group involved up to 20 hours of home-based service per week for up to 3 months, whereas others involved services delivered on a once or twice per week basis for an indefinite time)

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	N _e of participants (studies)	Quality of the evidence (GRADE)	Comments
	Risk with Routine community services	Risk with Individual Parent-Child Cognitive Behavioral therapy				
Change in Internalizing symptoms assessed with: CBCL-INT	The mean change in Internalizing symptoms was -0.3	The mean change in Internalizing symptoms in the intervention group was 5.6 lower (12.79 lower to 1.59 higher)	-	30 (1 RCT) ^a	⊕○○○ VERY LOW b,c	Child Behavior Checklist (CBCL-Int), T scores (range 0-100) < 60 are considered normal range, 60-63 as borderline, and scores greater than 63 are in the clinical range. Lower values are better. Calculated important difference shows a medium effect (SMD = -0.58)
Change in Externalizing symptoms assessed with: CBCL-EXT	The mean change in Externalizing symptoms was -1.8	The mean change in Externalizing symptoms in the intervention group was 3.3 lower (11.09 lower to 4.49 higher)	-	30 (1 RCT) ^a	⊕○○○ VERY LOW b,c	Child Behavior Checklist (CBCL-Ext), T scores less than 60 are considered in the normal range, 60-63 represent borderline, and scores greater than 63 are in the clinical range. Lower values are better. Calculated important difference shows a small effect (SMD = -0.30)

Individual Parent-Child Cognitive Behavioral therapy compared to Routine community services for Child Maltreatment

Patient or population: 55 physically maltreated children (13 girls, mean age of 8.6 years) and their parents or guardians. Child protection services caseworkers referred 87% of cases following incidents of physical abuse (n=20), physical maltreatment (n=15) or severe/frequent use of physical discipline or force having a high likelihood of physical injury (6).

Setting: Country: U.S. Intervention setting: Clinic, details not specified

Intervention: Individual Parent-Child Cognitive Behavioral therapy

Comparison: Routine community services (families were referred to the individually prescribed community services recommend by their caseworkers; services included home visits to provide support and information, family skills specialists who taught homemaking and related skills, and parenting information and support groups. Some treatment plans in this group involved up to 20 hours of home-based service per week for up to 3 months, whereas others involved services delivered on a once or twice per week basis for an indefinite time)

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	No of participants (studies)	Quality of the evidence (GRADE)	Comments
	Risk with Routine community services	Risk with Individual Parent-Child Cognitive Behavioral therapy				
Change in Depression assessed with: CDI	The mean change in Depression was -2.7	The mean change in Depression in the intervention group was 2 higher (2.13 lower to 6.13 higher)	-	30 (1 RCT) ^a	⊕○○○ VERY LOW b,c	Child Depression Inventory (CDI), a 27 item scale (items scored on range 0-2). The total possible range for this scale is 0-54, where 19 or above indicates severe depression. Lower values are better. Calculated important difference shows a small effect (SMD = 0.37)
Recidivism assessed with: Abuse	200 per 1,000	50 per 1,000 (5 to 400)	OR 0.21 (0.02 to 2.67)	30 (1 RCT) ^a	⊕○○○ VERY LOW b,d	Based on number of events.
Change in Internalizing symptoms assessed with: CBCL-INT follow up: mean 3 months	The mean change in Internalizing symptoms was 4.9	The mean change in Internalizing symptoms in the intervention group was 10.3 lower (18.34 lower to 2.26 lower)	-	30 (1 RCT) ^a	⊕○○○ VERY LOW e	Child Behavior Checklist (CBCL-Int), T scores (range 0-100) < 60 are considered normal range, 60-63 as borderline, and scores greater than 63 are in the clinical range. Lower values are better. Calculated important difference shows a large effect (SMD = -0.96)

Individual Parent-Child Cognitive Behavioral therapy compared to Routine community services for Child Maltreatment

Patient or population: 55 physically maltreated children (13 girls, mean age of 8.6 years) and their parents or guardians. Child protection services caseworkers referred 87% of cases following incidents of physical abuse (n=20), physical maltreatment (n=15) or severe/frequent use of physical discipline or force having a high likelihood of physical injury (6).

Setting: Country: U.S. Intervention setting: Clinic, details not specified

Intervention: Individual Parent-Child Cognitive Behavioral therapy

Comparison: Routine community services (families were referred to the individually prescribed community services recommend by their caseworkers; services included home visits to provide support and information, family skills specialists who taught homemaking and related skills, and parenting information and support groups. Some treatment plans in this group involved up to 20 hours of home-based service per week for up to 3 months, whereas others involved services delivered on a once or twice per week basis for an indefinite time)

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	No of participants (studies)	Quality of the evidence (GRADE)	Comments
	Risk with Routine community services	Risk with Individual Parent-Child Cognitive Behavioral therapy				
Change in Externalizing symptoms assessed with: CBCL-EXT follow up: mean 3 months	The mean change in Externalizing symptoms was -2.0	The mean change in Externalizing symptoms in the intervention group was 5 lower (12.68 lower to 2.68 higher)	-	30 (1 RCT) ^a	⊕○○○ VERY LOW b,c	Child Behavior Checklist (CBCL-Ext), T scores less than 60 are considered in the normal range, 60-63 represent borderline, and scores greater than 63 are in the clinical range. Lower values are better. Calculated important difference shows a medium effect (SMD = -0.46)
Change in Depression assessed with: CDI follow up: mean 3 months	The mean change in Depression was -4.2	The mean change in Depression in the intervention group was 2 higher (1.38 lower to 5.38 higher)	-	30 (1 RCT) ^a	⊕○○○ VERY LOW b,c	Child Depression Inventory (CDI), a 27 item scale (items scored on range 0-2). The total possible range for this scale is 0-54, where 19 or above indicates severe depression. Lower values are better. Calculated important difference shows a medium effect (SMD = 0.48)

Individual Parent-Child Cognitive Behavioral therapy compared to Routine community services for Child Maltreatment

Patient or population: 55 physically maltreated children (13 girls, mean age of 8.6 years) and their parents or guardians. Child protection services caseworkers referred 87% of cases following incidents of physical abuse (n=20), physical maltreatment (n=15) or severe/frequent use of physical discipline or force having a high likelihood of physical injury (6).

Setting: Country: U.S. Intervention setting: Clinic, details not specified

Intervention: Individual Parent-Child Cognitive Behavioral therapy

Comparison: Routine community services (families were referred to the individually prescribed community services recommend by their caseworkers; services included home visits to provide support and information, family skills specialists who taught homemaking and related skills, and parenting information and support groups. Some treatment plans in this group involved up to 20 hours of home-based service per week for up to 3 months, whereas others involved services delivered on a once or twice per week basis for an indefinite time)

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	No of participants (studies)	Quality of the evidence (GRADE)	Comments
	Risk with Routine community services	Risk with Individual Parent-Child Cognitive Behavioral therapy				
Change in Internalizing symptoms assessed with: CBCL-INT follow up: mean 12 months	The mean change in Internalizing symptoms was -3.8	The mean change in Internalizing symptoms in the intervention group was 3.1 lower (10.57 lower to 4.37 higher)	-	30 (1 RCT) ^a	⊕○○○ VERY LOW b,c	Child Behavior Checklist (CBCL-Int), T scores (range 0-100) < 60 are considered normal range, 60-63 as borderline, and scores greater than 63 are in the clinical range. Lower values are better. Calculated important difference shows a small effect (SMD = -0.32)
Change in Externalizing symptoms assessed with: CBCL-EXT follow up: mean 12 months	The mean change in Externalizing symptoms was -0.5	The mean change in Externalizing symptoms in the intervention group was 4.1 lower (12.93 lower to 4.73 higher)	-	30 (1 RCT) ^a	⊕○○○ VERY LOW b,c	Child Behavior Checklist (CBCL-Ext), T scores less than 60 are considered in the normal range, 60-63 represent borderline, and scores greater than 63 are in the clinical range. Lower values are better. Calculated important difference shows a small effect (SMD = -0.36)

Individual Parent-Child Cognitive Behavioral therapy compared to Routine community services for Child Maltreatment

Patient or population: 55 physically maltreated children (13 girls, mean age of 8.6 years) and their parents or guardians. Child protection services caseworkers referred 87% of cases following incidents of physical abuse (n=20), physical maltreatment (n=15) or severe/frequent use of physical discipline or force having a high likelihood of physical injury (6).

Setting: Country: U.S. Intervention setting: Clinic, details not specified

Intervention: Individual Parent-Child Cognitive Behavioral therapy

Comparison: Routine community services (families were referred to the individually prescribed community services recommend by their caseworkers; services included home visits to provide support and information, family skills specialists who taught homemaking and related skills, and parenting information and support groups. Some treatment plans in this group involved up to 20 hours of home-based service per week for up to 3 months, whereas others involved services delivered on a once or twice per week basis for an indefinite time)

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	No of participants (studies)	Quality of the evidence (GRADE)	Comments
	Risk with Routine community services	Risk with Individual Parent-Child Cognitive Behavioral therapy				
Change in Depression assessed with: CDI follow up: mean 12 months	The mean change in Depression was -4.3	The mean change in Depression in the intervention group was 1.3 higher (2.12 lower to 4.72 higher)	-	30 (1 RCT) ^a	⊕○○○ VERY LOW b,c	Child Depression Inventory (CDI), a 27 item scale (items scored on range 0-2). The total possible range for this scale is 0-54, where 19 or above indicates severe depression. Lower values are better. Calculated important difference shows a small effect (SMD = 0.31) (P=0.46)
Recidivism assessed with: Abuse follow up: mean 12 months	250 per 1,000	80 per 1,000 (13 to 379)	OR 0.26 (0.04 to 1.83)	37 (1 RCT) ^a	⊕○○○ VERY LOW b,d	Based on number of events.

*The risk in the intervention group (and its 95% confidence interval) is based on the assumed risk in the comparison group and the **relative effect** of the intervention (and its 95% CI).

CI: Confidence interval; MD: Mean difference; OR: Odds ratio

Individual Parent-Child Cognitive Behavioral therapy compared to Routine community services for Child Maltreatment

Patient or population: 55 physically maltreated children (13 girls, mean age of 8.6 years) and their parents or guardians. Child protection services caseworkers referred 87% of cases following incidents of physical abuse (n=20), physical maltreatment (n=15) or severe/frequent use of physical discipline or force having a high likelihood of physical injury (6).

Setting: Country: U.S. Intervention setting: Clinic, details not specified

Intervention: Individual Parent-Child Cognitive Behavioral therapy

Comparison: Routine community services (families were referred to the individually prescribed community services recommend by their caseworkers; services included home visits to provide support and information, family skills specialists who taught homemaking and related skills, and parenting information and support groups. Some treatment plans in this group involved up to 20 hours of home-based service per week for up to 3 months, whereas others involved services delivered on a once or twice per week basis for an indefinite time)

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	No of participants (studies)	Quality of the evidence (GRADE)	Comments
	Risk with Routine community services	Risk with Individual Parent-Child Cognitive Behavioral therapy				

GRADE Working Group grades of evidence

High quality: We are very confident that the true effect lies close to that of the estimate of the effect

Moderate quality: We are moderately confident in the effect estimate: The true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different

Low quality: Our confidence in the effect estimate is limited: The true effect may be substantially different from the estimate of the effect

Very low quality: We have very little confidence in the effect estimate: The true effect is likely to be substantially different from the estimate of effect

a. Kolko,1996

b. Serious concerns regarding risk of bias.

c. The sample size is <300 and effect estimate is imprecise.

d. The sample size / number of events are <300 and effect estimate is imprecise.

e. Serious concerns for risk of bias and sample size <300.

Combined Parent-Child Cognitive Behavioral therapy compared to Parent only CBT for Child Maltreatment

Patient or population: 60 children (ages 7-13, 38 girls) and 44 caregivers. Parents with either a CPS allegation against them that was substantiated (53.3%) or acknowledged physical punishment and their children. Children had to meet one of the following symptom criteria a) endorsement of four PTSD symptoms or b) elevation on at least one externalizing behaviour subscale on the behavior problems checklist.

Setting: Country: U.S. Intervention setting: Medical school-based child abuse clinic

Intervention: Combined Parent-Child Cognitive Behavioral therapy

Comparison: Parent only CBT

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	No of participants (studies)	Quality of the evidence (GRADE)	Comments
	Risk with Parent only CBT	Risk with Combined Parent-Child Cognitive Behavioral therapy				
Change in Internalizing symptoms assessed with: CBCL-INT	The mean change in Internalizing symptoms was -3.5	The mean change in Internalizing symptoms in the intervention group was 1.38 higher (1.35 lower to 4.11 higher)	-	60 (1 RCT) ^a	⊕○○○ VERY LOW b,c	Child Behavior Checklist (CBCL-Int), T scores (range 0-100) < 60 are considered normal range, 60-63 as borderline, and scores greater than 63 are in the clinical range. Lower values are better. Calculated important difference shows a small effect (SMD = 0.26)
Change in Externalizing symptoms assessed with: CBCL-EXT	The mean change in Externalizing symptoms was -6.57	The mean change in Externalizing symptoms in the intervention group was 3.27 higher (0.77 lower to 7.31 higher)	-	60 (1 RCT) ^a	⊕○○○ VERY LOW b,c	Child Behavior Checklist (CBCL-Ext), T scores (range 0-100) < 60 are considered normal range, 60-63 as borderline, and scores greater than 63 are in the clinical range. Lower values are better. Calculated important difference shows a small effect (SMD = 0.41)

Combined Parent-Child Cognitive Behavioral therapy compared to Parent only CBT for Child Maltreatment

Patient or population: 60 children (ages 7-13, 38 girls) and 44 caregivers. Parents with either a CPS allegation against them that was substantiated (53.3%) or acknowledged physical punishment and their children. Children had to meet one of the following symptom criteria a) endorsement of four PTSD symptoms or b) elevation on at least one externalizing behaviour subscale on the behavior problems checklist.

Setting: Country: U.S. Intervention setting: Medical school-based child abuse clinic

Intervention: Combined Parent-Child Cognitive Behavioral therapy

Comparison: Parent only CBT

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	No of participants (studies)	Quality of the evidence (GRADE)	Comments
	Risk with Parent only CBT	Risk with Combined Parent-Child Cognitive Behavioral therapy				
Change in PTSD symptoms assessed with: K-SADS-PL	The mean change in PTSD symptoms was - 2.43	The mean change in PTSD symptoms in the intervention group was 1.25 lower (2.06 lower to 0.44 lower)	-	60 (1 RCT) ^a	⊕○○○ VERY LOW d	Kiddie-Sads-Present and Lifetime Version (K-SADS-PL); 120 items, with number of symptoms representing the Reexperiencing, Avoidance, and Hypervigilance symptoms. Lower values are better. Calculated important difference shows a large effect (SMD = -0.82)

*The risk in the intervention group (and its 95% confidence interval) is based on the assumed risk in the comparison group and the **relative effect** of the intervention (and its 95% CI).

CI: Confidence interval; MD: Mean difference

GRADE Working Group grades of evidence

High quality: We are very confident that the true effect lies close to that of the estimate of the effect

Moderate quality: We are moderately confident in the effect estimate: The true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different

Low quality: Our confidence in the effect estimate is limited: The true effect may be substantially different from the estimate of the effect

Very low quality: We have very little confidence in the effect estimate: The true effect is likely to be substantially different from the estimate of effect

a. Runyon, 2010

b. Serious concerns regarding risk of bias.

c. The sample size is <300 and effect estimate is imprecise.

d. Serious concerns for risk of bias and sample size <300.

Trauma-focused Cognitive Behavioral therapy compared to Wait-list control for Child Maltreatment

Patient or population: 18 abused boys (ages 10-12 years) who were referred from Community Local Organizations and other local child protection institutions for their previous experience with physical abuse in their homes by one of their parents

Setting: Country: Jordan (lower middle income). Intervention setting: Child Care Unit (CCU) at the Institute for Family Health, Child Protection Association (CPA)

Intervention: Trauma-focused Cognitive Behavioral therapy

Comparison: Wait-list control

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	N of participants (studies)	Quality of the evidence (GRADE)	Comments
	Risk with Wait-list control	Risk with Trauma-focused Cognitive Behavioral therapy				
Change in PTSD symptoms assessed with: PTSS-C	The mean change in PTSD symptoms was - 0.35	The mean change in PTSD symptoms in the intervention group was 10.31 lower (11.29 lower to 9.33 lower)	-	18 (1 RCT) ^a	⊕○○○ VERY LOW b	Post-traumatic Stress Symptoms in Children (PTSS-C), a 30-item instrument (score: yes/no), with total scores ranging between 0 and 30 (0-10 low), (11-20 moderate), and (21-30 high-severe). Lower values are better. Calculated important difference shows a large effect (SMD = -9.22) (P<0.00001)
Change in Depression assessed with: CDI	The mean change in Depression was - 0.23	The mean change in Depression in the intervention group was 16.1 lower (18.55 lower to 13.65 lower)	-	18 (1 RCT) ^a	⊕○○○ VERY LOW b	Child Depression Inventory (CDI), a 26-item scale (1 item suicidality removed, scored 0-2), with total scores ranging between 0 and 52. Lower values are better. Calculated important difference shows a large effect (SMD = -5.77) (P<0.00001)

Trauma-focused Cognitive Behavioral therapy compared to Wait-list control for Child Maltreatment

Patient or population: 18 abused boys (ages 10-12 years) who were referred from Community Local Organizations and other local child protection institutions for their previous experience with physical abuse in their homes by one of their parents

Setting: Country: Jordan (lower middle income). Intervention setting: Child Care Unit (CCU) at the Institute for Family Health, Child Protection Association (CPA)

Intervention: Trauma-focused Cognitive Behavioral therapy

Comparison: Wait-list control

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	No of participants (studies)	Quality of the evidence (GRADE)	Comments
	Risk with Wait-list control	Risk with Trauma-focused Cognitive Behavioral therapy				
Change in PTSD symptoms assessed with: PTSS-C follow up: mean 4 months	The mean change in PTSD symptoms was - 0.57	The mean change in PTSD symptoms in the intervention group was 11.21 lower (12.28 lower to 10.14 lower)	-	18 (1 RCT) ^a	⊕○○○ VERY LOW b	Post-traumatic Stress Symptoms in Children (PTSS-C), a 30-item instrument (score: yes/no), with total scores ranging between 0 and 30 (0-10 low), (11-20 moderate), and (21-30 high-severe). Lower values are better. Calculated important difference shows a large effect (SMD = -9.21) (P<0.00001)
Change in Depression assessed with: CDI follow up: mean 4 months	The mean change in Depression was 0.0	The mean change in Depression in the intervention group was 15.33 lower (16.71 lower to 13.95 lower)	-	18 (1 RCT) ^a	⊕○○○ VERY LOW b	Child Depression Inventory (CDI), a 26-item scale (1 item suicidality removed, scored 0-2), with total scores ranging between 0 and 52. Lower values are better. Calculated important difference shows a large effect (SMD = -9.78) (p<0.00001)

*The risk in the intervention group (and its 95% confidence interval) is based on the assumed risk in the comparison group and the **relative effect** of the intervention (and its 95% CI).

CI: Confidence interval; MD: Mean difference

Trauma-focused Cognitive Behavioral therapy compared to Wait-list control for Child Maltreatment

Patient or population: 18 abused boys (ages 10-12 years) who were referred from Community Local Organizations and other local child protection institutions for their previous experience with physical abuse in their homes by one of their parents

Setting: Country: Jordan (lower middle income). Intervention setting: Child Care Unit (CCU) at the Institute for Family Health, Child Protection Association (CPA)

Intervention: Trauma-focused Cognitive Behavioral therapy

Comparison: Wait-list control

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	No of participants (studies)	Quality of the evidence (GRADE)	Comments
	Risk with Wait-list control	Risk with Trauma-focused Cognitive Behavioral therapy				

GRADE Working Group grades of evidence

High quality: We are very confident that the true effect lies close to that of the estimate of the effect

Moderate quality: We are moderately confident in the effect estimate: The true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different

Low quality: Our confidence in the effect estimate is limited: The true effect may be substantially different from the estimate of the effect

Very low quality: We have very little confidence in the effect estimate: The true effect is likely to be substantially different from the estimate of effect

a. Damra, 2014

b. Serious concerns for risk of bias and sample size <300.

Family therapy compared to Routine community services for Child Maltreatment

Patient or population: 55 physically maltreated children (13 girls, mean age of 8.6 years) and their parents or guardians. Child protection services caseworkers referred 87% of cases following incidents of physical abuse (n=20), physical maltreatment (n=15) or severe/frequent use of physical discipline or force having a high likelihood of physical injury (6).

Setting: Country: U.S. Intervention setting: Clinic, details not specified

Intervention: Family therapy

Comparison: Routine community services (families were referred to the individually prescribed community services recommend by their caseworkers; services included home visits to provide support and information, family skills specialists who taught homemaking and related skills, and parenting information and support groups. Some treatment plans in this group involved up to 20 hours of home-based service per week for up to 3 months, whereas others involved services delivered on a once or twice per week basis for an indefinite time)

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	No of participants (studies)	Quality of the evidence (GRADE)	Comments
	Risk with Routine community services	Risk with Family therapy				
Change in Internalizing symptoms assessed with: CBCL-INT	The mean change in Internalizing symptoms was -0.3	The mean change in Internalizing symptoms in the intervention group was 1 lower (8.17 lower to 6.17 higher)	-	27 (1 RCT) ^a	⊕○○○ VERY LOW b,c	Child Behavior Checklist (CBCL-Int), T scores (range 0-100) < 60 are considered normal range, 60-63 as borderline, and scores greater than 63 are in the clinical range. Lower values are better. Calculated important difference shows no effect (SMD = -0.11) (P=0.78)
Change in Externalizing symptoms assessed with: CBCL-EXT	The mean change in Externalizing symptoms was -1.8	The mean change in Externalizing symptoms in the intervention group was 1.5 higher (5.51 lower to 8.51 higher)	-	27 (1 RCT) ^a	⊕○○○ VERY LOW b,c	Assessed using the Child Behavior Checklist (CBCL-Ext). T scores (range 0-100) < 60 are considered normal range, 60-63 as borderline, and scores greater than 63 are in the clinical range. Lower values are better. Calculated important difference shows no effect (SMD = 0.17) (p=0.68)

Family therapy compared to Routine community services for Child Maltreatment

Patient or population: 55 physically maltreated children (13 girls, mean age of 8.6 years) and their parents or guardians. Child protection services caseworkers referred 87% of cases following incidents of physical abuse (n=20), physical maltreatment (n=15) or severe/frequent use of physical discipline or force having a high likelihood of physical injury (6).

Setting: Country: U.S. Intervention setting: Clinic, details not specified

Intervention: Family therapy

Comparison: Routine community services (families were referred to the individually prescribed community services recommend by their caseworkers; services included home visits to provide support and information, family skills specialists who taught homemaking and related skills, and parenting information and support groups. Some treatment plans in this group involved up to 20 hours of home-based service per week for up to 3 months, whereas others involved services delivered on a once or twice per week basis for an indefinite time)

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	№ of participants (studies)	Quality of the evidence (GRADE)	Comments
	Risk with Routine community services	Risk with Family therapy				
Change in Depression assessed with: CDI	The mean change in Depression was -2.7	The mean change in Depression in the intervention group was 1.8 higher (2.51 lower to 6.11 higher)	-	27 (1 RCT) ^a	⊕○○○ VERY LOW b,c	Children's Depression Inventory (CDI), a 27 item scale (items scored on range 0-2). The total possible range for this scale is 0-54, where 19 or above indicates severe depression. Lower values are better. Calculated important difference shows a small effect (SMD = 0.32) (P=0.41)
Recidivism assessed with: Abuse	200 per 1,000	59 per 1,000 (5 to 444)	OR 0.25 (0.02 to 3.19)	27 (1 RCT) ^a	⊕○○○ VERY LOW b,d	Based on number of events.
Change in Internalizing symptoms assessed with: CBCL-INT follow up: mean 3 months	The mean change in Internalizing symptoms was 4.9	The mean change in Internalizing symptoms in the intervention group was 7.2 lower (15.17 lower to 0.77 higher)	-	27 (1 RCT) ^a	⊕○○○ VERY LOW b,c	Child Behavior Checklist (CBCL-Int), T scores (range 0-100) < 60 are considered normal range, 60-63 as borderline, and scores greater than 63 are in the clinical range. Lower values are better. Calculated important difference shows a medium effect (SMD = -0.72) (P=0.08)

Family therapy compared to Routine community services for Child Maltreatment

Patient or population: 55 physically maltreated children (13 girls, mean age of 8.6 years) and their parents or guardians. Child protection services caseworkers referred 87% of cases following incidents of physical abuse (n=20), physical maltreatment (n=15) or severe/frequent use of physical discipline or force having a high likelihood of physical injury (6).

Setting: Country: U.S. Intervention setting: Clinic, details not specified

Intervention: Family therapy

Comparison: Routine community services (families were referred to the individually prescribed community services recommend by their caseworkers; services included home visits to provide support and information, family skills specialists who taught homemaking and related skills, and parenting information and support groups. Some treatment plans in this group involved up to 20 hours of home-based service per week for up to 3 months, whereas others involved services delivered on a once or twice per week basis for an indefinite time)

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	No of participants (studies)	Quality of the evidence (GRADE)	Comments
	Risk with Routine community services	Risk with Family therapy				
Change in Externalizing symptoms assessed with: CBCL-EXT follow up: mean 3 months	The mean change in Externalizing symptoms was -2.0	The mean change in Externalizing symptoms in the intervention group was 0.4 higher (6.79 lower to 7.59 higher)	-	27 (1 RCT) ^a	⊕○○○ VERY LOW b,c	Child Behavior Checklist (CBCL-Ext), T scores (range 0-100) < 60 are considered normal range, 60-63 as borderline, and scores greater than 63 are in the clinical range. Lower values are better. Calculated important difference shows no effect (SMD = 0.04) (P=0.91)
Change in Depression assessed with: CDI follow up: mean 3 months	The mean change in Depression was -4.2	The mean change in Depression in the intervention group was 2.3 higher (1.42 lower to 6.02 higher)	-	27 (1 RCT) ^a	⊕○○○ VERY LOW b,c	Children's Depression Inventory (CDI), a 27 item scale (items scored on range 0-2). The total possible range for this scale is 0-54, where 19 or above indicates severe depression. Lower values are better. Calculated important difference shows a medium effect (SMD = 0.47) (P=0.23)

Family therapy compared to Routine community services for Child Maltreatment

Patient or population: 55 physically maltreated children (13 girls, mean age of 8.6 years) and their parents or guardians. Child protection services caseworkers referred 87% of cases following incidents of physical abuse (n=20), physical maltreatment (n=15) or severe/frequent use of physical discipline or force having a high likelihood of physical injury (6).

Setting: Country: U.S. Intervention setting: Clinic, details not specified

Intervention: Family therapy

Comparison: Routine community services (families were referred to the individually prescribed community services recommend by their caseworkers; services included home visits to provide support and information, family skills specialists who taught homemaking and related skills, and parenting information and support groups. Some treatment plans in this group involved up to 20 hours of home-based service per week for up to 3 months, whereas others involved services delivered on a once or twice per week basis for an indefinite time)

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	No of participants (studies)	Quality of the evidence (GRADE)	Comments
	Risk with Routine community services	Risk with Family therapy				
Change in Internalizing symptoms assessed with: CBCL-INT follow up: mean 12 months	The mean change in Internalizing symptoms was -3.8	The mean change in Internalizing symptoms in the intervention group was 1.1 lower (8.69 lower to 6.49 higher)	-	27 (1 RCT) ^a	⊕○○○ VERY LOW b,c	Child Behavior Checklist (CBCL-Int), T scores (range 0-100) < 60 are considered normal range, 60-63 as borderline, and scores greater than 63 are in the clinical range. Lower values are better. Calculated important difference shows no effect (SMD = -0.11) (P=0.78)
Change in Externalizing symptoms assessed with: CBCL-EXT follow up: mean 12 months	The mean change in Externalizing symptoms was -0.5	The mean change in Externalizing symptoms in the intervention group was 6.2 lower (14.9 lower to 2.5 higher)	-	27 (1 RCT) ^a	⊕○○○ VERY LOW b,c	Child Behavior Checklist (CBCL-Ext), T scores (range 0-100) < 60 are considered normal range, 60-63 as borderline, and scores greater than 63 are in the clinical range. Lower values are better. Calculated important difference shows a medium effect (SMD = -0.58) (P=0.16)

Family therapy compared to Routine community services for Child Maltreatment

Patient or population: 55 physically maltreated children (13 girls, mean age of 8.6 years) and their parents or guardians. Child protection services caseworkers referred 87% of cases following incidents of physical abuse (n=20), physical maltreatment (n=15) or severe/frequent use of physical discipline or force having a high likelihood of physical injury (6).

Setting: Country: U.S. Intervention setting: Clinic, details not specified

Intervention: Family therapy

Comparison: Routine community services (families were referred to the individually prescribed community services recommend by their caseworkers; services included home visits to provide support and information, family skills specialists who taught homemaking and related skills, and parenting information and support groups. Some treatment plans in this group involved up to 20 hours of home-based service per week for up to 3 months, whereas others involved services delivered on a once or twice per week basis for an indefinite time)

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	No of participants (studies)	Quality of the evidence (GRADE)	Comments
	Risk with Routine community services	Risk with Family therapy				
Change in Depression assessed with: CDI follow up: mean 12 months	The mean change in Depression was -4.3	The mean change in Depression in the intervention group was 1 higher (2.79 lower to 4.79 higher)	-	27 (1 RCT) ^a	⊕○○○ VERY LOW b,c	Children's Depression Inventory (CDI), a 27 item scale (items scored on range 0-2). The total possible range for this scale is 0-54, where 19 or above indicates severe depression. Lower values are better. Calculated important difference shows a very small effect (SMD = 0.20) (P=0.60)
Recidivism assessed with: Abuse follow up: mean 12 months	250 per 1,000	112 per 1,000 (16 to 472)	OR 0.38 (0.05 to 2.68)	30 (1 RCT) ^a	⊕○○○ VERY LOW b,d	Based on number of events

*The risk in the intervention group (and its 95% confidence interval) is based on the assumed risk in the comparison group and the **relative effect** of the intervention (and its 95% CI).

CI: Confidence interval; **MD:** Mean difference; **OR:** Odds ratio

Family therapy compared to Routine community services for Child Maltreatment

Patient or population: 55 physically maltreated children (13 girls, mean age of 8.6 years) and their parents or guardians. Child protection services caseworkers referred 87% of cases following incidents of physical abuse (n=20), physical maltreatment (n=15) or severe/frequent use of physical discipline or force having a high likelihood of physical injury (6).

Setting: Country: U.S. Intervention setting: Clinic, details not specified

Intervention: Family therapy

Comparison: Routine community services (families were referred to the individually prescribed community services recommend by their caseworkers; services included home visits to provide support and information, family skills specialists who taught homemaking and related skills, and parenting information and support groups. Some treatment plans in this group involved up to 20 hours of home-based service per week for up to 3 months, whereas others involved services delivered on a once or twice per week basis for an indefinite time)

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	No of participants (studies)	Quality of the evidence (GRADE)	Comments
	Risk with Routine community services	Risk with Family therapy				

GRADE Working Group grades of evidence

High quality: We are very confident that the true effect lies close to that of the estimate of the effect

Moderate quality: We are moderately confident in the effect estimate: The true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different

Low quality: Our confidence in the effect estimate is limited: The true effect may be substantially different from the estimate of the effect

Very low quality: We have very little confidence in the effect estimate: The true effect is likely to be substantially different from the estimate of effect

a. Kolko,1996

b. Serious concerns regarding risk of bias.

c. The sample size is <300 and effect estimate is imprecise.

d. The sample size / number of events are <300 and effect estimate is imprecise.

Cognitive Behavioral training compared to Non-skilled/Active listening group for Child Maltreatment

Patient or population: 12 African American adolescent boys (ages 12-16) living in a group home under the protective services of local authority

Setting: Country: U.S. Intervention setting: Group home

Intervention: Cognitive Behavioral training

Comparison: Non-skilled/Active listening group (i.e., traditional indirect therapy model, which consisted of open-ended discussions and communications of the participants' daily activities)

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	No of participants (studies)	Quality of the evidence (GRADE)	Comments
	Risk with Non-skilled/Active listening group	Risk with Cognitive Behavioral training				
Change in Externalizing symptoms assessed with: Aggression Scale	The mean change in Externalizing symptoms was -0.3	The mean change in Externalizing symptoms in the intervention group was 0.67 lower (1.06 lower to 0.28 lower)	-	12 (1 RCT) ^a	⊕○○○ VERY LOW ^b	Aggression rating system developed by the study facility, range 1 – 5 (low to high), with observation of physical aggression/fighting, screaming/ yelling, physical & verbal threats. Lower values are better. Calculated important difference shows a large effect (SMD = -1.82) (P=0.0007)

*The risk in the intervention group (and its 95% confidence interval) is based on the assumed risk in the comparison group and the **relative effect** of the intervention (and its 95% CI).

CI: Confidence interval; MD: Mean difference

GRADE Working Group grades of evidence

High quality: We are very confident that the true effect lies close to that of the estimate of the effect

Moderate quality: We are moderately confident in the effect estimate: The true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different

Low quality: Our confidence in the effect estimate is limited: The true effect may be substantially different from the estimate of the effect

Very low quality: We have very little confidence in the effect estimate: The true effect is likely to be substantially different from the estimate of effect

a. LeSure-Lester, 2002

b. Serious concerns for risk of bias and sample size <300.

Neglect-specific

Dyadic music therapy compared to Treatment as usual for Child Maltreatment

Patient or population: 18 families (one child ages 5-12 & one parent) recruited from a residential family care centre – all described by the social services as exhibiting signs of severe emotional neglect

Setting: Country: Denmark. Intervention setting: Residential family care center

Intervention: Dyadic music therapy

Comparison: Treatment as usual (treatment as usual at the family care center, which mainly consisted of psychological and pedagogical support and guidance)

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	No of participants (studies)	Quality of the evidence (GRADE)	Comments
	Risk with Treatment as usual	Risk with Dyadic music therapy				
Change in Parent-Child Interaction assessed with: Positive parent behavior / response - APC	The mean change in Parent-Child Interaction was 2.11	The mean change in Parent-Child Interaction in the intervention group was 0.78 higher (1.44 lower to 3 higher)	-	18 (1 RCT) ^a	⊕○○○ VERY LOW b,c	Assessment of Parenting Competencies (APC), and subscores parent-child Mutual Attunement, parent-child Nonverbal Communication Skills), parent-child Emotional Parental Response. Higher scores are better. Calculated important difference shows a small effect (SMD = 0.31)
Change in Parent-Child Interaction assessed with: Negative parent behavior / response - APC	The mean change in Parent-Child Interaction was 1.33	The mean change in Parent-Child Interaction in the intervention group was 0.34 higher (1.15 lower to 1.83 higher)	-	18 (1 RCT) ^a	⊕○○○ VERY LOW b,c	Assessment of Parenting Competencies (APC), and subscores parent-child Mutual Attunement, parent-child Nonverbal Communication Skills), parent-child Emotional Parental Response. Lower scores are better. Calculated important difference shows a very small effect (SMD = 0.20)

*The risk in the intervention group (and its 95% confidence interval) is based on the assumed risk in the comparison group and the **relative effect** of the intervention (and its 95% CI).

CI: Confidence interval; MD: Mean difference

Dyadic music therapy compared to Treatment as usual for Child Maltreatment

Patient or population: 18 families (one child ages 5-12 & one parent) recruited from a residential family care centre – all described by the social services as exhibiting signs of severe emotional neglect

Setting: Country: Denmark. Intervention setting: Residential family care center

Intervention: Dyadic music therapy

Comparison: Treatment as usual (treatment as usual at the family care center, which mainly consisted of psychological and pedagogical support and guidance)

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	No of participants (studies)	Quality of the evidence (GRADE)	Comments
	Risk with Treatment as usual	Risk with Dyadic music therapy				

GRADE Working Group grades of evidence

High quality: We are very confident that the true effect lies close to that of the estimate of the effect

Moderate quality: We are moderately confident in the effect estimate: The true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different

Low quality: Our confidence in the effect estimate is limited: The true effect may be substantially different from the estimate of the effect

Very low quality: We have very little confidence in the effect estimate: The true effect is likely to be substantially different from the estimate of effect

a. Jacobsen, 2014 b. Serious concerns regarding risk of bias.

c. The sample size is <300 and effect estimate is imprecise.

Parenting interventions, clinic/community

Child maltreatment

Parent Child interaction therapy compared to Control for Child Maltreatment

Patient or population: Chaffin 2004: 110 physical abusive parents and their child (between 4 and 12 years of age) were referred as they entered the child welfare system for a new confirmed physical abuse report. Thomas 2011: 150 mothers (who had a history or were at high risk of maltreating their child) and their children (mean age of 5 years, 71% boys) were referred from child protection authorities or other professionals. Thomas 2012: 151 mothers and their children (mean age of 4.57 years, 70% boys) who were referred after having completed alternative parenting courses and assessed by referrers as requiring further intervention

Setting: Country: U.S. Intervention setting: Chaffin 2004: community-based nonprofit agency, clinic-based groups; Thomas 2011: research clinic; Thomas 2012: tertiary referral service

Intervention: Parent Child interaction therapy

Comparison: Control (Chaffin 2004: standard community based parenting group where parents receive skills about active listening, parenting practices, how their upbringing could influence their decisions, child development, communication strategies, stress management, etc.; Thomas 2011: waitlist; Thomas 2012: waitlist)

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	No of participants (studies)	Quality of the evidence (GRADE)	Comments
	Risk with Control	Risk with Parent Child interaction therapy				
Change in Internalizing symptoms assessed with: CBCL & BASC	-	The standardized mean change in Parent-Child Interaction in the intervention group was 0.32 SD lower (0.55 lower to 0.09 lower)	-	301 (3 RCTs) ^a	⊕⊕⊕○ MODERATE ^b	Child Behavior Checklist (CBCL-Int) in 2 studies & Behavior Assessment System for Children (BASC-Int) in one study. T scores (range 0-100); Clinical range scores > 63 on CBCL & >65 on BASC. Lower scores are better. Calculated important difference shows a small effect (SMD = -0.32) (Combined across CM & PA/N)

Parent Child interaction therapy compared to Control for Child Maltreatment

Patient or population: Chaffin 2004: 110 physical abusive parents and their child (between 4 and 12 years of age) were referred as they entered the child welfare system for a new confirmed physical abuse report. Thomas 2011: 150 mothers (who had a history or were at high risk of maltreating their child) and their children (mean age of 5 years, 71% boys) were referred from child protection authorities or other professionals. Thomas 2012: 151 mothers and their children (mean age of 4.57 years, 70% boys) who were referred after having completed alternative parenting courses and assessed by referrers as requiring further intervention

Setting: Country: U.S. Intervention setting: Chaffin 2004: community-based nonprofit agency, clinic-based groups; Thomas 2011: research clinic; Thomas 2012: tertiary referral service

Intervention: Parent Child interaction therapy

Comparison: Control (Chaffin 2004: standard community based parenting group where parents receive skills about active listening, parenting practices, how their upbringing could influence their decisions, child development, communication strategies, stress management, etc.; Thomas 2011: waitlist; Thomas 2012: waitlist)

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	N _e of participants (studies)	Quality of the evidence (GRADE)	Comments
	Risk with Control	Risk with Parent Child interaction therapy				
Change in Externalizing symptoms assessed with: CBCL & BASC	-	The standardized mean change in Parent-Child Interaction in the intervention group was 0.47 SD lower (0.70 lower to 0.24 lower)	-	301 (3 RCTs) ^a	⊕⊕⊕○ MODERATE ^b	Child Behavior Checklist (CBCL-Ext) in 2 studies & Behavior Assessment System for Children (BASC-Ext) in one study. T scores (range 0-100); Clinical range scores > 63 on CBCL & >65 on BASC. Lower scores are better. Calculated important difference shows a small effect (SMD = -0.47) (Combined across CM & PA/N)
Change in Parent-Child Interaction assessed with: Positive parent behavior - DPICS-R	The mean change in Parent-Child Interaction was -6.0	The mean change in Parent-Child Interaction in the intervention group was 18 higher (10.34 lower to 46.34 higher)	-	77 (1 RCT) ^c	⊕○○○ VERY LOW ^{b,d}	Dyadic Parent-Child Interaction Coding System Revised (DPICS-R), Observation coding is continuous & results in total frequency of overall positive behaviors (e.g. Praise) per 5-minute interval. Higher scores are better. Calculated important difference shows a small effect (P=0.21)

Parent Child interaction therapy compared to Control for Child Maltreatment

Patient or population: Chaffin 2004: 110 physical abusive parents and their child (between 4 and 12 years of age) were referred as they entered the child welfare system for a new confirmed physical abuse report. Thomas 2011: 150 mothers (who had a history or were at high risk of maltreating their child) and their children (mean age of 5 years, 71% boys) were referred from child protection authorities or other professionals. Thomas 2012: 151 mothers and their children (mean age of 4.57 years, 70% boys) who were referred after having completed alternative parenting courses and assessed by referrers as requiring further intervention

Setting: Country: U.S. Intervention setting: Chaffin 2004: community-based nonprofit agency, clinic-based groups; Thomas 2011: research clinic; Thomas 2012: tertiary referral service

Intervention: Parent Child interaction therapy

Comparison: Control (Chaffin 2004: standard community based parenting group where parents receive skills about active listening, parenting practices, how their upbringing could influence their decisions, child development, communication strategies, stress management, etc.; Thomas 2011: waitlist; Thomas 2012: waitlist)

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	Nº of participants (studies)	Quality of the evidence (GRADE)	Comments
	Risk with Control	Risk with Parent Child interaction therapy				
Change in Parent-Child Interaction assessed with: Negative parent behavior - DPICS-R	The mean change in Parent-Child Interaction was 7.0	The mean change in Parent-Child Interaction in the intervention group was 18 lower (25.47 lower to 10.53 lower)	-	77 (1 RCT) ^c	⊕○○○ VERY LOW ^e	Dyadic Parent-Child Interaction Coding System Revised (DPICS-R), Observation coding is continuous & results in total frequency of negative behaviors (e.g. criticism) per 5-minute interval. Lower scores are better. Calculated important difference shows a large effect (SMD = -1.10)
Change in Parent-Child Interaction assessed with: % Praise - DPICS III	The mean change in Parent-Child Interaction ranged from -0.2 to 0.6	The mean change in Parent-Child Interaction in the intervention group was 9.19 higher (7.05 higher to 11.34 higher)	-	216 (2 RCTs) ^f	⊕⊕○○ LOW ^e	Dyadic Parent-Child Interaction Coding System (DPICS-III), Observation coding is continuous for parent-child behaviors & results in total frequency of praise per 5-minute interval. Higher scores are better. Calculated important difference shows a large effect (SMD = 1.62)

Parent Child interaction therapy compared to Control for Child Maltreatment

Patient or population: Chaffin 2004: 110 physical abusive parents and their child (between 4 and 12 years of age) were referred as they entered the child welfare system for a new confirmed physical abuse report. Thomas 2011: 150 mothers (who had a history or were at high risk of maltreating their child) and their children (mean age of 5 years, 71% boys) were referred from child protection authorities or other professionals. Thomas 2012: 151 mothers and their children (mean age of 4.57 years, 70% boys) who were referred after having completed alternative parenting courses and assessed by referrers as requiring further intervention

Setting: Country: U.S. Intervention setting: Chaffin 2004: community-based nonprofit agency, clinic-based groups; Thomas 2011: research clinic; Thomas 2012: tertiary referral service

Intervention: Parent Child interaction therapy

Comparison: Control (Chaffin 2004: standard community based parenting group where parents receive skills about active listening, parenting practices, how their upbringing could influence their decisions, child development, communication strategies, stress management, etc.; Thomas 2011: waitlist; Thomas 2012: waitlist)

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	N _e of participants (studies)	Quality of the evidence (GRADE)	Comments
	Risk with Control	Risk with Parent Child interaction therapy				
Change in Parent-Child Interaction assessed with: % Reflections - DPICS III	The mean change in Parent-Child Interaction ranged from 1.7 to 2.6	The mean change in Parent-Child Interaction in the intervention group was 14.35 higher (10.75 higher to 17.96 higher)	-	216 (2 RCTs) ^f	⊕⊕○○ LOW ^e	Dyadic Parent-Child Interaction Coding System (DPICS-III), Observation coding is continuous for parent-child behaviors & results in total frequency of reflections per 5-minute interval. Higher scores are better. Calculated important difference shows a large effect (SMD = 1.65)
Change in Parent-Child Interaction assessed with: % Commands - DPICS III	The mean change in Parent-Child Interaction ranged from -2.0 to -1.4	The mean change in Parent-Child Interaction in the intervention group was 3.6 lower (5.38 lower to 1.83 lower)	-	216 (2 RCTs) ^f	⊕⊕○○ LOW ^e	Dyadic Parent-Child Interaction Coding System (DPICS-III), Observation coding is continuous for parent-child behaviors & results in total frequency of commands per 5-minute interval. Lower scores are better. Calculated important difference shows a medium effect (SMD = -0.54)

Parent Child interaction therapy compared to Control for Child Maltreatment

Patient or population: Chaffin 2004: 110 physical abusive parents and their child (between 4 and 12 years of age) were referred as they entered the child welfare system for a new confirmed physical abuse report. Thomas 2011: 150 mothers (who had a history or were at high risk of maltreating their child) and their children (mean age of 5 years, 71% boys) were referred from child protection authorities or other professionals. Thomas 2012: 151 mothers and their children (mean age of 4.57 years, 70% boys) who were referred after having completed alternative parenting courses and assessed by referrers as requiring further intervention

Setting: Country: U.S. Intervention setting: Chaffin 2004: community-based nonprofit agency, clinic-based groups; Thomas 2011: research clinic; Thomas 2012: tertiary referral service

Intervention: Parent Child interaction therapy

Comparison: Control (Chaffin 2004: standard community based parenting group where parents receive skills about active listening, parenting practices, how their upbringing could influence their decisions, child development, communication strategies, stress management, etc.; Thomas 2011: waitlist; Thomas 2012: waitlist)

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	N _e of participants (studies)	Quality of the evidence (GRADE)	Comments
	Risk with Control	Risk with Parent Child interaction therapy				
Change in Parent-Child Interaction assessed with: % Questions - DPICS III	The mean change in Parent-Child Interaction ranged from -2.5 to -1.2	The mean change in Parent-Child Interaction in the intervention group was 18.49 lower (20.94 lower to 16.04 lower)	-	216 (2 RCTs) ^f	⊕⊕○○ LOW ^e	Dyadic Parent-Child Interaction Coding System (DPICS-III), Observation coding is continuous for parent-child behaviors & results in total frequency of questions per 5-minute interval. Lower scores are better. Calculated important difference shows a large effect (SMD = -2.02)

*The risk in the intervention group (and its 95% confidence interval) is based on the assumed risk in the comparison group and the **relative effect** of the intervention (and its 95% CI).

CI: Confidence interval; SMD: Standardised mean difference; MD: Mean difference

GRADE Working Group grades of evidence

High quality: We are very confident that the true effect lies close to that of the estimate of the effect

Moderate quality: We are moderately confident in the effect estimate: The true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different

Low quality: Our confidence in the effect estimate is limited: The true effect may be substantially different from the estimate of the effect

Very low quality: We have very little confidence in the effect estimate: The true effect is likely to be substantially different from the estimate of effect

a. Chaffin, 2004; Thomas, 2011; Thomas, 2012

- b. Serious concerns regarding risk of bias.
- c. Chaffin, 2004
- d. The sample size is <300 and effect estimate is imprecise.
- e. Serious concerns for risk of bias and sample size <300.
- f. Thomas, 2011; Thomas, 2012

Enhanced Parent Child interaction therapy compared to Control for Child Maltreatment

Patient or population: 110 physical abusive parents and their child (between 4 and 12 years of age) were referred as they entered the child welfare system for a new confirmed physical abuse report.

Setting: Country: U.S. Intervention setting: Chaffin 2004: community-based nonprofit agency, clinic-based groups

Intervention: Enhanced Parent Child interaction therapy

Comparison: Standard community based parenting group where parents receive skills about active listening, parenting practices, how their upbringing could influence their decisions, child development, communication strategies, stress management, etc.

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	N of participants (studies)	Quality of the evidence (GRADE)	Comments
	Risk with Control	Risk with Enhanced Parent Child interaction therapy				
Change in Internalizing symptoms assessed with: BASC-INT	The mean change in Internalizing symptoms was -3.3	The mean change in Internalizing symptoms in the intervention group was 6.6 lower (13.09 lower to 0.11 lower)	-	68 (1 RCT) ^a	⊕○○○ VERY LOW ^b	Behavior Assessment System for Children (BASC-Int), 130 total items; T scores (range 0-100); Clinical range scores >65. Lower scores are better. Calculated important difference shows a small effect (SMD = -0.47)
Change in Externalizing symptoms assessed with: BASC-EXT	The mean change in Externalizing symptoms was -2.5	The mean change in Externalizing symptoms in the intervention group was 0.8 lower (4.74 lower to 3.14 higher)	-	68 (1 RCT) ^a	⊕○○○ VERY LOW ^{c,d}	Behavior Assessment System for Children (BASC-Ext), 130 total items; T scores (range 0-100); Clinical range scores >65. Lower scores are better. Calculated important difference shows no effect (SMD = -0.09)

Enhanced Parent Child interaction therapy compared to Control for Child Maltreatment

Patient or population: 110 physical abusive parents and their child (between 4 and 12 years of age) were referred as they entered the child welfare system for a new confirmed physical abuse report.

Setting: Country: U.S. Intervention setting: Chaffin 2004: community-based nonprofit agency, clinic-based groups

Intervention: Enhanced Parent Child interaction therapy

Comparison: Standard community based parenting group where parents receive skills about active listening, parenting practices, how their upbringing could influence their decisions, child development, communication strategies, stress management, etc.

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	No of participants (studies)	Quality of the evidence (GRADE)	Comments
	Risk with Control	Risk with Enhanced Parent Child interaction therapy				
Change in Parent-Child Interaction assessed with: Positive parent behavior - DPICS-R	The mean change in Parent-Child Interaction was -6.0	The mean change in Parent-Child Interaction in the intervention group was 25 higher (9.15 lower to 59.15 higher)	-	68 (1 RCT) ^a	⊕○○○ VERY LOW c,d	Dyadic Parent-Child Interaction Coding System Revised (DPICS-R), Observation coding is continuous & results in total frequency of overall positive behaviors (e.g. Praise) per 5-minute interval. Higher scores are better. Calculated important difference shows a small effect (SMD = 0.34)
Change in Parent-Child Interaction assessed with: Negative parent behavior - DPICS-R	The mean change in Parent-Child Interaction was 7.0	The mean change in Parent-Child Interaction in the intervention group was 16 lower (23.7 lower to 8.3 lower)	-	68 (1 RCT) ^a	⊕○○○ VERY LOW ^b	Dyadic Parent-Child Interaction Coding System Revised (DPICS-R), Observation coding is continuous & results in total frequency of negative behaviors (e.g. criticism) per 5-minute interval. Lower scores are better. Calculated important difference shows a large effect (SMD = -0.97)

Physical abuse re-report - PCIT vs community group follow up: mean 850 days	486 per 1,000	191 per 1,000 (78 to 395)	OR 0.25 (0.09 to 0.69)	77 (1 RCT) ¹	⊕⊕○○ LOW _{a,b}
Physical abuse re-report - EPCIT vs community group follow up: mean 850 days	486 per 1,000	366 per 1,000 (178 to 602)	OR 0.61 (0.23 to 1.60)	68 (1 RCT) ¹	⊕⊕○○ LOW _{a,b}

***The risk in the intervention group** (and its 95% confidence interval) is based on the assumed risk in the comparison group and the **relative effect** of the intervention (and its 95% CI).

CI: Confidence interval; **MD:** Mean difference

GRADE Working Group grades of evidence

High quality: We are very confident that the true effect lies close to that of the estimate of the effect

Moderate quality: We are moderately confident in the effect estimate: The true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different

Low quality: Our confidence in the effect estimate is limited: The true effect may be substantially different from the estimate of the effect

Very low quality: We have very little confidence in the effect estimate: The true effect is likely to be substantially different from the estimate of effect

a. Chaffin, 2004

b. Serious concerns for risk of bias and sample size <300.

c. Serious concerns regarding risk of bias.

d. The sample size is <300 and effect estimate is imprecise.

Neglect-specific

Families actively improving relationships program compared to Treatment as usual for Child Maltreatment

Patient or population: 31 mothers involved with child welfare services for child neglect and severe substance use

Setting: Country: U.S. Intervention setting: Community based, details not specified

Intervention: Families actively improving relationships program

Comparison: Treatment as usual (traditional substance use treatment and 12-step programs, group (non-evidence-based) parenting classes and individual and/or family mental health counseling from an array of mental health providers)

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	No of participants (studies)	Quality of the evidence (GRADE)	Comments
	Risk with Treatment as usual	Risk with Families actively improving relationships program				
Change in Externalizing symptoms assessed with: PDR	The mean change in Externalizing symptoms was 1.0	The mean change in Externalizing symptoms in the intervention group was 12.49 lower (18.35 lower to 6.63 lower)	-	29 (1 RCT) ^a	⊕○○○ VERY LOW ^b	Parent Daily Report (PDR), a 31-item, ordinal (occurrence/non-occurrence) parent report of child behaviours (e.g., aggressiveness, arguing, bedwetting). Lower scores are better. Calculated important difference shows a large effect (SMD = -1.52) (p<0.0001)
Change in Externalizing symptoms assessed with: PDR follow up: mean 6 months	The mean change in Externalizing symptoms was -8.0	The mean change in Externalizing symptoms in the intervention group was 8.56 lower (15.81 lower to 1.31 lower)	-	22 (1 RCT) ^a	⊕○○○ VERY LOW ^b	Parent Daily Report (PDR), a 31-item, ordinal (occurrence/non-occurrence) parent report of child behaviours (e.g., aggressiveness, arguing, bedwetting). Lower scores are better. Calculated important difference shows a large effect (SMD = -1.00) (p=0.02)

*The risk in the intervention group (and its 95% confidence interval) is based on the assumed risk in the comparison group and the **relative effect** of the intervention (and its 95% CI).

CI: Confidence interval; MD: Mean difference

Families actively improving relationships program compared to Treatment as usual for Child Maltreatment

Patient or population: 31 mothers involved with child welfare services for child neglect and severe substance use

Setting: Country: U.S. Intervention setting: Community based, details not specified

Intervention: Families actively improving relationships program

Comparison: Treatment as usual (traditional substance use treatment and 12-step programs, group (non-evidence-based) parenting classes and individual and/or family mental health counseling from an array of mental health providers)

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	No of participants (studies)	Quality of the evidence (GRADE)	Comments
	Risk with Treatment as usual	Risk with Families actively improving relationships program				

GRADE Working Group grades of evidence

High quality: We are very confident that the true effect lies close to that of the estimate of the effect

Moderate quality: We are moderately confident in the effect estimate: The true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different

Low quality: Our confidence in the effect estimate is limited: The true effect may be substantially different from the estimate of the effect

Very low quality: We have very little confidence in the effect estimate: The true effect is likely to be substantially different from the estimate of effect

a. Saldana, 2015

b. Serious concerns for risk of bias and sample size <300.

Parenting interventions, home-based

Child maltreatment

SafeCare compared to Usual care for Child Maltreatment

Patient or population: Maltreating parents or caregivers in child protection services

Setting: Outpatient, home based

Intervention: SafeCare (a home-based treatment of parents in CPS for child neglect including structured behavioural skills training programme focusing on concrete caregiving, household management and parenting skills). Implementation may include coaches to improve fidelity to the programme.

Comparison: Usual care

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	No of participants (studies)	Quality of the evidence (GRADE)	Comments
	Risk with Usual care	Risk with SafeCare				
Recidivism at 1 year assessed with: Abuse follow up: mean 6 years	450 per 1000	391 per 1000 (342 to 443)	HR 0.83 (0.70 to 0.98) ^a	2035 (1 RCT) ^b	⊕⊕⊕○ MODERATE ^c	Effects were similar depending on analysis used. However different analyses did not show that adding coaching to SC when implemented resulted in greater reductions in recidivism. In a subpopulation of parents and caregivers of preschool aged children with no untreated substance abuse disorder, showed greater reduction in recidivism (HR 0.74, CI 0.58 to 0.95)

Explanations

a. Effect estimate from study; no raw events data provided.

b. Chaffin, 2012

c. Serious concerns regarding risk of bias.

Promoting first relationships intervention compared to Early education support for Child Maltreatment

Patient or population: 210 toddlers (10-24 months, 118 boys) and their caregivers who were identified by an authorized working in the Department of Social and Health Services (DSHS) to access DSHS records and identify infants who had experienced a court-ordered placement that resulted in a change in primary caregiver within the prior 7 weeks

Setting: Country: U.S. Intervention setting: Home-based

Intervention: Promoting first relationships intervention

Comparison: Early education support (three monthly 90-min visits where the provider helped connect the family to resources such as Early Head Start, early intervention, housing, mental health services, and child care; the provider also suggested activities to promote growth and development)

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	No of participants (studies)	Quality of the evidence (GRADE)	Comments
	Risk with Early education support	Risk with Promoting first relationships intervention				
Change in Parent-Child Interaction assessed with: NCATS - Sensitivity	The mean change in Parent-Child Interaction was -0.43	The mean change in Parent-Child Interaction in the intervention group was 1.49 higher (0.67 higher to 2.31 higher)	-	175 (1 RCT) ^a	⊕○○○ VERY LOW b,c	Nursing Child Assessment Teaching Scale (NCATS); 21 item (scored yes or no and summed). Higher scores indicate more responsive interaction to distress, socio-emotional and cognitive grown fostering. Calculated important difference shows a medium effect (SMD = 0.53)
Change in Parent-Child Interaction assessed with: IPIC - Support	The mean change in Parent-Child Interaction was 0.12	The mean change in Parent-Child Interaction in the intervention group was 0.06 lower (0.15 lower to 0.03 higher)	-	175 (1 RCT) ^a	⊕○○○ VERY LOW b,c	Assessed using Indicator of Parent-Child Interaction (IPCI) where 5 "positive" parenting behaviours rated by 2 coders across 3 activities (15 items), scored on a scale of 0-3. Higher score are better. Calculated important difference shows no effect (SMD = -0.19)
Internalizing symptoms assessed with: CBCL-INT follow up: mean 6 months	The mean internalizing symptoms was 7.55 ^d	The mean internalizing symptoms in the intervention group was 0.16 lower (2.04 lower to 1.72 higher)	-	129 (1 RCT) ^a	⊕○○○ VERY LOW b,c	Child Behavior Checklist (CBCL-Int), T scores (range 0-100) < 60 are considered normal range, 60-63 as borderline, and scores greater than 63 are in the clinical range. Lower scores are better. Calculated important difference shows no effect (SMD = -0.03)

Promoting first relationships intervention compared to Early education support for Child Maltreatment

Patient or population: 210 toddlers (10-24 months, 118 boys) and their caregivers who were identified by an authorized working in the Department of Social and Health Services (DSHS) to access DSHS records and identify infants who had experienced a court-ordered placement that resulted in a change in primary caregiver within the prior 7 weeks

Setting: Country: U.S. Intervention setting: Home-based

Intervention: Promoting first relationships intervention

Comparison: Early education support (three monthly 90-min visits where the provider helped connect the family to resources such as Early Head Start, early intervention, housing, mental health services, and child care; the provider also suggested activities to promote growth and development)

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	No of participants (studies)	Quality of the evidence (GRADE)	Comments
	Risk with Early education support	Risk with Promoting first relationships intervention				
Externalizing symptoms assessed with: CBCL-EXT follow up: mean 6 months	The mean externalizing symptoms was 13.94	The mean externalizing symptoms in the intervention group was 1.07 lower (4 lower to 1.86 higher)	-	129 (1 RCT) ^a	⊕○○○ VERY LOW b,c	Child Behavior Checklist (CBCL-Ext), T scores (range 0-100) < 60 are considered normal range, 60-63 as borderline, and scores greater than 63 are in the clinical range. Lower scores are better. Calculated important difference shows no effect (SMD = -0.13)
Change in Parent-Child Interaction assessed with: NCATS - Sensitivity follow up: mean 6 months	The mean change in Parent-Child Interaction was 1.45	The mean change in Parent-Child Interaction in the intervention group was 0.87 higher (0.03 lower to 1.77 higher)	-	129 (1 RCT) ^a	⊕○○○ VERY LOW b,c	Nursing Child Assessment Teaching Scale (NCATS); 21 item (scored yes or no and summed). Higher scores indicate more responsive interaction to distress, socio-emotional and cognitive growth fostering. Calculated important difference shows a small effect (SMD = 0.33)

Promoting first relationships intervention compared to Early education support for Child Maltreatment

Patient or population: 210 toddlers (10-24 months, 118 boys) and their caregivers who were identified by an authorized working in the Department of Social and Health Services (DSHS) to access DSHS records and identify infants who had experienced a court-ordered placement that resulted in a change in primary caregiver within the prior 7 weeks

Setting: Country: U.S. Intervention setting: Home-based

Intervention: Promoting first relationships intervention

Comparison: Early education support (three monthly 90-min visits where the provider helped connect the family to resources such as Early Head Start, early intervention, housing, mental health services, and child care; the provider also suggested activities to promote growth and development)

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	No of participants (studies)	Quality of the evidence (GRADE)	Comments
	Risk with Early education support	Risk with Promoting first relationships intervention				
Change in Parent-Child Interaction assessed with: IPIC - Support follow up: mean 6 months	The mean change in Parent-Child Interaction was 0.22	The mean change in Parent-Child Interaction in the intervention group was 0.03 lower (0.14 lower to 0.08 higher)	-	129 (1 RCT) ^a	⊕○○○ VERY LOW b,c	Assessed using Indicator of Parent-Child Interaction (IPCI) where 5 “positive” parenting behaviours rated by 2 coders across 3 activities (15 items), scored on a scale of 0-3. Higher score are better. Calculated important difference shows no effect (SMD = -0.09)

*The risk in the intervention group (and its 95% confidence interval) is based on the assumed risk in the comparison group and the **relative effect** of the intervention (and its 95% CI).

CI: Confidence interval; MD: Mean difference

GRADE Working Group grades of evidence

High quality: We are very confident that the true effect lies close to that of the estimate of the effect

Moderate quality: We are moderately confident in the effect estimate: The true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different

Low quality: Our confidence in the effect estimate is limited: The true effect may be substantially different from the estimate of the effect

Very low quality: We have very little confidence in the effect estimate: The true effect is likely to be substantially different from the estimate of effect

a. Spieker, 2012

b. Serious concerns for risk of bias.

c. The sample size is <300 and effect estimate is imprecise.

d. Data at post-treatment / follow-up only. No baseline data provided.

Attachment oriented home visits compared to Standard care for Child Maltreatment

Patient or population: 67 primary caregivers reported for maltreatment and their children (1-5 years). Seventy-two percent of sample children had experienced neglect before starting the program, 7% physical abuse, and 3% sexual abuse. In addition, 16% had been both neglected and physically abused, and 2% were both neglected and sexually abused.

Setting: Country: Quebec, Canada. Setting: Home-based

Intervention: Attachment oriented home visits

Comparison: Standard care (a monthly visit by a child welfare caseworker)

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	N _e of participants (studies)	Quality of the evidence (GRADE)	Comments
	Risk with Standard care	Risk with Attachment oriented home visits				
Change in internalizing symptoms assessed with: CBCL-INT	The mean change in internalizing symptoms was 0.76	The mean change in internalizing symptoms in the intervention group was 3.06 lower (6.46 lower to 0.34 higher)	-	67 (1 RCT) ^a	⊕○○○ VERY LOW b,c	Child Behavior Checklist (CBCL-Int), T scores (range 0-100) < 60 are considered normal range, 60-63 as borderline, and scores greater than 63 are in the clinical range. Lower values are better. Calculated important difference shows a small effect (SMD = - 0.43)
Change in Externalizing symptoms assessed with: CBCL-EXT	The mean change in Externalizing symptoms was -3.19	The mean change in Externalizing symptoms in the intervention group was 1.57 higher (2.2 lower to 5.34 higher)	-	67 (1 RCT) ^a	⊕○○○ VERY LOW b,c	Child Behavior Checklist (CBCL-Ext), T scores (range 0-100) < 60 are considered normal range, 60-63 as borderline, and scores greater than 63 are in the clinical range. Lower values are better. Calculated important difference shows a very small effect (SMD = 0.20)

Attachment oriented home visits compared to Standard care for Child Maltreatment

Patient or population: 67 primary caregivers reported for maltreatment and their children (1-5 years). Seventy-two percent of sample children had experienced neglect before starting the program, 7% physical abuse, and 3% sexual abuse. In addition, 16% had been both neglected and physically abused, and 2% were both neglected and sexually abused.

Setting: Country: Quebec, Canada. Setting: Home-based

Intervention: Attachment oriented home visits

Comparison: Standard care (a monthly visit by a child welfare caseworker)

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	No of participants (studies)	Quality of the evidence (GRADE)	Comments
	Risk with Standard care	Risk with Attachment oriented home visits				
Change in Parent-Child Interaction assessed with: MBQS - Sensitivity	The mean change in Parent-Child Interaction was 0.03	The mean change in Parent-Child Interaction in the intervention group was 0.19 higher (0.04 higher to 0.34 higher)	-	67 (1 RCT) ^a	⊕○○○ VERY LOW d	Maternal Behavior Q-Sort (90-items) for child-mother observation, range 1.0 (least sensitive/responsive) to 1.0 (prototypically sensitive/responsive). Higher score represent better outcome. Calculated important difference shows a medium effect (SMD = 0.61)

*The risk in the intervention group (and its 95% confidence interval) is based on the assumed risk in the comparison group and the **relative effect** of the intervention (and its 95% CI).

CI: Confidence interval; MD: Mean difference

GRADE Working Group grades of evidence

High quality: We are very confident that the true effect lies close to that of the estimate of the effect

Moderate quality: We are moderately confident in the effect estimate: The true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different

Low quality: Our confidence in the effect estimate is limited: The true effect may be substantially different from the estimate of the effect

Very low quality: We have very little confidence in the effect estimate: The true effect is likely to be substantially different from the estimate of effect

a. Moss, 2011

b. Serious concerns regarding risk of bias.

c. The sample size is <300 and effect estimate is imprecise.

d. Serious concerns for risk of bias and sample size <300.

Psychoeducational home visitation intervention compared to Community Control for Child Maltreatment

Patient or population: Toth 2002: Mothers (n=122) and preschoolers (n=68 boys and n=55 girls). 87 of the families (71%) had documents history of maltreatment and 35 of the families lacked such history. Cicchetti 2006: Infants (n=137 infants; ~60 boys, 77 girls) and their mothers who were from maltreating families (families identified by child protection services).

Setting: Country: U.S. Setting of intervention: Mt. Hope Family Center (community-based research center affiliated with the University of Rochester)

Intervention: Psychoeducational home visitation intervention

Comparison: Community standard comparison (standard services and resources comparison). "Consistent with other treatment studies, a community standard (CS) comparison group was used to determine the effects of standard services and resources available through the Department of Social Services on child and family functioning." Toth 2002: 60% of the children in the CS condition were in full- or part-time daycare and 50% were enrolled in a pre-school program. In addition, 13% of the CS children participants in individual psychotherapy over the treatment period." Cicchetti 2006: "Families may have continued to be monitored by CPS and may have participated in other preventive services programs"

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	Nº of participants (studies)	Quality of the evidence (GRADE)	Comments
	Risk with Community Control	Risk with Psychoeducational home visitation intervention				
Change in Parent-Child Interaction assessed with: MCRS	The mean change in Parent-Child Interaction was 0.9	The mean change in Parent-Child Interaction in the intervention group was 0.25 lower (0.67 lower to 0.17 higher)	-	64 (1 RCT) ^a	⊕○○○ VERY LOW b,c	Modified Bickham and Fiese's global relationship expectation scale, rated as very low(1), relationship dissatisfying, unpredictable, dangerous to very high(5), relationship as fulfilling & rewarding. Higher scores are better. Calculated important difference shows a small effect (SMD = -0.29)

Psychoeducational home visitation intervention compared to Community Control for Child Maltreatment

Patient or population: Toth 2002: Mothers (n=122) and preschoolers (n=68 boys and n=55 girls). 87 of the families (71%) had documents history of maltreatment and 35 of the families lacked such history. Cicchetti 2006: Infants (n=137 infants; ~60 boys, 77 girls) and their mothers who were from maltreating families (families identified by child protection services).

Setting: Country: U.S. Setting of intervention: Mt. Hope Family Center (community-based research center affiliated with the University of Rochester)

Intervention: Psychoeducational home visitation intervention

Comparison: Community standard comparison (standard services and resources comparison). "Consistent with other treatment studies, a community standard (CS) comparison group was used to determine the effects of standard services and resources available through the Department of Social Services on child and family functioning." Toth 2002: 60% of the children in the CS condition were in full- or part-time daycare and 50% were enrolled in a pre-school program. In addition, 13% of the CS children participants in individual psychotherapy over the treatment period." Cicchetti 2006: "Families may have continued to be monitored by CPS and may have participated in other preventive services programs"

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	№ of participants (studies)	Quality of the evidence (GRADE)	Comments
	Risk with Community Control	Risk with Psychoeducational home visitation intervention				

*The risk in the intervention group (and its 95% confidence interval) is based on the assumed risk in the comparison group and the **relative effect** of the intervention (and its 95% CI).

CI: Confidence interval; MD: Mean difference

GRADE Working Group grades of evidence

High quality: We are very confident that the true effect lies close to that of the estimate of the effect

Moderate quality: We are moderately confident in the effect estimate: The true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different

Low quality: Our confidence in the effect estimate is limited: The true effect may be substantially different from the estimate of the effect

Very low quality: We have very little confidence in the effect estimate: The true effect is likely to be substantially different from the estimate of effect

a. Toth, 2002

b. Serious concerns regarding risk of bias.

c. The sample size is <300 and effect estimate is imprecise.

Psychoeducation parenting intervention compared to Community Control for Child Maltreatment

Patient or population: Infants (n=137 infants; ~60 boys, 77 girls) and their mothers who were from maltreating families (families identified by child protection services).

Setting: Country: U.S. Setting of intervention: Mt. Hope Family Center (community-based research center affiliated with the University of Rochester)

Intervention: Psychoeducation parenting intervention

Comparison: Community standard comparison (standard services and resources comparison). (families may have continued to be monitored by CPS and may have participated in other preventive services programs)

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	No of participants (studies)	Quality of the evidence (GRADE)	Comments
	Risk with Community Control	Risk with Psychoeducation parenting intervention				
Internalizing symptoms assessed with: CBCL-INT follow up: mean 12 months	The mean internalizing symptoms was 53.1 ^a	The mean internalizing symptoms in the intervention group was 0.65 lower (6.66 lower to 5.36 higher)	-	71 (1 RCT) ^b	⊕○○○ VERY LOW c,d	Assessed using the Child Behavior Checklist (CBCL-Int). T scores (range 0-100) < 60 are considered normal range, 60-63 as borderline, and scores greater than 63 are in the clinical range. Lower scores are better. Calculated important difference shows no effect (SMD = -0.05)
Externalizing symptoms assessed with: CBCL-EXT follow up: mean 12 months	The mean externalizing symptoms was 53.47 ^a	The mean externalizing symptoms in the intervention group was 0.52 lower (5.4 lower to 4.36 higher)	-	71 (1 RCT) ^b	⊕○○○ VERY LOW c,d	Assessed using the Child Behavior Checklist (CBCL-Ext). T scores less than 60 are considered in the normal range, 60-63 represent borderline, and scores greater than 63 are in the clinical range. Lower scores are better. Calculated important difference shows no effect (SMD = -0.05)

*The risk in the intervention group (and its 95% confidence interval) is based on the assumed risk in the comparison group and the **relative effect** of the intervention (and its 95% CI).

CI: Confidence interval; MD: Mean difference

Psychoeducation parenting intervention compared to Community Control for Child Maltreatment

Patient or population: Infants (n=137 infants; ~60 boys, 77 girls) and their mothers who were from maltreating families (families identified by child protection services).

Setting: Country: U.S. Setting of intervention: Mt. Hope Family Center (community-based research center affiliated with the University of Rochester)

Intervention: Psychoeducation parenting intervention

Comparison: Community standard comparison (standard services and resources comparison). (families may have continued to be monitored by CPS and may have participated in other preventive services programs)

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	No of participants (studies)	Quality of the evidence (GRADE)	Comments
	Risk with Community Control	Risk with Psychoeducation parenting intervention				

GRADE Working Group grades of evidence

High quality: We are very confident that the true effect lies close to that of the estimate of the effect

Moderate quality: We are moderately confident in the effect estimate: The true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different

Low quality: Our confidence in the effect estimate is limited: The true effect may be substantially different from the estimate of the effect

Very low quality: We have very little confidence in the effect estimate: The true effect is likely to be substantially different from the estimate of effect

a. Data at Post-treatment / Follow-up only. No baseline data provided.

b. Cicchetti, 2006

c. Serious concerns regarding risk of bias.

d. The sample size is <300 and effect estimate is imprecise.

Physical abuse & neglect

Home visiting by public health nurse compared to Standard care for Child Maltreatment

Patient or population: 163 families with a history of one index child (younger than 13 years, 50% boys) being exposed to physical abuse or neglect who were referred by one of two local child protection agencies

Setting: Country: Canada. Intervention setting: Home-based

Intervention: Home visiting by public health nurse

Comparison: Standard care (standard services arranged CPS agency, such as routine follow-up by CPS caseworkers whose focus was on assessment of risk of recidivism, provision of education about parenting, and arrangement of referrals to community-based parent education programs)

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	No of participants (studies)	Quality of the evidence (GRADE)	Comments
	Risk with Standard care	Risk with Home visiting by public health nurse				
Change in Parent-Child Interaction assessed with: HOME	The mean change in Parent-Child Interaction was -1.3	The mean change in Parent-Child Interaction in the intervention group was 4.2 higher (1.05 higher to 7.35 higher)	-	147 (1 RCT) ^a	⊕⊕○○ LOW ^c	Home Observation for Measurement of the Environment (HOME), 55-items (yes/no) on parent/child interaction & discussions with the parent about objects, events, & transactions. Higher scores are better. Calculated important difference shows a small effect (SMD = 0.42)
Change in Externalizing symptoms (Males only) assessed with: RBPC	The mean change in Externalizing symptoms was -4.4	The mean change in Externalizing symptoms in the intervention group was 1.5 lower (5.57 lower to 2.57 higher)	-	55 (1 RCT) ^a	⊕⊕○○ LOW ^c	Revised Behaviour Problem Checklist with subscale for child behavior and conduct disorders (range: 0-44). Lower scores represent a better outcome. Calculated important difference shows no effect (SMD = -0.19)

Home visiting by public health nurse compared to Standard care for Child Maltreatment

Patient or population: 163 families with a history of one index child (younger than 13 years, 50% boys) being exposed to physical abuse or neglect who were referred by one of two local child protection agencies

Setting: Country: Canada. Intervention setting: Home-based

Intervention: Home visiting by public health nurse

Comparison: Standard care (standard services arranged CPS agency, such as routine follow-up by CPS caseworkers whose focus was on assessment of risk of recidivism, provision of education about parenting, and arrangement of referrals to community-based parent education programs)

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	No of participants (studies)	Quality of the evidence (GRADE)	Comments
	Risk with Standard care	Risk with Home visiting by public health nurse				
Change in Externalizing symptoms (Females only) assessed with: RBPC	The mean change in Externalizing symptoms was -5.7	The mean change in Externalizing symptoms in the intervention group was 4.8 higher (0.92 higher to 8.68 higher)	-	55 (1 RCT) ^a	⊕⊕○○ LOW ^c	Revised Behaviour Problem Checklist with subscale for child behavior and conduct disorders (range: 0-44). Lower scores represent a better outcome. Calculated important difference shows a medium effect (SMD = 0.63)
Change in Anxiety symptoms (Males only) assessed with: RBPC	The mean change in Anxiety symptoms was -2.2	The mean change in Anxiety symptoms in the intervention group was 1 higher (0.76 lower to 2.76 higher)	-	55 (1 RCT) ^a	⊕⊕○○ LOW ^c	Revised Behaviour Problem Checklist with subscale for anxiety / withdrawal symptoms (range: 0-22). Lower scores represent a better outcome. Calculated important difference shows a small effect (SMD = 0.30)
Change in Anxiety symptoms (Females only) assessed with: RBPC	The mean change in Anxiety symptoms was -2.1	The mean change in Anxiety symptoms in the intervention group was 1.9 higher (0.29 higher to 3.51 higher)	-	55 (1 RCT) ^a	⊕⊕○○ LOW ^c	Revised Behaviour Problem Checklist with subscale for anxiety / withdrawal symptoms (range: 0-22). Lower scores represent a better outcome. Calculated important difference shows a medium effect (SMD = 0.64)

Home visiting by public health nurse compared to Standard care for Child Maltreatment

Patient or population: 163 families with a history of one index child (younger than 13 years, 50% boys) being exposed to physical abuse or neglect who were referred by one of two local child protection agencies

Setting: Country: Canada. Intervention setting: Home-based

Intervention: Home visiting by public health nurse

Comparison: Standard care (standard services arranged CPS agency, such as routine follow-up by CPS caseworkers whose focus was on assessment of risk of recidivism, provision of education about parenting, and arrangement of referrals to community-based parent education programs)

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	No of participants (studies)	Quality of the evidence (GRADE)	Comments
	Risk with Standard care	Risk with Home visiting by public health nurse				
Change in Parent-Child Interaction assessed with: HOME follow up: mean 12 months	The mean change in Parent-Child Interaction was 2.1	The mean change in Parent-Child Interaction in the intervention group was 5.2 higher (1.74 higher to 8.66 higher)	-	139 (1 RCT) ^a	⊕⊕○○ LOW ^c	Home Observation for Measurement of the Environment (HOME), 55-items (yes/no) on parent/child interaction & discussions with the parent about objects, events, & transactions. Higher scores are better. Calculated important difference shows a medium effect (SMD = 0.50)
Recidivism (Physical Abuse) follow up: mean 12 months	431 per 1,000	330 per 1,000 (205 to 484)	OR 0.65 (0.34 to 1.24)	160 (1 RCT) ^a	⊕⊕○○ LOW ^c	Based on number of events.
Recidivism (Neglect) follow up: mean 12 months	514 per 1,000	467 per 1,000 (317 to 619)	OR 0.83 (0.44 to 1.54)	160 (1 RCT) ^a	⊕⊕○○ LOW ^c	Based on number of events.

Home visiting by public health nurse compared to Standard care for Child Maltreatment

Patient or population: 163 families with a history of one index child (younger than 13 years, 50% boys) being exposed to physical abuse or neglect who were referred by one of two local child protection agencies

Setting: Country: Canada. Intervention setting: Home-based

Intervention: Home visiting by public health nurse

Comparison: Standard care (standard services arranged CPS agency, such as routine follow-up by CPS caseworkers whose focus was on assessment of risk of recidivism, provision of education about parenting, and arrangement of referrals to community-based parent education programs)

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	No of participants (studies)	Quality of the evidence (GRADE)	Comments
	Risk with Standard care	Risk with Home visiting by public health nurse				
Change in Externalizing symptoms (Males only) assessed with: RBPC follow up: mean 12 months	The mean change in Externalizing symptoms was -6.7	The mean change in Externalizing symptoms in the intervention group was 4.4 lower (8.42 lower to 0.38 lower)	-	56 (1 RCT)	⊕⊕○○ LOW ^c	Revised Behaviour Problem Checklist with subscale for child behavior and conduct disorders (range: 0-44). Lower scores represent a better outcome. Calculated important difference shows a medium effect (SMD = -0.56)
Change in Externalizing symptoms (Females only) assessed with: RBPC follow up: mean 12 months	The mean change in Externalizing symptoms was -7.5	The mean change in Externalizing symptoms in the intervention group was 2.9 higher (0.84 lower to 6.64 higher)	-	50 (1 RCT) ^a	⊕⊕○○ LOW ^c	Revised Behaviour Problem Checklist with subscale for child behavior and conduct disorders (range: 0-44). Lower scores represent a better outcome. Calculated important difference shows a medium effect (SMD = 0.41)
Change in Anxiety symptoms (Males only) assessed with: RBPC follow up: mean 12 months	The mean change in Anxiety symptoms was -2.3	The mean change in Anxiety symptoms in the intervention group was 0.2 lower (1.97 lower to 1.57 higher)	-	56 (1 RCT) ^a	⊕⊕○○ LOW ^c	Revised Behaviour Problem Checklist with subscale for anxiety / withdrawal symptoms (range: 0-22). Lower scores represent a better outcome. Calculated important difference shows no effect (SMD = -0.06)

Home visiting by public health nurse compared to Standard care for Child Maltreatment

Patient or population: 163 families with a history of one index child (younger than 13 years, 50% boys) being exposed to physical abuse or neglect who were referred by one of two local child protection agencies

Setting: Country: Canada. Intervention setting: Home-based

Intervention: Home visiting by public health nurse

Comparison: Standard care (standard services arranged CPS agency, such as routine follow-up by CPS caseworkers whose focus was on assessment of risk of recidivism, provision of education about parenting, and arrangement of referrals to community-based parent education programs)

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	No of participants (studies)	Quality of the evidence (GRADE)	Comments
	Risk with Standard care	Risk with Home visiting by public health nurse				
Change in Anxiety symptoms (Females only) assessed with: RBPC follow up: mean 12 months	The mean change in Anxiety symptoms was -2.1	The mean change in Anxiety symptoms in the intervention group was 2.4 higher (0.8 higher to 4 higher)	-	50 (1 RCT) ^a	⊕⊕○○ LOW ^c	Revised Behaviour Problem Checklist with subscale for anxiety / withdrawal symptoms (range: 0-22). Lower scores represent a better outcome. Calculated important difference shows a large effect (SMD = 0.83)

*The risk in the intervention group (and its 95% confidence interval) is based on the assumed risk in the comparison group and the **relative effect** of the intervention (and its 95% CI).

CI: Confidence interval; MD: Mean difference; OR: Odds ratio

GRADE Working Group grades of evidence

High quality: We are very confident that the true effect lies close to that of the estimate of the effect

Moderate quality: We are moderately confident in the effect estimate: The true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different

Low quality: Our confidence in the effect estimate is limited: The true effect may be substantially different from the estimate of the effect

Very low quality: We have very little confidence in the effect estimate: The true effect is likely to be substantially different from the estimate of effect

a. MacMillan, 2005

c. The sample size / number of events are <300 and effect estimate is imprecise.

Multi-systemic therapy compared to Enhanced outpatient treatment for Child Maltreatment

Patient or population: 86 youth (ages 10 to 17 years, 55.8% girls) and the custodial parent who was implicated in the child protection services (CPS) report of physical abuse – all referred by CPS

Setting: Country: U.S. Intervention setting: Public sector mental health center

Intervention: Multisystemic therapy

Comparison: Enhanced outpatient treatment (standard services the Center provided for physically abused youths and their parents as well as enhanced engagement and parent training interventions)

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	N of participants (studies)	Quality of the evidence (GRADE)	Comments
	Risk with Enhanced outpatient treatment	Risk with Multisystemic therapy				
Change in Internalizing symptoms assessed with: CBCL-INT	-	The mean change in Internalizing symptoms in the intervention group was 2.13 lower (3.99 lower to 0.27 lower)	-	86 (1 RCT) ^b	⊕○○○ VERY LOW ^c	Child Behavior Checklist (CBCL-Int), T scores (range 0-100) < 60 are considered normal range, 60-63 as borderline, and scores greater than 63 are in the clinical range. Lower scores are better. Could not calculate important differences because no raw data offered by study to calculate SMD values. (p=0.02)
Change in Externalizing symptoms assessed with: CBCL-EXT	-	The mean change in Externalizing symptoms in the intervention group was 0.75 lower (3.63 lower to 2.13 higher)	-	86 (1 RCT) ^b	⊕○○○ VERY LOW ^{d,e}	Child Behavior Checklist (CBCL-Ext), T scores (range 0-100) < 60 are considered normal range, 60-63 as borderline, and scores greater than 63 are in the clinical range. Could not calculate important differences because no raw data offered by study to calculate SMD values. (p=0.61)
Change in PTSD assessed with: CBCL-PTSD	-	The mean change in PTSD in the intervention group was	-	86 (1 RCT) ^b	⊕○○○ VERY LOW ^c	Child Behavior Checklist PTSD scale (20 items scored 0-2); Possible range 0-40, where a raw score of > 8 or T score >65 (range 0-100) indicates PTSD. Lower scores are better. Could not calculate

		1.43 lower (2.8 lower to 0.06 lower)				important differences because no raw data offered by study to calculate SMD values. (p=0.04)
Change in Anxiety assessed with: TSCC-Anx	-	The mean change in Anxiety in the intervention group was 0.13 lower (0.35 lower to 0.09 higher)	-	86 (1 RCT) ^b	⊕○○○ VERY LOW d,e	Trauma Symptom Checklist for Children (TSC-C), a 54 item self-report (scores on a range of 0-3) with 9 items on Anxiety (range 0-27). Lower scores are better. Could not calculate important differences because no raw data offered by study to calculate SMD values. (p=0.24)
Change in Depression assessed with: TSCC-Dep	-	The mean change in Depression in the intervention group was 0.03 lower (0.27 lower to 0.21 higher)	-	86 (1 RCT) ^b	⊕○○○ VERY LOW d,e	Trauma Symptom Checklist for Children (TSC-C), a 54 item self-report (scores on a range of 0-3) with 9 items on Depression (range 0-27). Lower scores are better. Could not calculate important differences because no raw data offered by study to calculate SMD values. (p=0.80)
PTSD assessed with: Clinical range	214 per 1,000	92 per 1,000 (27 to 262)	OR 0.37 (0.10 to 1.30)	86 (1 RCT) ^b	⊕○○○ VERY LOW d,f	Child Behavior Checklist PTSD scale (20 items scored 0-2); Possible range 0-40, where a raw score of > 8 or T score >65 (range 0-100) indicates PTSD. Lower scores are better. (p=0.12)
Recidivism assessed with: Abuse follow up: mean 10 months	119 per 1,000	45 per 1,000 (8 to 207)	OR 0.35 (0.06 to 1.93)	86 (1 RCT) ^b	⊕○○○ VERY LOW d,f	Based on number of events. (p=0.23)

*The risk in the intervention group (and its 95% confidence interval) is based on the assumed risk in the comparison group and the **relative effect** of the intervention (and its 95% CI).

CI: Confidence interval; MD: Mean difference; OR: Odds ratio

GRADE Working Group grades of evidence

High quality: We are very confident that the true effect lies close to that of the estimate of the effect

Moderate quality: We are moderately confident in the effect estimate: The true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different

Low quality: Our confidence in the effect estimate is limited: The true effect may be substantially different from the estimate of the effect

Very low quality: We have very little confidence in the effect estimate: The true effect is likely to be substantially different from the estimate of effect

- a. Calculated Mean differences and measure of variance (standard error) reported by study. No baseline or post-treatment data provided.
- b. Swenson, 2010
- c. Serious concerns for risk of bias and sample size <300.
- d. Serious concerns regarding risk of bias.
- e. The sample size is <300 and effect estimate is imprecise.
- f. The sample size / number of events are <300 and effect estimate is imprecise.

Project support compared to Treatment as usual for Child Maltreatment

Patient or population: 35 families in which allegations of physical abuse or neglect of a child (aged 3-8 years) were substantiated by CPS and in which it was determined by CPS that the child and family's interests would be best served by keeping the family intact and requiring the mother (or parents) to participate in services

Setting: Country: U.S. Intervention setting: Home-based

Intervention: Project support

Comparison: Treatment as usual (services as usual by CPS; Four of the 18 families did not receive any services, according to CPS records. Of the 14 families who received services, all received some type of parenting intervention)

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	No of participants (studies)	Quality of the evidence (GRADE)	Comments
	Risk with Treatment as usual	Risk with Project support				
Recidivism assessed with: Abuse follow up: mean 8 months	278 per 1,000	58 per 1,000 (8 to 376)	OR 0.16 (0.02 to 1.57)	35 (1 RCT) ^a	⊕○○○ VERY LOW ^{b,c}	Based on number of events. Calculated important difference shows no effect (SMD = 0.16) (p=0.12)

*The risk in the intervention group (and its 95% confidence interval) is based on the assumed risk in the comparison group and the **relative effect** of the intervention (and its 95% CI).

CI: Confidence interval; OR: Odds ratio

GRADE Working Group grades of evidence

High quality: We are very confident that the true effect lies close to that of the estimate of the effect

Moderate quality: We are moderately confident in the effect estimate: The true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different

Low quality: Our confidence in the effect estimate is limited: The true effect may be substantially different from the estimate of the effect

Very low quality: We have very little confidence in the effect estimate: The true effect is likely to be substantially different from the estimate of effect

a. Jouriles, 2010

b. Serious concerns regarding risk of bias.

c. The sample size / number of events are <300 and effect estimate is imprecise.

Internet-based interacting intervention compared to Internet resource comparison for Child Maltreatment

Patient or population: 9 families with children between ages 3 to 9 years who were a subset of participants from a larger study examining the efficacy of a web-based positive parenting skills intervention (I-Interact) with families of children with acquired brain injuries

Setting: Country: U.S. Intervention setting: Home-based

Intervention: Internet-based interacting intervention

Comparison: Internet resource comparison (families were provided access to a study website that had links to a variety of relevant web-based resources, including traumatic brain injury educational material, associations, support groups, recovery, and coping skills and parenting resources)

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	No of participants (studies)	Quality of the evidence (GRADE)	Comments
	Risk with Internet resource comparison	Risk with Internet-based interacting intervention				
Change in Internalizing symptoms assessed with: CBCL-INT follow up: mean 2 months	The mean change in Internalizing symptoms was -7.33	The mean change in Internalizing symptoms in the intervention group was 2.45 higher (5.14 lower to 10.04 higher)	-	7 (1 RCT) ^a	⊕○○○ VERY LOW b,c	Child Behavior Checklist (CBCL-Int), T scores (range 0-100) < 60 are considered normal range, 60-63 as borderline, and scores greater than 63 are in the clinical range. Lower scores are better. Calculated important difference shows a small effect (SMD = 0.38)
Change in Externalizing symptoms assessed with: CBCL-EXT follow up: mean 2 months	The mean change in Externalizing symptoms was -1.0	The mean change in Externalizing symptoms in the intervention group was 2.7 higher (6.2 lower to 11.6 higher)	-	7 (1 RCT) ^a	⊕○○○ VERY LOW b,c	Child Behavior Checklist (CBCL-Ext), T scores (range 0-100) < 60 are considered normal range, 60-63 as borderline, and scores greater than 63 are in the clinical range. Lower scores are better. Calculated important difference shows a small effect (SMD = 0.38)

Internet-based interacting intervention compared to Internet resource comparison for Child Maltreatment

Patient or population: 9 families with children between ages 3 to 9 years who were a subset of participants from a larger study examining the efficacy of a web-based positive parenting skills intervention (I-Interact) with families of children with acquired brain injuries

Setting: Country: U.S. Intervention setting: Home-based

Intervention: Internet-based interacting intervention

Comparison: Internet resource comparison (families were provided access to a study website that had links to a variety of relevant web-based resources, including traumatic brain injury educational material, associations, support groups, recovery, and coping skills and parenting resources)

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	No of participants (studies)	Quality of the evidence (GRADE)	Comments
	Risk with Internet resource comparison	Risk with Internet-based interacting intervention				
Change in Parent-Child Interaction assessed with: % Praise - DPICS-R follow up: mean 2 months	The mean change in Parent-Child Interaction was 0.0	The mean change in Parent-Child Interaction in the intervention group was 4.5 higher (2.16 higher to 6.84 higher)	-	7 (1 RCT) ^a	⊕○○○ VERY LOW d	Dyadic Parent-Child Interaction Coding System Revised (DPICS-R), Observation coding is continuous & results in total frequency of Praise (+ve behaviour) per 5-minute interval. Higher scores are better. Calculated important difference shows a large effect (SMD = 2.05)
Change in Parent-Child Interaction assessed with: % Reflections - DPICS-R follow up: mean 2 months	The mean change in Parent-Child Interaction was -1.0	The mean change in Parent-Child Interaction in the intervention group was 3 higher (1.81 lower to 7.81 higher)	-	7 (1 RCT) ^a	⊕○○○ VERY LOW b,c	Dyadic Parent-Child Interaction Coding System Revised (DPICS-R), Observation coding is continuous & results in total frequency of Reflections (+ve behaviour) per 5-minute interval. Higher scores are better. Calculated important difference shows a medium effect (SMD = 0.67)

Internet-based interacting intervention compared to Internet resource comparison for Child Maltreatment

Patient or population: 9 families with children between ages 3 to 9 years who were a subset of participants from a larger study examining the efficacy of a web-based positive parenting skills intervention (I-Interact) with families of children with acquired brain injuries

Setting: Country: U.S. Intervention setting: Home-based

Intervention: Internet-based interacting intervention

Comparison: Internet resource comparison (families were provided access to a study website that had links to a variety of relevant web-based resources, including traumatic brain injury educational material, associations, support groups, recovery, and coping skills and parenting resources)

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	No of participants (studies)	Quality of the evidence (GRADE)	Comments
	Risk with Internet resource comparison	Risk with Internet-based interacting intervention				
Change in Parent-Child Interaction assessed with: % Commands - DPICS-R follow up: mean 2 months	The mean change in Parent-Child Interaction was -13.17	The mean change in Parent-Child Interaction in the intervention group was 6.42 higher (8.28 lower to 21.12 higher)	-	7 (1 RCT) ^a	⊕○○○ VERY LOW b,c	Dyadic Parent-Child Interaction Coding System Revised (DPICS-R), Observation coding is continuous & results in total frequency of Commands (-ve behaviour) per 5-minute interval. Lower scores are better. Calculated important difference shows a medium effect (SMD = 0.59)
Change in Parent-Child Interaction assessed with: % Questions - DPICS-R follow up: mean 2 months	The mean change in Parent-Child Interaction was -22.17	The mean change in Parent-Child Interaction in the intervention group was 5.58 lower (36.19 lower to 25.03 higher)	-	7 (1 RCT) ^a	⊕○○○ VERY LOW b,c	Dyadic Parent-Child Interaction Coding System Revised (DPICS-R), Observation coding is continuous & results in total frequency of Questions (-ve behaviour) per 5-minute interval. Lower scores are better. Calculated important difference shows a small effect (SMD = -0.27)

*The risk in the intervention group (and its 95% confidence interval) is based on the assumed risk in the comparison group and the **relative effect** of the intervention (and its 95% CI).

CI: Confidence interval; MD: Mean difference

Internet-based interacting intervention compared to Internet resource comparison for Child Maltreatment

Patient or population: 9 families with children between ages 3 to 9 years who were a subset of participants from a larger study examining the efficacy of a web-based positive parenting skills intervention (I-Interact) with families of children with acquired brain injuries

Setting: Country: U.S. Intervention setting: Home-based

Intervention: Internet-based interacting intervention

Comparison: Internet resource comparison (families were provided access to a study website that had links to a variety of relevant web-based resources, including traumatic brain injury educational material, associations, support groups, recovery, and coping skills and parenting resources)

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	No of participants (studies)	Quality of the evidence (GRADE)	Comments
	Risk with Internet resource comparison	Risk with Internet-based interacting intervention				

GRADE Working Group grades of evidence

High quality: We are very confident that the true effect lies close to that of the estimate of the effect

Moderate quality: We are moderately confident in the effect estimate: The true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different

Low quality: Our confidence in the effect estimate is limited: The true effect may be substantially different from the estimate of the effect

Very low quality: We have very little confidence in the effect estimate: The true effect is likely to be substantially different from the estimate of effect

1. a. Mast, 2014
2. b. Serious concerns regarding risk of bias.
3. c. The sample size is <300 and effect estimate is imprecise.
4. d. Serious concerns for risk of bias and sample size <300.

Child-focused skills development

Social-initiation intervention compared to Attention control for Child Maltreatment

Patient or population: 39 maltreated preschool children (ages 3.1 to 5.3 years, 28 boys) who were enrolled in the Mt. Hope Family Center Day Services Program. Children were referred to the center by the Department of Social Services because they were maltreated or were believed to be at higher than average risk for maltreatment (12 "preventive, 9 physically abused, and 18 neglected children).

Setting: Country: U.S. Setting: Mt. Hope Family Center Day Services Program

Intervention: Social-initiation intervention

Comparison: Attention control (control group dyads met in the same setting as the treatment groups for the same number of play sessions under identical conditions, except that their peer or teacher's aide was instructed to respond positively to social initiations but to refrain from initiating social interactions)

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	N of participants (studies)	Quality of the evidence (GRADE)	Comments
	Risk with Attention control	Risk with Social-initiation intervention				
Change in Anxiety / Psychological problems (Peer initiation) assessed with: PBQ	The mean change in Anxiety / Psychological problems was 9.2	The mean change in Anxiety / Psychological problems in the intervention group was 10.1 lower (15.02 lower to 5.78 lower)	-	24 (1 RCT) ^a	⊕○○○ VERY LOW b	Preschool Behavior Questionnaire (PBQ), a teacher report that yields a total score and three factor scores (hostility, anxiety, hyperactive) (scale 0-2). Score >17 indicates clinical range. Calculated important difference shows a large effect (SMD = -1.74)
Change in Anxiety / Psychological problems (Adult Initiation) assessed with: PBQ	The mean change in Anxiety / Psychological problems was 9.2	The mean change in Anxiety / Psychological problems in the intervention group was 5.5 higher (0.19 lower to 11.19 higher)	-	24 (1 RCT) ^a	⊕○○○ VERY LOW c,d	Preschool Behavior Questionnaire (PBQ), a teacher report that yields a total score and three factor scores (hostility, anxiety, hyperactive) (scale 0-2). Score >17 indicates clinical range. Calculated important difference shows a medium effect (SMD = 0.75)

*The risk in the intervention group (and its 95% confidence interval) is based on the assumed risk in the comparison group and the **relative effect** of the intervention (and its 95% CI).

CI: Confidence interval; MD: Mean difference

Social-initiation intervention compared to Attention control for Child Maltreatment

Patient or population: 39 maltreated preschool children (ages 3.1 to 5.3 years, 28 boys) who were enrolled in the Mt. Hope Family Center Day Services Program. Children were referred to the center by the Department of Social Services because they were maltreated or were believed to be at higher than average risk for maltreatment (12 "preventive, 9 physically abused, and 18 neglected children).

Setting: Country: U.S. Setting: Mt. Hope Family Center Day Services Program

Intervention: Social-initiation intervention

Comparison: Attention control (control group dyads met in the same setting as the treatment groups for the same number of play sessions under identical conditions, except that their peer or teacher's aide was instructed to respond positively to social initiations but to refrain from initiating social interactions)

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	No of participants (studies)	Quality of the evidence (GRADE)	Comments
	Risk with Attention control	Risk with Social-initiation intervention				

GRADE Working Group grades of evidence

High quality: We are very confident that the true effect lies close to that of the estimate of the effect

Moderate quality: We are moderately confident in the effect estimate: The true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different

Low quality: Our confidence in the effect estimate is limited: The true effect may be substantially different from the estimate of the effect

Very low quality: We have very little confidence in the effect estimate: The true effect is likely to be substantially different from the estimate of effect

a. Fantuzzo, 1988

b. Serious concerns for risk of bias and sample size <300.

c. Serious concerns regarding risk of bias.

d. The sample size is <300 and effect estimate is imprecise.

Resilient peer treatment compared to Attention control for Child Maltreatment

Patient or population: 46 socially withdrawn African American Head Start children (ages 3.80 to 5.10 years, 27 girls), 22 of which (47%) had documented history of physical abuse, physical neglect, or a combination.

Setting: Physical Abuse & Neglect

Intervention: Resilient peer treatment

Comparison: Attention control (involved pairing a target child with a classmate of average interactive paly ability. Children met in the same play corners with the same set of toys for the same number of dyadic play sessions. Their play sessions were identical except that they were not paired with a play buddy and the play supporter only supervised their play and did not prompt or encourage interactive peer play between dyad members).

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	N _e of participants (studies)	Quality of the evidence (GRADE)	Comments
	Risk with Attention control	Risk with Resilient peer treatment				
Internalizing symptoms assessed with: SSRS-INT	The mean internalizing symptoms was 73.13 ^a	The mean internalizing symptoms in the intervention group was 15.83 lower (21.8 lower to 9.86 lower)	-	20 (1 RCT) ^b	⊕○○○ VERY LOW ^c	Social Skills Rating System (SSRS), which has a 10-item scale (rated 0-2) for problem behaviours with two factors for externalizing and internalizing problem behaviours. Calculated important difference shows a large effect (SMD = -2.23)
Externalizing symptoms assessed with: SSRS-EXT	The mean externalizing symptoms was 65.13 ^a	The mean externalizing symptoms in the intervention group was 14.03 lower (28.31 lower to 0.25 higher)	-	20 (1 RCT) ^b	⊕○○○ VERY LOW ^c	Social Skills Rating System (SSRS), which has a 10-item scale (rated 0-2) for problem behaviours with two factors for externalizing and internalizing problem behaviours. Calculated important difference shows a large effect (SMD = -0.82)

*The risk in the intervention group (and its 95% confidence interval) is based on the assumed risk in the comparison group and the **relative effect** of the intervention (and its 95% CI).

CI: Confidence interval; MD: Mean difference

Resilient peer treatment compared to Attention control for Child Maltreatment

Patient or population: 46 socially withdrawn African American Head Start children (ages 3.80 to 5.10 years, 27 girls), 22 of which (47%) had documented history of physical abuse, physical neglect, or a combination.

Setting: Physical Abuse & Neglect

Intervention: Resilient peer treatment

Comparison: Attention control (involved pairing a target child with a classmate of average interactive paly ability. Children met in the same play corners with the same set of toys for the same number of dyadic play sessions. Their play sessions were identical except that they were not paired with a play buddy and the play supporter only supervised their play and did not prompt or encourage interactive peer play between dyad members).

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	Nº of participants (studies)	Quality of the evidence (GRADE)	Comments
	Risk with Attention control	Risk with Resilient peer treatment				

GRADE Working Group grades of evidence

High quality: We are very confident that the true effect lies close to that of the estimate of the effect

Moderate quality: We are moderately confident in the effect estimate: The true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different

Low quality: Our confidence in the effect estimate is limited: The true effect may be substantially different from the estimate of the effect

Very low quality: We have very little confidence in the effect estimate: The true effect is likely to be substantially different from the estimate of effect

a. Data at post-treatment / follow-up only. No baseline data provided.

b. Fantuzzo, 1996

c. Serious concerns for risk of bias and sample size <300.

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Web Annex 3a: Systematic Review – Psychosocial interventions for children exposed to maltreatment

Psychosocial Interventions for Children Exposed to Maltreatment: A Systematic Review

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Key Messages

- Child maltreatment, which can be defined as abuse (physical, sexual, emotional) or neglect that occurs to children under 18 years of age, is a major global public health problem, with many physical, emotional, and relationship short- and long-term health consequences across the lifespan, including mental health symptoms and disorders across childhood, adolescence, and adulthood
- The World Health Organization (WHO) guideline development group (GDG) is tasked with assisting in the creation of guidelines for service providers in the health sector who encounter and respond to cases of suspected child maltreatment. In order to do so, the GDG will consider evidence related to three main effectiveness questions (as well as a range of background questions, which are not discussed here): 1) the effectiveness of psychosocial and pharmacological interventions for children exposed to maltreatment, 2) the effectiveness of psychosocial and pharmacological interventions for adolescents and adults who maltreat children (summarized in a separate report), and 3) strategies for identifying children exposed to maltreatment (summarized in a separate report).
- The purpose of this report is to summarize the evidence related to the effectiveness of pharmacological and psychosocial interventions that treat children exposed to maltreatment. While rarely defined in the literature, psychosocial interventions usually refer to non-pharmacological interventions, such as psychoeducation or counseling interventions.
- As a previous WHO GDG group has already evaluated evidence specific to children exposed to sexual abuse, only interventions that address children's exposures to physical abuse, emotional abuse, and neglect are summarized in this report.
- Thirty-six articles representing 29 studies (randomized controlled trials) were included in this review.
- A variety of psychosocial interventions are addressed in this review, including 1) counseling/therapy interventions, 2) parenting interventions delivered in a) a clinic or community setting or b) a home setting (often referred to as home visiting interventions) and 3) child-focused skill development interventions.
- We have very low certainty in most of the evidence included in this review, due to serious concerns for risk of bias and very serious concerns for imprecision. Only the large SafeCare trial

and some aspects of parent-child interaction therapy (PCIT) were rated as moderate certainty evidence

- **Counseling/therapy interventions.** There is little evidence of effectiveness for counseling/therapy interventions for children exposed to maltreatment, although for children exposed to maltreatment (usually physical abuse, neglect, emotional abuse) we have very low certainty that preschooler-parent psychotherapy (PPT) may enable an increase in positive parent-child interaction. There is also mixed results for counseling/therapy interventions for children exposed to physical abuse and neglect, in that interventions a) seem to reduce some mental health symptoms but not others or b) do not reduce mental health symptoms at all. We do have very low certainty that individual parent and child cognitive behavioural therapy may enable small benefits in recurrence rates and may enable small reductions in internalizing and externalizing symptoms.
- **Parenting interventions, clinic or community setting.** We have very limited evidence in the effectiveness of parenting interventions delivered in a clinic- or community setting, with the exception of parent-child interaction therapy for physical abuse and neglect. For parent-child interaction therapy, we have moderate certainty evidence that it enables small benefits to internalizing and externalizing symptoms at post-treatment, and low certainty evidence that it enables small reductions in recurrence rates and small to large increases in positive parent-child interaction.
- **Parenting interventions, home-based.** For parenting interventions delivered in a home setting, we have moderate certainty evidence that SafeCare enables small reductions in recurrence rates for preschool children exposed to maltreatment, low certainty evidence that home visiting with a public health nurse may enable small reductions in recurrence rates for children (average age of 5 years) exposed to physical abuse and neglect, and very low certainty evidence that multisystemic therapy may enable small reductions in recurrence for children (ages 10-17) exposed to physical abuse, and that Project Support may enable small reductions in recurrence rates for children (ages 3-8) exposed to physical abuse and neglect. Other than this, evidence for the effectiveness of parenting interventions delivered in a home setting for children exposed to maltreatment is limited and conflicting, especially showing limited benefits to mental health symptoms.
- **Child-focused skill development.** We have very low certainty evidence that child-focused skill development interventions may enable reductions in internalizing and externalizing symptoms and behaviour problems at post-treatment.

Abstract

Background. In order to support the creation of guidelines for service providers in the health sector who encounter and respond to cases of suspected child maltreatment, this report addresses the effectiveness of psychosocial interventions for children exposed to maltreatment (specifically physical abuse, emotional abuse, and neglect, as child sexual abuse is addressed by a different GDG). **Method.** Systematic searches were conducted to retrieve any published randomized controlled trials of psychosocial or pharmacological interventions that addressed children exposed to physical abuse, emotional abuse, or neglect. Searches were conducted 10 databases from database inception until June 24, 2016. While the search terms used in the strategies were English, all languages were screened and were eligible for inclusion. Eligible outcomes for data extraction included child depression, anxiety, PTSD, externalizing symptoms, internalizing symptoms, subjective well-being, suicide ideation/behaviour, positive caregiver-child interaction, and reduction of caregiver involvement with authorities. The quality of studies was assessed using the Cochrane Risk of Bias tool and the overall certainty of the included evidence was assessed using GRADE criteria. **Setting:** All healthcare and social service settings were included. **Results.** Thirty-six articles representing 29 studies were included. No pharmacological interventions targeted at children exposed to maltreatment were found. Instead, a variety of psychosocial interventions are addressed in this review. The results indicate that there is very low certainty in the benefit of much of the psychosocial interventions for child maltreatment. Some parenting interventions delivered in a clinic or community setting, such as PCIT, improve parent-child interactions and other mental health outcomes. Some home-based parenting interventions, such as SafeCare, enable small reductions in recurrence rates. **Discussion.** These findings suggest that much work needs to be done to evaluate effective psychosocial interventions for children exposed to child maltreatment. Evidence about interventions for children exposed to neglect is particularly weak and evidence specific to children exposed to emotional abuse is entirely absent. Also absent in the included studies is any assessment of child suicidal ideation/behaviour or child subjective well-being, which the GDG ranked as essential for decision making.

6. Background

Child maltreatment, which can be defined as abuse (physical, sexual, emotional) or neglect that occurs to children under 18 years of age, is a major global public health problem, with many physical,

emotional, and relationship short- and long-term health consequences across the lifespan, such as injury and attachment disorders in infancy, academic failure and poor peer relationship in childhood, drug abuse in adolescence, relationship problems and maltreatment of one's own children in adulthood, and mental health symptoms and disorders across childhood, adolescence, and adulthood¹⁻⁵. Global estimates of child maltreatment indicate that a significant proportion of adults have experience child maltreatment as a child, including childhood physical abuse (22.6%), emotional abuse (36.3%), neglect (16.3%), and sexual abuse (18% of women and 7.6% of men)⁶⁻⁸. Furthermore, these forms of violence are often co-occurring,⁹ which can increase children's risk for impairment¹⁰⁻¹². The World Health Organization (WHO) guideline development group (GDG) is tasked with assisting in the creation of guidelines for service providers in the health sector who encounter and respond to cases of suspected child maltreatment. In order to do so, the GDG will consider evidence related to three main effectiveness questions (as well as a range of background questions, which are not discussed here): 1) the effectiveness of psychosocial and pharmacological interventions for children exposed to maltreatment, 2) the effectiveness of psychosocial and pharmacological interventions for adolescents and adults who maltreat children (summarized in a separate report), and 3) strategies for identifying children exposed to maltreatment (summarized in a separate report). The purpose of this report is to summarize the evidence related to the effectiveness of pharmacological and psychosocial interventions that treat children exposed to maltreatment. As a previous WHO GDG group has already evaluated evidence specific to children exposed to sexual abuse (guidelines specific to this process can be found here¹³), only interventions that address children's exposures to physical abuse, emotional abuse, and neglect are summarized in this report.

The Oxford English Dictionary defines the term "psychosocial" as "of or relating to the interrelation of social factors and individual thought and behaviour"¹⁴. In research literature, "psychosocial intervention" is rarely defined, but is often used to refer to non-pharmacological interventions, such as psychoeducation, psychotherapy, counseling, and eye-movement desensitization and reprocessing (EMDR) therapy. In addition to pharmacological interventions, the following types of psychosocial interventions are addressed in this review: 1. Counseling/therapy interventions, 2. Parenting interventions delivered in a clinic or community setting, 3. Parenting interventions delivered in a home setting (often referred to as home-visiting interventions), and 4. Child-focused skill development interventions. With a focus on these interventions, this review addresses the following broad questions:

- For children (0 to <18 years) exposed to CM and who are at risk of experiencing mental health difficulties (P), does psychosocial intervention A, compared to psychosocial intervention B or no psychosocial intervention (C), result in better child well-being outcomes (O)?
- For children (0 to <18 years) exposed to CM and who are at risk of experiencing mental health difficulties (P), does pharmacological intervention A, compared to pharmacological intervention B or no pharmacological intervention or pharmacological intervention B (C), result in better child well-being outcomes (O)?

7. Methods

In order to answer the above questions, a systematic review was conducted. A protocol for this review is registered with the online systematic review register, PROSPERO (PROSPERO 2016:CRD42016039656). In order to conduct this systematic review, the searches of a closely related review by the Agency for Healthcare Quality (AHRQ) were updated. This review, titled *Child Exposure to Trauma: Comparative Effectiveness of Interventions Addressing Maltreatment*,¹⁵ assessed the comparative effectiveness of interventions (psychosocial and/or pharmacological) for children age 0 to 14 exposed to maltreatment in addressing child wellbeing outcomes (mental and behavioral health; caregiver-child relationship; cognitive, language, and physical development; school-based functioning) and child welfare outcomes (safety, placement stability, and permanency). However, our search was broader than those listed in the AHRQ report in several ways.

- VI. The AHRQ report did not include interventions for children over the age of 14, although their searches were sufficiently broad enough to capture this group (e.g., terms for “adolescents” were included in the search). Therefore, all studies in their report included under the “Wrong population” heading (n=203) were screened for potential inclusion.
- VII. Their report also included only English-language references, so all non-English references (n=142) during the time period of their search (1990-May 2012) were screened.
- VIII. There was seen to be no clinically relevant reason to exclude studies older than 1990, so the search was extended to include all studies published before 1990.
- IX. An updated search was conducted (June 24, 2016) to capture studies published after the AHRQ search end date (May 2012).
- X. The AHRQ search was only run in PubMed, PsycINFO, and Web of Science. In order to ensure adequate subject coverage, including studies from low- and middle-income countries (LMICs) and non-English studies, additional databases beyond those in the AHRQ report were searched,

including Cochrane, Embase, CINAHL, Sociological Abstracts, ERIC, Social Work Abstracts, Social Services Abstracts, Criminal Justice Abstracts, ASSIA, Campbell Corporation, WHO Index Medicus (discussed below)

7.1. Inclusion Criteria

With these modifications, our report addresses the following PICO criteria:

- X. **Population:** Included studies had to include at least 80% children (0-17) exposed to child maltreatment, including physical abuse, neglect, or emotional abuse.
- XI. **Intervention:** Included studies could address any psychosocial or pharmacological intervention.
- XII. **Comparator:** Included studies could be any form of psychosocial/pharmacological intervention or no intervention.
- XIII. **Outcomes:** In June/July 2015, the WHO child maltreatment guideline development group (GDG) and the VEGA CM evidence review group (ERG) ranked outcomes on a scale of 0-9, where 1-3 represent “unimportant” outcomes; 4-6 represent “important, but not critical outcomes” and 7-9 represent “critical” outcomes for decision-making. Rankings across these two groups were very similar and were combined to include the following nine essential outcomes: 1. Child depression, 2. Child anxiety, 3. Child subjective well-being, 4. Child internalizing symptoms, 5. Child externalizing symptoms, 6. Child PTSD, 7. Child suicidal ideation/behaviour, 8. Positive caregiver-child interaction, and 9. Reduction of caregiver involvement with authorities.
- XIV. **Study type:** While the AHRQ search included terms for RCTs & cohort studies, only RCTs were considered for inclusion in this review.
- XV. **Publication type:** Only published articles were considered for inclusion in this review.
- XVI. **Setting:** Interventions from any country or setting were included.
- XVII. **Languages:** While the search terms used were English, all retrieved languages were screened and eligible for inclusion.
- XVIII. **Date range:** All dates until June 24th, 2016 (when search was executed).

7.2. Exclusion Criteria

Studies were excluded if they represented the wrong population, intervention, or study type.

- IV. **Wrong population.** Studies that addressed general trauma (e.g., population exposed to maltreatment and other traumas, such as car accidents) were excluded. Studies that included a different population (e.g., depressed adolescents, general failure to thrive) were excluded,

including when they did secondary analysis specific to maltreatment were excluded. Studies that addressed primary prevention of child maltreatment (e.g., targeted at risk mothers) were excluded. Studies that addressed primarily child sexual abuse were addressed by the other guideline group.¹³

- V. **Wrong study design.** Non-RCTs were excluded, as were non-published studies, such as conference abstracts, books, and unpublished literature (such as dissertations).
- VI. **Wrong outcomes.** Studies that did not address the child well-being and recurrence outcomes listed above were excluded (e.g., studies that addressed adult outcomes only).

7.3. Sources

To answer the above PICO questions, records were obtained through two sources:

- c. Database searching
- d. Citation chaining

7.3.1.Database searching

When translating AHRQ searches into additional databases suggested by the WHO librarian, the search strategy was kept as close as possible to the AHRQ PubMed search (i.e., direct translation of search strategy). However, for a few of the non-medical databases (Sociological Abstracts, ERIC, Social Work Abstracts, Social Sciences Abstracts, Criminal Justice Abstracts, ASSIA), only the child maltreatment terms and study design terms were used, as these databases did not contain any index terms for psychosocial interventions (see Appendix I).

7.3.2.Citation chaining

All included studies were subjected to citation chaining whereby all relevant citations in the articles were screened and potential relevant articles citing these studies (in Google Scholar) were screened (more details available from report author). Relevant systematic reviews and meta-analyses that were identified through citation chaining were also screened for relevant results.

7.4. Data extraction

For each included study, review team members extracted data about the population, study design, intervention, analysis and results for outcomes rated as essential through the GRADE outcome rating process. One team member completed full extraction (study characteristics and results) using electronic data extraction forms. A second team member then verified all extracted data; disagreements were

resolved through discussion and/or third party consultation when consensus could not be reached. All findings in text and tables were checked in a third round of verification.

7.5. Quality assessment

Studies were assessed using the Cochrane Review Manager Risk of Bias tool¹⁶. This rating tool covers six domains: sequence generation; allocation concealment; blinding of participants, personnel and outcome assessors; incomplete outcome reporting; selective outcome reporting; and other risk of bias (see Appendix II). For the other risk of bias domain, we examined significant baseline imbalance/differences on important characteristics between groups, contamination, and industry funding.

Information to determine risk of bias was extracted from the primary methodology paper for each study and any other related published papers (see Appendix II). For each study, one team member completed the initial ratings which were then verified by a second person; disagreements were resolved through discussion and/or third party consultation when consensus could not be reached. To assign a high or low risk of bias rating for a particular domain team members looked for explicit statements or other clear indications that the relevant methodological procedures were or were not followed. In the absence of such details, a rating of “unclear” was assigned to the applicable risk of bias domains. Study authors were not contacted to verify missing/unclear information.

For the risk of bias tool, the first two categories (sequence generation and blinding of participants/patients and providers/personnel) carry the most weight. A study can only be rated as an overall “low risk” of bias, if none of the individual domains are rated as high risk and the first two domains are low risk. A study is rated as an overall “unclear” risk of bias, if most of the domains are “unclear” and the first two domains are not high risk. A study is rated as an overall “high” risk of bias, if most of the domains are “unclear” or “high risk” and the first two domains are high risk as well. For example, most of the studies were silent about strategies for sequence generation, allocation methods, and blinding of outcome adjudicators and so were ranked as “unclear” for these domains. While studies may have one domain rated as “high” risk of bias, with overall “unclear” risk of bias across domains most studies were ranked overall as “unclear” risk of bias.

7.6. GRADE assessment

Evidence for each review included in this document was assessed using the GRADE system. The GRADE system rates the quality of a body of evidence as high, moderate, low or very low; each of the

four levels reflects the certainty in the evidence and the likelihood that further research will have an impact on the estimate of effect. High quality evidence means that we are very confident that the true effect lies close to that of the estimate of the effect, whereas moderate quality means we are moderately confident in the effect estimate and the true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different. Low quality means that our confidence in the effect estimate is limited and the true effect may be substantially different from the estimate of the effect. Very low quality means that we have very little confidence in the effect estimate and the true effect is likely to be substantially different from the estimate of effect.

A GRADE rating is based on an assessment of five domains: (1) risk of bias (limitations in study designs), (2) inconsistency (heterogeneity) in the direction and/or size of the estimates of effect, (3) indirectness of the body of evidence to the populations, interventions, comparators and/or outcomes of interest, (4) imprecision of results (few participants/events/observations, wide confidence intervals), and (5) indications of reporting or publication bias. A body of evidence based on RCTs begin with a high quality rating which may be downgraded for each of the five domains that are rated as “serious concern” or “very serious concern”. For example, with respect to risk of bias, if all (or the majority) of the studies were rated as low risk of bias, they would be categorized as “no serious concern”; if all (or the majority) of the studies were rated as unclear risk of bias, then that body of evidence would be categorized as “serious concern”; if all (or the majority) of the studies were rated as high risk of bias, then that body of evidence would be categorized as “very serious concern”. The majority of the evidence (which is based on RCTs) is rated as unclear risk of bias overall (or “serious concern”), so this would downgrade the body of evidence from high confidence to moderate confidence.¹⁹ (This body of evidence is downgraded further for other reasons, as discussed below.) As the GRADE assessment is interested in how future research might impact the estimate of effect, we did not downgrade for indirectness due to no included studies from low- and middle-income countries (LMICs) because we did not think that the effect size of an intervention conducted in a HIC would be lower in a LMIC context. Concerns about lack of evidence from LMICs are still important, however, and should be addressed in the acceptability and feasibility section of the evidence to decision table. For example, an intervention may not be culturally translatable. This may mean that a moderate certainty intervention with positive

¹⁹ Only one study was rated as overall low risk of bias (MacMillan 2005¹⁷) and only one study was rated as overall high risk of bias (Sullivan 1992¹⁸)

effects on child well-being outcomes may still not be recommended because it is not acceptable or feasible.

7.7. Data analysis

In order not to smooth out effects across intervention types and genders, the analysis has been segmented according to intervention type and gender. Where appropriate data were available, data synthesis was performed to pool the results. Otherwise we employed qualitative narrative synthesis of extracted data and results are reported according to intervention type.

For the purposes of presenting evidence as is standard in GRADE tables, some calculations were completed. For this review, the effect estimates were calculated as Mean Difference (MD) for continuous outcomes using single measures, Standardized Mean Difference (SMD) for continuous outcomes using multiple measures, and Odds Ratio (OR) for dichotomous outcomes.

The DerSimonian and Laird random effects model with inverse variance (IV) method was utilized to generate the summary measures of effect in the form of MD if outcome was reported using a single outcome measure or SMD if outcome was reported using multiple outcome measures.²⁰ SMD was used as a summary statistic for outcomes reported using different scales or measures, as it is necessary to standardize the results of the studies to a uniform scale before they could be compared across studies or combined in a quantitative synthesis. MD and SMD were calculated using change from baseline to end-point data where possible; if baseline data was not provided, effect estimates were calculated using end-point/follow-up data. For studies that did not report baseline values, MDs were calculated using post-treatment or follow-up/end-point values. (Studies that reported only post-treatment data include: some data in Toth 2002¹⁹, Reams 1994²⁰, Deblinger 2011²¹, Sullivan 1992¹⁸, Cicchetti 2006²², Fantuzzo 1996²³, Moore 1998²⁴, Spieker 2012²⁵). For studies that did not report SD, we calculated this value from reported measures of variance such as standard error (SE) of the mean, the 95% confidence intervals (CI), and p-values or z-values using equations provided in chapter 7 and chapter 9 of the Cochrane Handbook for Systematic Reviews of Interventions²⁶. Findings from studies that reported no data for variance or no means were reported narratively. Studies (sometimes only part of studies) that were reported narratively include: Hyde 1995²⁷, Swenson 2010²⁸, Chaffin 2012²⁹, Brunk 1987³⁰, Nicol 1988³¹, Brown 2001³², Egan 1983³³, and Bernard 2015³⁴.

²⁰ For an accessible video about the difference between MD and SMD from a public health perspective: <https://www.youtube.com/watch?v=X-UIZ1XE1JI>.

As SMD is not tied to any unit of measurement, it can be challenging to interpret the result. In general, SMD scores can range from -1 to +1. An SMD score of 0 can generally be interpreted to mean that the intervention had no effect. An SMD score that is closer to +1 or -1 could be a positive or negative finding depending on the outcome being measured. For example, the Beck Depression Inventory (BDI) has a total range of 0 to 63. A total BDI score of 10-18 indicates mild depression; 19-29 moderate depression, and 30-63 severe depression. A BDI SMD of -0.22 might indicate a small decrease in depression (in this case a more negative score indicates an improvement in the patient's symptoms). It is therefore essential to clearly indicate if increasing values show that a patient is getting better (e.g., depression is lessening) or worse (e.g., depression is worsening). Based on Cohen's rule of thumb,³⁵ an SMD value of 0.2 or less indicates a small effect, a value of 0.5 indicates a medium effect and a value of 0.8 or larger indicates a large effect.

An example of an MD calculation using change from baseline to end-point data follows. In the study by Foa and colleagues³⁶ PTSD is measured using the Child PTSD Symptom Scale–Interview (CPSS-I), where scores range from 0-51; 0-10, below threshold; 11-15, subclinical; 16-20, mild; 21-25, moderate; 26-30, moderately severe; 31-40, severe. In their study, the mean change in CPSS-I score (PTSD) from baseline to immediate-post treatment was -20.6 (27.3 - 6.7) for prolonged exposure group and -13.3 (29.4 - 16.1) for the supportive counselling group, resulting in a MD in change score of -7.30 (95% CI, range -10.60 to -4.0) favoring the prolonged exposure group. On average the measure of PTSD reduction in the group receiving prolonged exposure therapy was 7.3 points more than the reduction in PTSD measured in the conventional therapy group.

As most of the included studies are small, most studies report significant differences between on key outcomes across intervention and control groups at baseline. By calculating MD using change scores (differences between baseline and post-treatment data), we account for these differences across intervention and control groups. For example, suppose that an intervention group A had a baseline score of 65 on the Child Behaviour Checklist (CBCL) and control group B had baseline score of 58 on the CBCL (where higher scores indicate worse symptoms) and at post-treatment both groups had a CBCL score of 58. If we only used post-treatment data, we would report a MD score of 0 (58-58). However, if we calculate change scores from baseline to post-treatment for both groups (65-58=7 for group A; 58-58=0 for group B) we would find a baseline-post-treatment MD score of -7.0, suggesting a benefit for the intervention group. Thus, all MD scores discussed below represent change scores unless otherwise specified.

OR, finally, refers to the “ratio of the odds of an event”²⁶. Odds ratio is the odds of an event in the intervention group as a ratio of the odds of the event in the comparator group [(Si/Sc) / (Fi / Fc), see Table 1]. For example, Foa 2013³⁶ used clinical criteria for the Schedule for Affective Disorders and Schizophrenia for School-Age Children (K-SADS) to assess for PTSD diagnosis in the intervention group (prolonged exposure) and the controlled group (supportive counseling). At post-treatment, 21.6% (7/31) of the prolonged exposure group had a PTSD diagnosis compared to 55.2% (17/30) of supportive counseling group. The OR for this intervention, is 0.22 (95% CI, range 0.07 to 0.68) favoring prolonged exposure group. This means that the odds of a PTSD diagnosis in the prolonged exposure group was 0.22 times that of the other group (roughly one-fifth). To improve understanding of the odds ratio, the odds ratio was used to calculate what happens to children receiving prolonged therapy based on what happens to children receiving supportive counselling. For example, after supportive counselling 567 children per 1000 would be diagnosed with PTSD, but after prolonged exposure therapy 223 per 1000 would be diagnosed with PTSD.

Table 1. Calculating Odds Ratio (OR)			
	Events ("Success" (S) = no PTSD diagnosis)	No event ("Fail"(F) = PTSD diagnosis)	Total
Intervention group (i) (prolonged exposure)	Si (24)	Fi (7)	31
Control group (c) (supportive therapy)	Sc (17)	Fc (13)	30
Odds ratio = [(Si/Sc) / (Fi/Fc)] = (24/17) / (7/13) = 0.22			

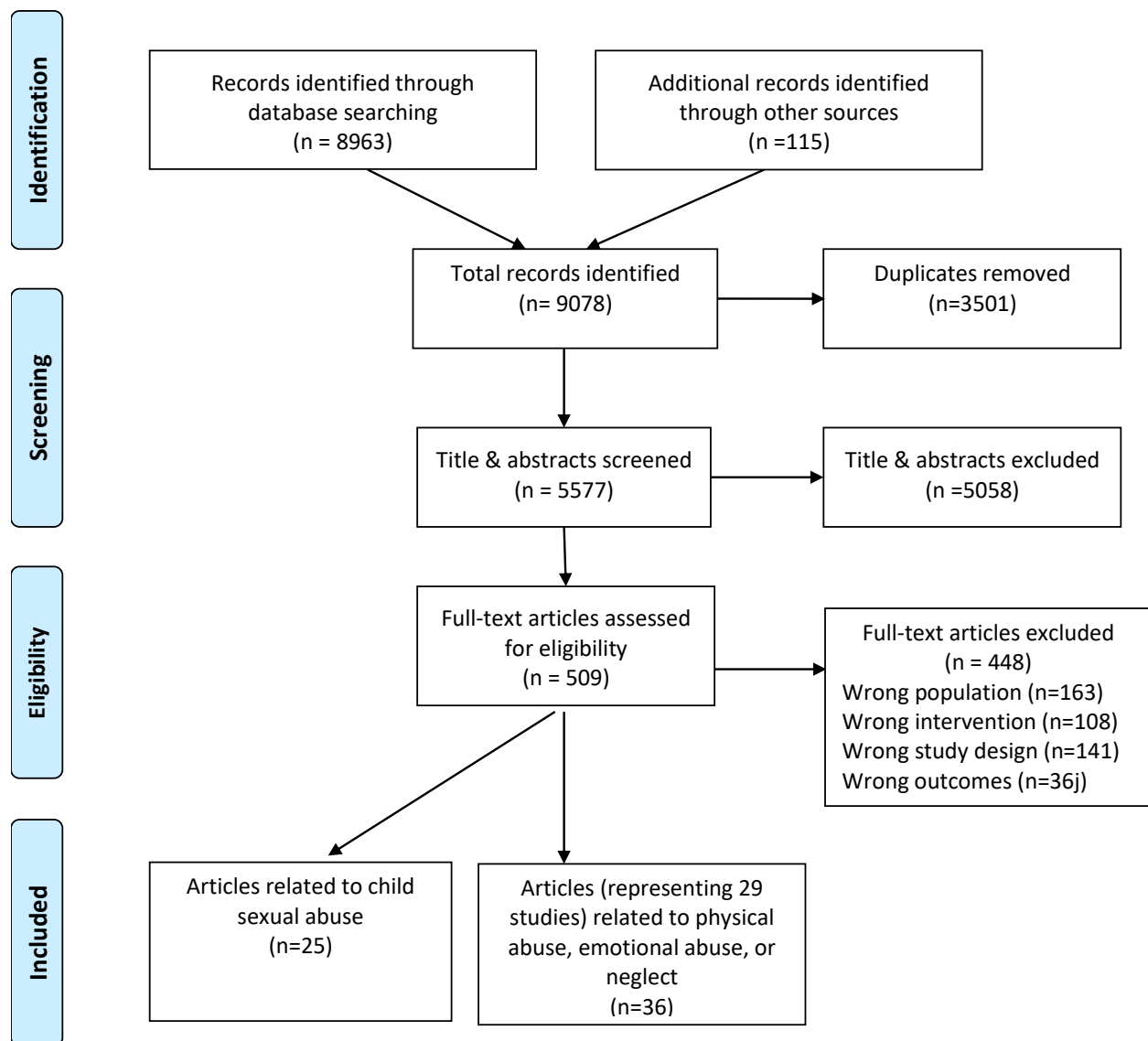
Finally, in order to characterize the size of the effect, calculated important difference values are shown in the GRADE tables following the description of the measures (e.g., SMD = -1.10). These differences follow Cohen’s rule of thumb, where an SMD value under 0.2 indicates no effect; a value of 0.2 to 0.49 indicates a small effect; a value of 0.5-0.79 indicates a medium effect; and a value of 0.8 and above a large effect. As such, a difference change score of -7.30 (with a calculated important difference of SMD = -1.10) could be characterized as a large benefit to PTSD symptoms for the prolonged exposure group.

8. Results

In total, 9078 records were identified through database searching and citation chaining, 5577 records were screened at the title and abstract level for inclusion, 509 full-text articles were screened

for inclusion, and 36 articles (representing 29 studies) were included in this review (see Figure 1). A list of excluded studies can be found in Appendix V. The rest of this report is segmented according to following interventions of interest: 1. Counseling/therapy interventions, 2. Parenting interventions delivered in a clinic or community setting, 3. Parenting interventions delivered in a home setting, and 4. Child focused skill development interventions.

Figure 1. PRISMA Diagram of Included Studies



8.1. Description of studies, GRADE assessment

All of the studies for the psychosocial interventions included in this report were RCTs. Study numbers across psychosocial interventions and maltreatment types were as follows: 13 studies addressed counseling/therapy interventions, six studies addressed parenting interventions in a clinic or community setting, 10 studies address parenting interventions in a home setting, and 2 studies addressed child focused skill development (see Table 2). Further discussion of included studies is found below.

GRADE assessment. Overall, much of the evidence included in this review is ranked as “very low” quality and was most often downgraded for serious risk of bias and very serious imprecision, because the number of children contributing to most outcomes was less than 300 (which makes the estimate of effect less precise), and confidence intervals around the effect included both no effect and important benefit/harm. More explicitly, this means that the body of evidence started as “high” quality (because only RCTs were included), but was downgraded to “moderate” quality due to serious concerns for risk of bias, then downgraded to “low” quality for small numbers of children contributing data and finally was downgraded to “very low” quality for serious concerns about imprecise effect sizes. Very low certainty evidence suggests that we have very little confidence in the effect estimate and the true effect is likely to be substantially different from the estimate of effect. It is likely that further research could have an impact on the estimate of effect.

Limited data on essential outcomes. No data was found about child suicidal ideation or behaviour or child subjective well-being. Also, very few studies reported data about if the interventions impacted recurrence rates. Finally, no adverse events related to the treatments were reported by the study authors.

Table #2. Summary of the quality and certainty of psychosocial interventions directed at children exposed to maltreatment

Abuse type	Country	Psychosocial intervention	Baseline N	Setting	Child Age	# RCTs	Quality	Certainty
		Counseling/therapy				26		
CM (multi-abuse)	U.S.	• Project Chrysalis ³²	1108	Com	A	6	U	-
	U.S.	• Child-parent psychotherapy ^{19,22}	113	Com, clin	T/P		U	VL
	U.S.	• Multi-family group therapy ³⁷	81	Com	T/P/S		U	VL
	U.S.	• Cognitive behavioral therapy (CBT) ³⁸	43	Clin	A		U	VL
	U.S.	• Play therapy ²⁰	41	Com	P		U	VL
PA & N	U.S.	• CBT ^{39,40}	159 (Families)	Clin	S	5	U	VL
	U.S.	• Family therapy ⁴⁰	55	Clin	S		U	VL
	UK	• Play therapy ³¹	38	Clin	I/T/P/S		U	VL
	JO	• CBT-TF ⁴¹	18	Clin	A		U	VL
	U.S.	• Cognitive behavioural training ⁴²	12	Com	A		U	VL
N	DE	• Dyadic music therapy ⁴³	19	Com	S	1	U	VL
		Parenting interventions						
		C) Clinic or community-based				6		
CM (multi-abuse)	U.S.	• Parent child interaction therapy ^{44,45}	301 (Dyads)	Clin	P	2	U	Moderate*
	U.S.	• Stress management ³³	41	Com	T/P/S		U	VL
PA & N	U.S.	• Parent child interaction therapy ^{46,47}	302 (Dyads)	Clin	T/P/S	1	U	Moderate*
N	U.S.	• Families actively improving relationships program ⁴⁸	31	Com	Not stated	1	U	VL
		D) Home-based				11		
CM (multi-abuse)	U.S.	• SafeCare ²⁹	2175	Home	P	8	U	Moderate
	U.S.	• Promoting first relationships ²⁵	210 (Dyads)	Home	I/T		U	VL
	CA	• Attachment oriented home visits ⁴⁹	89	Home	T/P		U	VL
	U.S.	• Psychoeducation home visits ¹⁹	64	Home	P		U	VL
	U.S.	• Psychoeducational parenting intervention ²²	53	Home	P		U	VL
	U.S.	• Multi-systemic therapy ³⁰	43 (Families)	Home	S		U	VL
PA & N	CA	• Home visits by nurses ¹⁷	163	Home	P	3	Low	Low
	U.S.	• Multi-systemic therapy ²⁸	86 (Dyads)	Home	S/A		U	VL
	U.S.	• Project Support ⁵⁰	35	Home	P/S		U	VL
	U.S.	• Internet-based interacting together everyday ⁵¹	9 (Families)	Home	P/S		U	VL
N		• Attachment & biobehavioural catchup ³⁴	40	Home	P/S		U	VL
		Child-focused skills training				2		
PA & N	U.S.	• Social skills training ^{23,52}	85	Comm	P	2	U	VL

CM=child maltreatment; PA & N=physical abuse & neglect; N=neglect-specific
U.S.=United States; UK=United Kingdom; JO=Jordan; DE=Denmark; CA=Canada

Com=Community; Clin=Clinic; Hom=Home-based

I=infant (0-1); T=toddler (1-3); P=Preschooler (3-5); S=school-aged (6-12); A=adolescent (13-17)

U=uncertain risk of bias

VL=very low certainty

*CBT-TF is moderate certainty for those trials that compared CBT-TF vs. non-CBT therapies (which we were able to pool). PCIT is moderate evidence for externalizing and externalizing symptoms, low certainty evidence for other outcomes of interest.

The results of this review are organized below according to intervention type then maltreatment type. Calculated important differences are presented in the GRADE tables following the description of the measures. These differences follows Cohen’s rule of thumb, where an SMD value under 0.2 indicates no effect; a value of 0.2 to 0.49 indicates a small effect; a value of 0.5-0.79 indicates a medium effect; and a value of 0.8 and above a large effect.

Counseling/therapy interventions

8.2. Counseling/therapy interventions

8.2.1. Child maltreatment

Participant and study characteristics. Six RCTs addressed counseling/therapy interventions for child maltreatment (participant and study characteristics can be found in Appendix III). These studies addressed a variety of intervention types (Project Chrysalis, child-parent psychotherapy, CBT, multifamily group therapy, and play therapy). Children with a ranged of abuse exposures where included in the studies, including physical abuse, neglect, emotional abuse, and sexual abuse. Notably, 58% of included children in Shirk’s 2014³⁸ CBT study had been exposed to parental IPV. Most interventions were delivered by masters or doctoral level therapists or psychologists. Most of the interventions were delivered to younger children (children under 12) (Cicchetti 2006²², Toth 2002¹⁹, Meezan 1998³⁷), including studies directed at infants (Cicchetti 2006²²) and preschoolers (Toth 2002¹⁹, Reams 1994²⁰). Two studies were delivered to adolescents (Brown 2001³², Shirk 2014³⁸). Sex of included children was mixed: the child-parent psychotherapy studies (Cicchetti 2006²², Toth 2002¹⁹) included approximately 50% boys and 50% girls, Shirk’s 2014³⁸ CBT study included a majority of adolescent girls, Brown’s 2001³² included only girls, and Ream’s 1994²⁰ play therapy intervention included a majority of boys. All studies took place in a high-income setting (the U.S.).

Risk of bias. The complete risk of bias table for the included studies is found in Appendix IV. Many of the studies did not state the use of a low-risk method of sequence generation (e.g., random number table) or a low-risk method of allocation concealment (e.g., centralized telephone), so were unclear or high risk in these areas. It is challenging to blind participants/providers in psychosocial interventions, so most studies had an unclear or high risk of bias for this category. Three of the studies (Shirk 2014³⁸, Brown 2001³², Meezan 1998³⁷) did not blind outcome assessors, making them unclear risk

of bias for this category. Three studies (Cicchetti 2006²², Toth 2002¹⁹, Brown 2001³²) had a high risk of bias for incomplete outcome data, as they didn't state a reason for why a high number of participants dropped out of the study. One study (Shirk 2014³⁸) was rated as having high risk of bias for selective reporting, as the authors reported that the Child Behaviour Checklist (CBCL) was administered at baseline and follow-up, but only baseline data is reported. This study (Shirk 2014³⁸) was also rated as having high risk of "other" bias, as there authors note that there was significant baseline differences between the two groups (the intervention group was significantly more likely to be prescribed psychotropic medicine compared to the control group). Overall, all six included studies were rated as unclear risk of bias.

GRADE assessments. Overall, the evidence included in this review is ranked as "very low" quality and was most often downgraded for serious risk of bias and very serious imprecision. Very low certainty evidence suggests that we have very little confidence in the effect estimate and the true effect is likely to be substantially different from the estimate of effect. It is likely that further research could have an impact on the estimate of effect.

Outcomes.

Project Chrysalis (1 study). One study (Brown 2001³²) investigated Project Chrysalis for adolescent girls (ages 14-18). For assessment of depression and suicidal risk, the authors did not use standardized measures and so the results should be interpreted with caution. The authors measures symptoms of depression and hopelessness by having participants to "report all the symptoms they felt nearly every day for a week or more during the past 12 months". To assess changes in depression, the authors summed the 14 items "to create one score with a higher score that reflected the presence of more symptoms". In terms of changes to depression, the authors report that "Throughout the study, Project Chrysalis had no effect on the reported number of depressive symptoms" In terms of suicide risk, participants in Project Chrysalis were asked an additional four questions about suicidal thoughts or attempts in the last year. The authors report that responses to these questions "were averaged to create a composite index representative of an overall suicide risk score". In terms of changes in suicidal risk/thoughts, the authors report that "No significant program effects were found immediately following participation in Project Chrysalis". Further, the authors suggest that Project Chrysalis session attendance and negative (lessening) suicide risk scores "reached significance at Follow-up 2 and was found to account for 2.2% of the variance associated with suicide-risk scores 2 years after participation in Project Chrysalis".

Child-parent psychotherapy vs. community control (2 studies). One study (Toth 2002¹⁹) examined preschooler-parent psychotherapy (PPP) for boys/girls (average age of 4 years) exposed to child maltreatment and another study (Cicchetti 2006²²) examined infant-parent psychotherapy (IPP) for infant boys/girls (average age of 13.31 months). Immediately post-treatment, we have very low certainty that PPP may enable a large increase in positive parent-child interaction (MD = 0.79, 95% CI, 0.35 to 1.23, P=0.0004). At 12-months follow-up, we have very low certainty that IPP shows no effect on internalizing symptoms (MD = 1.64, 95% CI, -3.52 to 6.80, P=0.53) or externalizing symptoms (MD = 1.05, 95% CI, -3.58 to 5.68, P=0.66). Overall, we have very low certainty that immediately post-treatment for boys/girls (average age of 4 years), PPP may enable a large increase in parent-child interaction; however, at 3-months follow-up, infant-parent psychotherapy for boys/girls (average age of 13.31 months) shows no effect on internalizing or externalizing symptoms.

Multi-family group therapy vs. traditional family therapy (1 study). One study (Meezan 1998³⁷) examined multi-family group therapy (MFGT) for children (ages 2-11) Immediately post-treatment, we have very low certainty that MFGT shows no effect on internalizing symptoms (MD = -0.45, 95% CI, -4.97 to 4.07, P=0.85), externalizing symptoms (MD = -0.66, 95% CI, -5.74 to 4.42, P=0.80), or depression (MD = 0.82, 95% CI, -2.01 to 3.65, P=0.57).

CBT vs. usual care (1 study). One study (Shirk 2014³⁸) examined CBT for adolescent boys/girls (average age of 15-16 years) exposed to sexual abuse, parental IPV, physical abuse, or emotional abuse. Note that this is the only study included that overlaps with the children's exposure to IPV guidance. Immediately post-treatment, we have very low certainty evidence that CBT may enable a small reduction in depression (MD = -4.33, 95% CI, -12.18 to 3.52, P=0.28).

Play therapy vs. control (1 study). One study (Reams 1994²⁰) examined play therapy vs. control for boys/girls (3.5-5 years) exposed to child maltreatment. Immediately post-treatment, we have very low certainty that play therapy has no effect on externalizing symptoms/behaviour problems (MD = 0.73, 95% CI, -5.69 to 7.15, P=0.82) or anxiety (MD = 0.32, 95% CI, -2.11 to 2.75, P=0.80). At 3-months follow-up, we have very low certainty that play therapy shows a small effect on externalizing symptoms (MD = -2.29, 95% CI, -8.71 to 4.13, P=0.48), but still has no effect on anxiety symptoms.

Summary: For children exposed to maltreatment, we have very low certainty that preschooler-parent psychotherapy (PPT) may enable a large positive increase in parent-child interaction (see Table 3). Aside from this finding, there is little evidence of effectiveness for psychotherapeutic interventions for children exposed to maltreatment.

8.2.2. Child physical abuse and neglect

Participant and study characteristics. Five RCTs addressed psychotherapeutic interventions for children exposed to physical abuse and neglect. Four of the studies were directed at children exposed to physical abuse only (Damra 2014⁴¹, Runyon 2010³⁹, Kolko 1996⁴⁰, Nicol 1988³¹) and one was directed at children exposed to physical abuse and neglect (LeSure-Lester 2002⁴²). Most of the included studies addressed a form of CBT, including CBT with a trauma focus (Damra 2014⁴¹), parent-child CBT (Runyon 2010³⁹), cognitive behavioural training (LeSure-Lester 2002⁴²), individual child or parent CBT (Kolko 1996⁴⁰). One of the included studies addressed play therapy (Nicol 1988³¹). Therapist training varied and included “experts” in counseling, masters trained counselors, social workers, and psychologists. Age ranges of children also varied with children ranging from infants to adolescents. Some studies focused on young people (ages 10 and up) (Damra 2014⁴¹, LeSure-Lester 2002⁴²) and some focusing on older and young children (ages 6-13) (Runyon 2010³⁹, Kolko 1996⁴⁰). The study by Nicol 1988 included infants and children up to age 14. For those studies that stated the sex of included children, two included only boys (Damra 2014⁴¹, LeSure-Lester 2002⁴²), one included mostly boys (Kolko 1996⁴⁰), and one included approximately 50% girls and boys (Runyon 2010³⁹). Four of the included studies took place in high-income settings, including the U.S. (Runyon 2010³⁹, Kolko 1996⁴⁰, LeSure-Lester 2002⁴²) and the UK (Nicol 1988³¹). One of the included studies (Damra 2014⁴¹) took place in an upper middle-income setting (Jordan).

Risk of bias. The complete risk of bias table can be found in Appendix IV. All studies did not state the use a low-risk method of sequence generation (e.g., random number table) or a low-risk method of allocation concealment (e.g., centralized telephone), so were unclear risk in these areas. It is challenging to blind participants/providers in psychosocial interventions, so all studies were unclear risk of bias for this category (i.e., authors were silent about blinding). Blinding of outcome assessment involves both the a) evaluators and b) the patients being blinded for assessment. Four of the studies (Kolko 1996⁴⁰, Damra 2014⁴¹, LeSure-Lester 2002⁴², and Nicol 1988³¹) were silent about whether blinding occurred for both patients and evaluators, making them unclear risk. One of the studies (Runyon 2010³⁹) explicitly stated that participants were told about their therapy, indicating clearly that blinding did not occur (making them high risk). Two of the studies (Runyon 2010³⁹, Nicol 1988³¹) were high risk of bias for incomplete outcomes, as there was no rationale offered for high rates of participant drop out. All five studies were low risk of bias for selective reporting. Overall, all five studies are unclear risk of bias.

GRADE assessments. Overall, the evidence can be considered “very low” quality and was downgraded for serious risk of bias and serious imprecision. Very low certainty evidence suggests that we have very little confidence in the effect estimate and that the true effect is likely to be substantially different from the estimate of effect. It is likely that further research could have an impact on the estimate of effect.

Outcomes.

Individual parent-child CBT vs. routine community services (1 study). One study (Kolko 1996⁴⁰) reported about individual child-parent CBT vs. routine community services for boys/girls (ages 6-13) exposed to physical abuse. We have very low certainty that immediately post-treatment, individual parent-child CBT may enable a reduction in internalizing symptoms (MD = -5.6, 95% CI, -12.79 to 1.59, P=0.13) and a small reduction in externalizing symptoms (MD = -3.3, 95% CI, -11.09 to 4.49, P=0.41); however, the control group (routine community services) shows a small but greater reduction in depression (MD = 2, 95% CI, -2.13 to 6.13, P=0.34) at this time point. We have very low certainty that 20% of people report maltreatment in routine services compared with 5% in the individual parent-child CBT group (for a difference of 15%). At 3-months follow-up, we have very low certainty that individual parent-child CBT may enable a large reduction in internalizing symptoms (MD = -10.3, 95% CI, -19.34 to -2.26, P=0.01), as well as a reduction in externalizing symptoms (MD = -5, 95% CI, -12.68 to 2.68, P=0.20); the control group (routine community services) shows a greater reduction in depression (MD = 2, 95% CI, -1.38 to 5.38, P=0.25) at this time point. At 12-months follow-up, we have very low certainty that individual parent-child CBT may enable a small reduction in internalizing (MD = -3.1, 95% CI, -10.57 to 4.37, P=0.42) and externalizing symptoms (MD = -4.1, 95% CI, -12.93 to 4.73, P = 0.36); the control group shows small but greater reductions in depression (MD = 1.3, 95% CI, -2.12 to 4.72, P = 0.46) at this time point. At 12-month follow-up, we have very low certainty that re-report rates (including substantiated reports) for the routine community services group were 250 per 1000 compared to 80 per 1000 for the individual child and parent CBT group (for a difference of 170).

Combined parent-child CBT vs. parent-only CBT (1 study). One study (Runyon 2010³⁹) reports about combined parent-child CBT vs. parent-only CBT for boys/girls (ages 7 to 13). We have very low certainty that immediately post-treatment, combined parent-child CBT may enable a large reduction in PTSD symptoms (MD = 1.25, 95% CI, -2.06 to -0.44, P=0.002); however, the control group (parent-only CBT) shows a small but greater reduction in internalizing symptoms (MD = 1.38, 95% CI, -1.35 to 4.11, P=0.32) and externalizing symptoms (MD = 3.27, 95% CI, -0.77 to 7.31, P=0.11) at this time point.

Play therapy vs. focused case work (1 study). One study (Nicol 1988³¹) reported about play therapy vs. focused case work for children (ages 0-14) exposed to physical abuse. Family interaction was assessed using the Family Interaction Coding System, where researchers code 29 clearly defined behavioral categories (prosocial and aggressive behaviours) in 6 second segments. Each family member is a “target” for a block of consecutive observations lasting 5 minutes. Immediately post-treatment, we have very low certainty that there is no effect on positive behaviours in either the play session group or the focused casework group, but that the focused casework significantly lessened coercive behaviours from before to after treatment ($p < 0.05$). These effects are only found when family members are looked at together; effects disappear when mothers, fathers, and children are examined separately.

CBT with a trauma focus vs. wait list (1 study). One study (Damra 2014⁴¹) reported about CBT with a trauma focus vs. wait list for adolescent boys (10-12 years) exposed to physical abuse. Immediately post-treatment, we have very low certainty that CBT with a trauma focus may enable a large reduction in PTSD symptoms (MD = -10.31, 95% CI, -11.29 to -9.33, $P < 0.00001$) and depression (MD = -16.1, 95% CI, -18.55 to -13.65, $P < 0.00001$). At 4-months follow-up, we have very low certainty that this large effect in PTSD and depression is still seen.

Family therapy vs. routine community services (1 study). One study (Kolko 1996⁴⁰) reported about family therapy vs. routine community services for boys/girls (6-13). We have very low certainty that immediately post-treatment family therapy shows no effect on internalizing or externalizing symptoms and that the control group (routine community services) shows a small but greater reduction in depression (MD = 1.8, 95% CI, -2.51 to 6.11, $P = 0.41$) at this time point. We have very low certainty that 20% of people report maltreatment in routine services compared with 6% in the individual parent-child CBT group (for a difference of 14%). At 3-month follow-up, we have very low certainty that family therapy may enable a reduction in internalizing symptoms (MD = -7.2, 95% CI, -15.17 to 0.77, $P = 0.08$) and no effect on externalizing symptoms; the control group also shows a greater reduction in depression (MD = 2.3, 95% CI, -1.42 to 6.02, $P = 0.47$) at this time point. At 12-months follow-up, family therapy may enable a reduction in externalizing symptoms (MD = -6.2, 95% CI, -14.9 to 2.5, $P = 0.16$), but no effect on internalizing symptoms; the control group shows a very small but greater reduction in depression at this time point. At 12-month follow-up, we have very low certainty that re-report rates (including substantiated reports) for the routine community services group were 250 per 1000 compare to 112 per 1000 for the family therapy group (for a difference of 138 per 1000).

Cognitive behavioural training vs. non-skilled/active listening (1 study). One study (LeSure-Lester 2002⁴²) reported about cognitive behavioural training vs. non-skilled/active listening for adolescent boys (12-16 years). Immediately post-treatment, we have very low certainty that cognitive behavioural training may enable a large reduction in externalizing symptoms (MD = -0.67, 95% CI, -1.06 to -0.28, P=0.0007).

Summary. For children exposed to physical abuse and neglect, we have very low certainty that some of the cognitive behavioural therapies (CBT) may reduce PTSD and depression at post-treatment and longest follow-up (see Table 3). For example, combined parent-child CBT shows large reductions in PTSD symptoms at post-treatment and CBT with a trauma focus (results for boys only) shows large reductions in PTSD symptoms and depression at post-treatment and 4-month follow-up. Cognitive behavioural training (results for boys only) may enable a large reduction in externalizing symptoms at post-treatment.

8.2.3. Child neglect

Participant and study characteristics. One study (Jacobsen 2014⁴³) which took place in Denmark reported Dyadic Music Therapy for children (ages 5-7) exposed to neglect.

Risk of bias. This study is overall ranked as unclear risk of bias, mainly because the study authors did not explicitly state the use a low-risk method of sequence generation (e.g., random number table), or a low-risk method of allocation concealment (e.g., centralized telephone). Jacobsen 2014⁴³ is high risk of bias for blinding of patients/providers, as one of the music therapists was also the researcher (and thus not blind to allocation).

GRADE assessment. Overall, this evidence can be considered “very low” quality, downgraded for serious risk of bias and very serious imprecision. Very low certainty evidence suggests that we have very little confidence in the effect estimate and that the true effect is likely to be substantially different from the estimate of effect. It is likely that further research could have an impact on the estimate of effect.

Outcomes.

Dyadic music therapy vs. treatment as usual (1 study). One study (Jacobsen 2014⁴³) assessed Dyadic music therapy vs. treatment as usual for girls/boys (ages 5-12 years) exposed to neglect. Immediately post-treatment, we have very low certainty that Dyadic music therapy may enable a small increase in positive parent behaviour/response (MD = 0.78, 95% CI, -1.44 to 3, P=0.49). However,

immediately post-treatment the control group (vs. Dyadic music therapy) shows a very small, but greater decrease in negative parent behaviour/response (MD = 0.34, 95% CI, -1.15 to 1.83, P=0.66). Overall, for girls boys (ages 5-12), we have very low certainty that immediately post-treatment Dyadic music therapy may increase positive parent behaviour/response; however, the control group's rate of decreasing negative parent behaviour/response was greater.

Summary of counseling/therapy interventions. For children exposed to maltreatment (usually physical abuse, neglect, emotional abuse), we have very low certainty that preschooler-parent psychotherapy (PPT) may enable a large positive increase in parent-child interaction. Aside from this finding, there is little evidence of effectiveness for counseling/therapy interventions for children exposed to maltreatment. For children exposed to physical abuse and neglect, we have very low certainty that individual parent and child cognitive behavioural therapy may enable small benefits in recurrence rates and may enable small reductions in internalizing and externalizing symptoms. Other than this finding, counseling/therapy interventions for children exposed to physical abuse and neglect show limited or mixed results.

Table 3. Summary of symptom change [large (L), medium (M), small (S), and no effect (N)] in counseling/therapy interventions for exposure child maltreatment at post-treatment (PT) or longest month (mo) follow-up

Note: We have very low certainty in all evidence

Note: We have very low certainty in all evidence

Counseling/therapy	N	Internalizing symptoms												Externalizing				Parent-child interaction				Recurrence			
		Internalizing				Depression				Anxiety				PTSD											
		N	S	M	L	N	S	M	L	N	S	M	L	N	S	M	L	N	S	M	L	N	S	M	L
Child maltreatment																									
PC vs. C (PT)	1108					x																			
IPP vs. CC (12-mo)	113	x													x										
MFGT vs. TFT	81																								
PPP vs. CC (PT)	53																							x	
CBT vs. UC (PT)	43						x																		
PT vs. C (PT)	41									x					x										
--PT vs. C (3-mo)	41									x						x									
Physical abuse & neglect																									
C-CBT vs. P-CBT (PT) *	44 D												x												
PT vs. FCW	38 F																								
I-CBT vs. RCS (PT) *	33				x			≠								x									
--I-CBT vs. RCS (12-mo) *	33			x				≠								x								x	
FT vs. RCT (PT) *	29		x													x									
--FT vs. RCS (12-mo) *	29		x															x							x
CBT-TF vs. WL (PT) ^B	18							x					x												
--CBT-TF vs. WL (4-mo) ^B	18							x					x												
CT vs. AL (PT) ^B	12																	x							
Neglect-specific																									
DMT vs. TAU*	19															≠				x/ ≠					
^G =Girls only; ^B =Boys only D=Dyads; F=Families																									

For child maltreatment therapies: PC=Project Chrysalis; C=Control; IPP=infant-parent psychotherapy; CC=community control; MFGT=multi-family group therapy; TFT=traditional family therapy; PPT=preschooler-parent psychotherapy; CBT=cognitive behavioural therapy; UC=usual care; PT=play therapy

For physical abuse and neglect therapies: C-CBT=combined parent-child CBT; PT=play therapy; FCW=focused case work; I-CBT= Individual child-parent cognitive behavioural therapy; RCS=routine community services; FT=family therapy; CBT-TF=cognitive behavioural therapy with a trauma focus; CT= cognitive behavioural training; AL=non-skilled/active listening group.

Note: For I-CBT vs. RCS (12-mo) the control group shows a small but greater reduction in depression symptoms at this time point. For C-CBT vs. P-CBT (PT), the control group shows a small but greater reduction in internalizing symptoms, externalizing symptoms. For FT vs. RCS (PT), the control group shows a small but greater reduction in depression. For FT vs. RCS (12-mo), the control group shows a very small but greater reduction in depression.

For neglect-specific therapies:

Note: For DMT vs. TAU the control group shows a very small but greater reduction in negative parent behaviour.

8.3. Parenting interventions, Clinic or community

8.3.1. Child maltreatment

Participant and study characteristics. Three studies (all RCTs) used parenting interventions delivered in a clinic or community setting to address exposure to child maltreatment (see Appendix III for study characteristics). Two studies examined parent-child interaction therapy (Thomas 2011⁴⁴, 2012⁴⁵) and one study addressed stress management (Egan 1983³³). Children in one of the studies were an average of 4-5 years old (Thomas 2011⁴⁴, 2012⁴⁵) and in the other study they were from 2 to 14 years of age (Egan 1983³³). Both studies took place in high-income countries, including the U.S. (Egan 1983³³) and Australia (Thomas 2011⁴⁴, 2012⁴⁵).

Risk of bias. The complete risk of bias table can be found in Appendix IV. The included studies did not state the use a low-risk method of sequence generation (e.g., random number table) or a low-risk method of allocation concealment (e.g., centralized telephone), so were unclear risk in these areas. It is challenging to blind participants/providers in psychosocial interventions, so both studies were unclear risk of bias for this category (i.e., authors were silent about blinding). Blinding of outcome assessment involves both the a) evaluators and b) the patients being blinded for assessment. Two of the studies (Thomas 2011⁴⁴, 2012⁴⁵) were silent about whether blinding occurred for both patients and evaluators, making them unclear risk. One of the studies (Thomas 2012⁴⁵) was high risk of bias for incomplete outcomes, as there was no rationale offered for high rates of participant drop out. Overall, all four studies are unclear risk of bias.

GRADE assessments. Information about parent child interaction therapy was pooled across maltreatment types (child maltreatment & physical abuse/neglect) for evidence about externalizing and internalizing symptoms. This evidence can be considered “moderate”, as it was only downgraded for serious risk of bias. Moderate quality evidence means that we are moderately confident in the effect estimate and the true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different. Otherwise the evidence was “low” quality, downgraded for serious risk of bias and imprecision or “very low” quality, downgraded for serious risk of bias and very serious imprecision. Low certainty evidence suggests that our confidence in the effect estimate is limited and the true effect may be substantially different from the estimate of the effect and very low certainty

evidence suggests that we have very little confidence in the effect estimate and that the true effect is likely to be substantially different from the estimate of effect. It is likely that further research could have an impact on the estimate of effect.

Outcomes & Summary.

Parent child interaction therapy (3 studies). Three studies reported on parent-child interaction therapy (vs. control) for boys/girls (average age of 5 years) exposed to child maltreatment (Thomas 2011⁴⁴, 2012⁴⁵) or parent-child interaction therapy (vs. standard community-based parenting group) for children exposed to physical or for children (2.5-12 years) exposed to physical abuse and neglect (Chaffin 2004⁴⁶). Only the pooled results for Chaffin 2004⁴⁶ are discussed here; other results are discussed below. Immediately post-treatment, we have moderate confidence that parent-child interaction therapy enables a small reduction in internalizing symptoms (SMD = -0.32, 95% CI, -0.55 to -0.09, P=0.003) and a small reduction in externalizing symptoms (SMD = -0.47, 95% CI, -0.70 to -0.24, P=0.0001). For parent-child interaction, these studies used the Dyadic Parent–Child Interaction Coding System Revised (DPICS-R) where researchers can observe and code up to 24 parent or child behaviors. Observation coding is continuous and results in the total frequency of each behavior per 5-minute interval. In this study positive behaviours include praise and reflections and negative behaviours include commands and questions. For children exposed to child maltreatment immediately post-treatment, we have low certainty that parent-child interaction therapy may enable a large increase in caregivers' praising behaviour (MD = 9.19, 95% CI, 7.05 to 11.34, P=0.00001), caregivers' positive reflective behaviour (MD = 14.35, 95% CI, 10.75 to 17.96, P=0.00001), as well as a reduction in caregivers' use of commands (MD = -3.6, 95% CI, -1.83 to -5.38, P=0.0001) and a large reduction in caregivers' use of questions (MD = -18.49, -16.04 to -20.94, P=0.00001). Overall, we have moderate certainty that for boys/girls (ages 2-12) that immediately post-treatment parent-child interaction therapy reduces internalizing and externalizing symptoms and children exposed to child maltreatment or physical abuse/neglect. We have low certainty that for boys/girls (average age of 5) immediately post-treatment parent-child interaction therapy may enable an increase in caregivers' praising and positive reflective behaviour and reduce caregivers' use of commands and questions (negative parenting behaviour) in children exposed to maltreatment.

Stress management vs. treatment as usual (1 study). One study (Egan 1983³³) assessed stress management, child management, or stress/child management vs. treatment as usual for children (ages 2-14 years). For this study, no measure of variance (standard deviation or standard error) was reported

for any outcomes of interest, hence results are being reported narratively. Child state-trait anxiety was measured using the State-Trait Anxiety Inventory and caregiver-child interaction was measured through observations of caregiver-child behaviour, which was coded for a) positive verbal responses, such as praise; b) negative verbal responses, such as attacks and commands; c) positive action responses, such as parental/child positive affect; and d) negative action responses, such as severe negative discipline, or punitive restraint. For the stress management group vs. treatment as usual at post-treatment, this study reported benefit favoring intervention group for parental positive affect (post-treatment mean 5.63 vs. 3.84; $p < 0.05$), verbal command (post-treatment mean 9.85 vs. 7.98; $p < 0.05$), child positive affect (post-treatment mean 4.81 vs. 3.37; $p < 0.01$) and positive verbal response (post-treatment mean 0.41 vs. 0.29; $p < 0.05$). For the child management group vs. treatment as usual, at post-treatment this study reported benefit favouring the intervention group for child positive affect (post-treatment mean 2.12 vs. 2.97; $p < 0.001$) and comply followed by positive verbal responses (post-treatment mean 1.69 vs. 1.40; $p < 0.05$). No benefit to state-trait anxiety was reported by either group.

8.3.2. Child physical abuse and neglect

Participant and study characteristics. Two studies (both RCTs) used a parent-child interaction therapy to address physical abuse only (Chaffin 2004⁴⁶) or physical abuse and neglect (Chaffin 2009⁴⁷) (see Appendix III for study characteristics). Both studies were delivered by master's level therapists. Sex of included children was not stated in either study; the age range of children ranged from 4 to 12 years in the other study (Chaffin 2004⁴⁶) and 2.5 to 12 years in the other study (Chaffin 2009⁴⁷). Both studies took place in the U.S.

Risk of bias. Overall, the two included studies were unclear risk of bias, mainly because the study authors did not explicitly state the use a low-risk method of sequence generation (e.g., random number table), or a low-risk method of allocation concealment (e.g., centralized telephone).

GRADE assessments. As stated above, this evidence can be considered "moderate", as it was only downgraded for serious risk of bias.

Outcomes & Summary.

Parent child interaction therapy vs. standard of care (1 study). One study (Chaffin 2004⁴⁶) examined parent-child interaction therapy or enhanced parent-child interaction therapy (where caregivers received standard parent-child interaction therapy plus attention to services targeting parental depression, substance use, or family conflict/violence) vs. standard community-based

parenting group) for children (4-12 years) exposed to physical abuse. For both arms of this study they measured parent-child interaction using the DPICS-R (discussed above); however, they reported overall positive parent behaviour and overall negative parent behaviour. **Standard parent-child interaction therapy:** Immediately post-treatment, we have very low certainty evidence that standard parent-child interaction therapy may enable a small increase in positive parent behaviour (MD = 18, 95% CI, -10.34 to 46.34, P=0.21) and a large reduction in negative parent behaviour (MD = -18, 95% CI, -10.53 to -25.47, P=0.00001). As discussed above, we have moderate confidence that standard parent-child interaction therapy enables a small reduction in internalizing symptoms and a small reduction in externalizing symptoms. At a mean of 850 days (just under 2 years), we have very low certainty that children in the standard community care group had re-report rates of 486 per 1000 compared to 191 per 1000 in the parent-child interaction therapy group (for a difference of 295). At a mean of 850 days, we have very low certainty that children in the enhanced parent-child interaction therapy group had a re-report rate of 486 per 1000 compared to 366 per 1000 (for a difference of 120 per 1000). **Enhanced parent-child interaction therapy.** Immediately post-treatment, we have very low certainty evidence that enhanced parent-child interaction therapy may enable a small reduction in internalizing symptoms (MD = -6.6, 95% CI, -0.11 to -13.09, P=0.05), no effect on externalizing symptoms (MD = -0.8, 95% CI, -4.74 to 3.14, P=0.69), as well as a small increase in positive parent behaviour (MD = 9.15, 95% CI, -9.15 to 59.15, P=0.15) and a large decrease in negative parent behaviour (MD= -16, 95% CI, -8.3 to -23.7, P=0.001). Overall, we have very low certainty that for children (ages 2.5-12 years) immediately post-treatment, standard parent-child interaction therapy may reduce internalizing symptoms, externalizing symptoms, and negative behaviour, and may increase positive parent behaviour. We have very low certainty evidence that immediately post-treatment enhanced parent-child interaction therapy may reduce internalizing symptoms (but not externalizing symptoms) and negative parent behaviour, as well as increase positive parent behaviour.

Parent child interaction with or without motivational orientation vs. standard didactic parenting intervention with or without motivational orientation (1 study). One study (Chaffin 2009⁴⁷) compared parent-child interaction therapy with or without a motivational orientation (loosely based on motivational interviewing) to standard didactic parenting intervention with or without motivational interviewing for children (2.5 to 12 years) exposed to physical abuse or neglect.

8.3.3. Child neglect

Participants and study characteristics. One study (an RCT) addressed a multi-component intervention – Families Actively Improving Relationships (Saldana 2015⁴⁸) (see Appendix IV for study details). This intervention was carried out in the U.S. by counselors, skills coaches, and resources builders (education level not stated).

Risk of bias. Overall, this study was unclear risk of bias, mainly because the study authors did not explicitly state the use a low-risk method of sequence generation (e.g., random number table), or a low-risk method of allocation concealment (e.g., centralized telephone). This study is rated as high risk of bias for incomplete outcome data, as dropout rates were higher than 10% with no rationale and intention to treat analysis was not stated.

GRADE assessments. Overall, this study can be considered to be “very low” certainty and was downgraded for serious risk of bias and serious imprecision. Very low certainty evidence suggests that we have very little confidence in the effect estimate and that the true effect is likely to be substantially different from the estimate of effect. It is likely that further research could have an impact on the estimate of effect.

Outcomes & Summary.

Families Actively Improving Relationships Program (FAIR) vs. treatment as usual (1 study).

One study (Saldana 2015⁴⁸) reported on FAIR vs. treatment as usual (children sex/gender not specified). Immediately post-treatment and at 6-month follow-up, we have very low certainty that FAIR may enable a large reduction in externalizing symptoms (MD 6-month = -8.56, 95% CI, -15.81 to -1.31, P=0.01).

Summary of parenting interventions delivered in a clinic or community setting. We have very limited evidence in the effectiveness of parenting interventions delivered in a clinic- or community setting, with the exception of parent-child interaction therapy for physical abuse and neglect (see Table 4). For parent-child interaction therapy, we have moderate certainty evidence that it enables small benefits to internalizing and externalizing symptoms at post-treatment, and low certainty evidence that it enables small reductions in recurrence rates and small to large increases in positive parent-child interaction.

Table 4. Summary of symptom change [large (L), medium (M), small (S), and no effect (N)] in parenting interventions delivered in a clinic or community setting for exposure child maltreatment at post-treatment (PT) or longest month (mo) follow-up

Note: We have very low certainty in all evidence except evidence for PCIT (internalizing and externalizing symptoms), which is moderate certainty*

Parenting, Clinic or Community	N	Internalizing symptoms												Externalizing				Parent-child interaction				Recurrence				
		Internalizing				Depression				Anxiety				PTSD												
		N	S	M	L	N	S	M	L	N	S	M	L	N	S	M	L	N	S	M	L	N	S	M	L	
Child maltreatment																										
PCIT vs. C (PT)				X											X					X	X	X			X	
SM vs TAU †																			X							
Physical abuse & neglect																										
E-PCIT vs. C (PT)				X											X					X			X			
Neglect																										
FAIR vs. TAU (PT)																					X					
• FAIR vs. TAU (6-mo)																					X					
*PCIT is moderate certainty evidence for internalizing and externalizing symptoms, † Note that SM vs. TAU did not provide information that could be put into the GRADE tables. Refer to the report for more details.																										

8.4. Parenting interventions, Home-based

8.4.1. Child maltreatment

Participant and study characteristics. Six studies (RCTs) used home visiting interventions for children exposed to child maltreatment (see Appendix III for study characteristics). A variety of interventions were used, including SafeCare (Chaffin 2012²⁹), Promoting First Relationships (Spieker 2012²⁵), was attachment oriented home visits (Moss 2011⁴⁹), psychoeducational home visiting (Toth 2002¹⁹), psychoeducational parenting intervention (Cicchetti 2006²²), and multisystemic therapy (Brunk 1987³⁰). When stated, interventions were delivered by individuals with bachelor's and master's level or master's level training. Children in this group tended to be younger, either infants or toddlers (Spieker 2012²⁵, Toth 2002¹⁹, Cicchetti 2006²²) or preschoolers (Chaffin 2012²⁹). Only one study looked at school aged children (average age of 6.8 or 9.8 years, Brunk 1987³⁰). All studies took place in high-income countries, including the U.S. (Chaffin 2012²⁹, Spieker 2012²⁵, Toth 2002¹⁹, Cicchetti 2006²², Brunk 1987³⁰) and Canada (Moss 2011⁴⁹)

Risk of bias. Overall, all of the studies were unclear risk of bias, mainly because the one study did not state the use of a low risk method of allocation concealment (e.g., centralized telephone) and all three studies did not explicitly state the use a low-risk method of sequence generation (e.g., random number table). One study (Toth 2002¹⁹) was high risk of bias for incomplete outcome data as dropout rates were higher than 10% with no rationale and intention to treat analysis was not stated. One study (Brunk 1987³⁰) was rated as high risk of bias for selective reporting, as the study authors indicate that the Behavior Problem Checklist was used to measure child behaviour, but results are not reported. This study (Brunk 1987³⁰) was also rated as high risk for "other" bias, as significant baseline differences between groups were found for child and parent age.

GRADE assessments. Overall, except for SafeCare, which is ranked as moderate risk of bias, this evidence can be considered to be "very low" certainty and was downgraded for serious risk of bias and very serious imprecision. Very low certainty evidence suggests that we have very little confidence in the effect estimate and the true effect is likely to be substantially different from the estimate of effect. It is likely that further research could have an impact on the estimate of effect.

Outcomes & Summary.

Safe Care vs. services as usual (1 study). One study (Chaffin 2012²⁹) investigated Safe Care vs. home-based services as usual. At 12-month follow-up (mean of 6 years assessed), we have moderate certainty that the services as usual group will experience recidivism at a rate of 450 per 1000 compared to 391 per 1000 in the SafeCare group (for a difference of 59 per 1000).

Promoting First Relationships vs. early education support (1 study). One study (Spieker 2012²⁵) reported on Promoting First Relationships vs. early education support for girls/boys (ages 10-24 months). Immediately post-treatment, we have very low certainty that Promoting First Relationships enables an increase in sensitivity in parent-child interaction (MD = 1.49, 95% CI, 0.67-2.31, P=0.0004). At 6-months, we have very low certainty that Promoting First Relationships shows a small increase in sensitivity in parent-child interaction (MD = 0.87, 95% CI, -0.03 to 1.77, P=0.06). Immediately post-treatment, we have very low certainty that Promoting First Relationships shows no effect on supportive parent-child interactions (MD = -0.06, 95% CI, -0.15 to 0.03, P=0.21). At 6-months, we have very low certainty that Promoting First Relationships shows no effect on internalizing (MD = -0.06, 95% CI, -2.04 to 1.72, P=0.87) or externalizing symptoms (MD = -1.07, 95% CI, -4 to 1.86, P=0.47) and no effect on supportive parent-child interactions. Note that for internalizing symptoms at 6-month follow-up, only post-treatment values are offered (i.e., no baseline values). Overall, we have very low certainty that Promoting First Relationships may increase maternal sensitivity at post-treatment and 6-month follow-up.

Attachment oriented home visits vs. standard care (1 study). One study (Moss 2011⁴⁹) reported on attachment oriented home visits for girls/boys (ages 1-6). We have very low certainty in this evidence due to serious concerns for risk of bias and very serious concerns for imprecision. Immediately post-treatment, we have very low certainty that attachment-oriented home visits enable a small reduction in internalizing symptoms (MD = -3.06, 95% CI, range -6.46 to 0.34, P=0.08) and an increase to maternal sensitivity in parent-child interaction (MD = 0.19, 95% CI, range 0.04 to 0.34, P=0.01). Immediately post-treatment, the control group (vs attachment oriented home visiting group) showed a very small reduction of externalizing symptoms (MD= 1.57, 95% CI, range -2.2 to 5.34, P=0.41). Overall, we have very low certainty that attachment oriented home visits may reduce internalizing symptoms and increase maternal sensitivity post-treatment.

Psychoeducational home visits vs. community control (1 study). One study (Toth 2002¹⁹) reported on psychoeducational home visits vs. community control for boys/girls (average age of 4 years). Immediately post-treatment, we have very low certainty evidence that the community control

group (vs. the psychoeducational home visits group) showed a small increase in relationship expectation (parent-child interaction measure) (MD = -0.25, 95% CI, -0.67 to 0.17, P=0.25). Overall, psychoeducational home visits show no benefit at post-treatment.

Psychoeducational parenting intervention vs. community control (1 study). One study (Cicchetti 2006²²) examined psychoeducational parenting intervention vs. community control for children (average age of 13.31 months) exposed to child maltreatment. Overall, we have very low certainty that psychoeducational parenting intervention shows no effect on internalizing symptoms or externalizing symptoms at 12-month follow-up.

Multi-systemic therapy vs. parent training (1 study). One study (Brunk 1987³⁰) reported on multisystemic therapy vs. parent training for boys/girls (average age of 6.8 to 9.8 years) exposed to child maltreatment. The authors assessed child behaviour problems using the Behavior Project Checklist, 55-item (three point scale) used by parents to report of child behaviour problems. Parent-child interaction was assessed through Schaffer and Crook's parent-child interaction system. This system "yields three-part sequences (antecedent child behavior – parent control – consequent child behavior) of parent-child interaction". The sequential behaviours were assessed and reported as parental effectiveness in attention (e.g., child is looking away; parent asks child to look at the blocks; child complies) or action (e.g., child is looking at blocks; parent indicates the child should copy the picture; child attempts to do so), or parental unresponsiveness (e.g., child is looking at the picture and the parent says "look at this picture", i.e., parent is not sensitive to the child's involvement state and attempts to gain the child's attention toward an object that she/he is already attending to). The findings from this study are split with some benefits in parent-child interaction resulting from multisystemic therapy and some benefits resulting from parent training. The authors report that there were significant differences in multisystemic therapy vs. parental training for parental attention ($p < 0.29$). Post hoc tests indicated that for one aspect of parental attention (Not oriented – Verbal attention – Oriented), multisystemic therapy offered significant benefits in neglectful families (mean MST vs. PT = 17 vs. -14.4) and parent training offered significant benefits for abusive families (mean PT vs. MST = 13.8 vs. 2.3). For another aspect of improvements in parental attention (Contact – Nonverbal attention – Oriented), multisystemic therapy showed improvements for both abusive (mean MST vs. PT, 1.7 vs. -3.5) and neglectful (mean MST vs. PT: 20 vs. -2.1) families. Both neglectful and abusive families showed improvement in a final aspect of parental attention (Not oriented – Verbal Attention – Oriented). Significant differences were found for aspects of parental action, including Oriented – Verbal action – Task completed ($p < 0.032$), Contact –

Verbal action – Task completed ($P<0.033$), and Contact – Nonverbal action – Task completed ($p<0.001$), with post hoc tests showing significant worsening for multisystemic therapy participants for Oriented – Verbal action – Task completed and significant improvements in parental actions for both a) Contact – Verbal action – Task completed and b) Contact – Nonverbal action – Task completed. For parental unresponsiveness, multisystemic therapy enabled a significant ($p<0.010$) reduction in one aspect of parental unresponsiveness (Oriented – Verbal attention – Oriented) for both abusive (mean MST vs. PT: -23.4 vs. -7.9) and neglectful (mean MST vs. PT: -52.7 vs. 20.1) families. All groups had a significant increase in Oriented – Verbal attention – Task completed, indicating a positive response to both therapies. Overall, benefits across multisystemic therapy and parent training are split.

Table 5. Parent-child interaction pre- to post-treatment means and mean difference (MD) across parent training and multisystemic therapy as reported in Brunk 1987.				
Yellow = significant improvement				
Red = significant worsening				
	Abusive families		Neglectful families	
	Multisystemic therapy	Parent training	Multisystemic therapy	Parent training
Parental effectiveness (attention):				
Not oriented – Verbal attention – Oriented (Higher scores are better.)	2.3 (2.3-0.0)	13.8 (17.1-3.3)	17 (17.5-0.5)	-13.4 (4.7-18.1)
Contact – Nonverbal attention – Oriented (Higher scores are better.)	1.7 (6.4-4.7)	-3.5 (6.9-10.4)	20 (22.4-2.4)	-2.1 (8.4-10.5)
Not oriented – Verbal Attention – Oriented (Higher scores are better.)	9.4 (9.4-0.0)	4.1 (5.9-1.8)	30.1 (30.1-0.0)	2.2 (2.8-0.6)
Parental effectiveness (action):				
Oriented – Verbal action – Task completed (Higher scores are better.)	17.8 (19.7-37.5)	1.4 (27.4-26.0)	19.9 (8.1-28.0)	3.7 (21.8-18.1)
Contact – Verbal action – Task completed (Higher scores are better.)	18.6 (37.8-19.2)	3.8 (24.9-21.1)	27.7 (48.8-22.1)	-8.7 (25.5-34.2)
Contact – Nonverbal action – Task completed (Higher scores are better.)	31.1 (35.8-4.7)	-7.7 (8.3-16.0)	30.7 (30.7-0.0)	-13.8 (9.0-22.8)
Parental unresponsiveness:				
Oriented – Verbal attention – Oriented (Lower scores are better.)	-23.4 (8.4-31.8)	-7.9 (24.7-32.6)	-52.7 (5.8-58.5)	20.1 (38.8-18.7)
Oriented – Nonverbal attention – Oriented (Lower scores are better.)	-20.6 (3.5-24.1)	-24.5 (10.7-35.2)	-19.5 (1.0-20.5)	24.1 (37.5-13.4)
Oriented – Verbal attention – Task completed	23.7 (27.1-3.4)	0.7 (9.8-9.1)	3.4 (5.2-1.8)	8.3 (14.7-6.4)

(Higher scores are better.)				

8.4.2. Child physical abuse and neglect

Participants and study characteristics. Four studies (all RCTs) addressed parenting interventions delivered in a home setting for children exposed to physical abuse and neglect, including a home-visiting study using public health nurses (MacMillan 2005¹⁷), multisystemic therapy (Swenson 2010²⁸), Project Support (Jouriles 2010⁵⁰) and Internet-based Interacting Together Everyday: Recovery after Childhood TBI (inTERACT) (Mast 2014⁵¹) (see Appendix III for study characteristics). Aside from the study about multisystemic therapy (Swenson 2010²⁸), which addressed older children (ages 10-17 years), children in these studies tended to be preschoolers and school aged children (MacMillan 2005¹⁷, Jouriles 2010⁵⁰, Mast 2014⁵¹). All studies took place in high-income countries, including the U.S. (Swenson 2010²⁸, Jouriles 2010⁵⁰, Mast 2014⁵¹) and Canada (MacMillan 2005¹⁷).

Risk of bias. One study (MacMillan 2005¹⁷) was considered to be low risk of bias because no categories were rated as high risk of bias and the sequence generation and allocation concealment categories were rated low risk of bias. All other studies were considered to be unclear risk of bias. One study (Swenson 2010²⁸) was rated as unclear risk of bias due to high risk of bias for blinding of patients/providers, because the authors explicitly state that the participants were not blinded to the intervention. One study (Jouriles 2010⁵⁰) was rated as a high risk of bias for blinding of participant/providers and blinding of outcomes, as the authors explicitly stated that mothers were informed of their treatment condition and staff were not blinded.

GRADE assessments. One study (MacMillan 2005¹⁷) was ranked as low certainty evidence for very serious imprecision. Low certainty evidence suggests that our confidence in the effect estimate is limited and the true effect may be substantially different from the estimate of the effect. The other three studies (Swenson 2010²⁸, Jouriles 2010⁵⁰, Mast 2014⁵¹) were ranked as very low certainty evidence.

Outcomes.

Home visiting by public health nurse (vs. standard care). One study (MacMillan 2005¹⁷) reported home visiting by a public health nurse vs. standard care for girls/boys (average age of 5 years). Immediately post-treatment, we have low certainty evidence that home visiting by a public health nurse enables a small increase in positive parent-child interaction (MD = 4.2, 95% CI, 1.05 to 7.35, P=0.009)

and no effect on externalizing symptoms in males (MD = 01.5, 95% CI, -5.57 to 2.57, P=0.47). Immediately post-treatment, the standard care group (vs. the home visiting by a public health nurse) showed a reduction in externalizing symptoms for girls (MD = 4.8, 95% CI, 0.92 to 8.68, P=0.02) and anxiety symptoms for girls (MD = 1.9, 95% CI, 0.29 to 3.51, P=0.02), a small reduction in anxiety symptoms for boys (MD = 1, 95% CI, -0.76 to 2.76, P=0.26). At 12-months follow-up, there is still a positive increase in parent-child interaction (MD = 5.2, 95% CI, 1.74 to 8.66, P=0.003), as well as a reduction in externalizing symptoms in boys (MD = -4.4, 95% CI, -8.42 to -0.38, P=0.03). At 12-months follow-up, the standard care group (vs. the home visiting by a public health nurse) showed a small reduction in externalizing symptoms for girls (MD = 2.9, 95% CI, -0.84 to 6.64, P=0.13), a large reduction in anxiety symptoms for girls (MD = 2.4, 95% CI, 0.80 to 4.0, P=0.003), as well as no effect on anxiety symptoms in boys. At 12-month follow up, we have low certainty that children in the standard care group will experience re-reports of physical abuse at a rate of 431 per 1000 compared to 330 per 1000 for children receiving home visits from a public health nurse (for a difference of 101 per 1000). At 12-month follow-up we have low certainty that children in the standard care group will experience re-reports of neglect at a rate of 514 per 1000 compared to 467 per 1000 for children receiving home visits from a public health nurses (for a difference of 47 per 1000).

Multisystemic therapy vs. enhanced outpatient treatment (1 study). One study (Swenson 2010²⁸) reported about multisystemic therapy vs. enhanced outpatient treatment for adolescent boys/girls (10-17 years). For this study we report the calculated mean differences and measure of variance (standard error) reported by study, as no baseline or post-treatment data is provided by the study. As such, we were not able to calculate SMD values to interpret the size of the effect. Immediately post-treatment, we have very low certainty that multisystemic therapy may enable a reduction in internalizing symptoms (MD = -2.13, 95% CI, -3.99 to -0.27, P=0.02) and PTSD symptoms (MD = -1.43, 95% CI, -2.8 to -0.06, P= 0.04), but small or no effect on externalizing symptoms (MD = -0.75, 95% CI, -3.63 to 2.13, P=0.61), anxiety (MD = -0.13, 95% CI, -0.35 to 0.09, P=0.24), and depression (MD = -0.03, 95% CI, -0.27 to 0.21, P=0.80).²¹ We have very low certainty that immediately post-treatment 21.4% of the control group compared with 9.2% of the multisystemic therapy group had PTSD diagnoses (for a difference of 12.2%). At 16-month follow up, we have very low certainty that the

²¹ Swenson 2010²⁸ report changes as follows: “A main effect for time (slope) was found for youth-reported PTSD and depressive symptoms and parent-reported social skills, indicating overall improvement in these areas across conditions. However, the improvement in youth-reported PTSD symptoms was significantly greater for MST-CAN [multisystemic therapy] youth. Further, MST-CAN, but not EOT youth, showed significant decreases in parent-reported internalizing, PTSD, and total symptoms, and youth reported dissociative symptoms.

enhanced outpatient treatment group had reabuse rates of 119 per 1000 compared to the 45 per 1000 in the multisystemic therapy group (for a difference of 74 per 1000).

Project Support vs. treatment as usual (1 study). One study (Jouriles 2010⁵⁰) reported about Project Support for children (ages 3-8 years). At 20 months follow-up, we have very low certainty that re-report rates of maltreatment in the treatment as usual group were 278 per 1000 compared to 58 per 1000 in the Project Support intervention (for a difference of 20 per 1000).

Internet-based Interacting Intervention (InTERACT) vs. internet resources (1 study). One study (Mast 2014⁵¹) examined InTERACT vs. internet resources comparison for children (ages 3-9 years). Caregiver-child interaction was measure through the DPICS, discussed above. At 2-months follow-up, we have very low certainty that InTERACT may enable a large increase in caregiver praise (MD = 4.5, 95% CI, 2.16 to 6.84, P=0.0002), an increase in positive caregiver reflections (MD = 3, 95% CI, -1.81 to 7.81, P=0.22), a reduction in caregiver commands (MD = 6.42, 95% CI, -8.28 to 21.12, P=0.39), and a small reduction in caregiver questions (MD = -5.58, 95% CI, -36.19 to 25.03, P=0.72). However, at 2-months follow-up, we have very low certainty that the control group (vs. InTERACT) may find a small, but greater reduction in internalizing symptoms (MD = 2.45, 95% CI, -5.14 to 10.04, P=0.53) and externalizing symptoms (MD = 2.7, 95% CI, -6.2 to 11.6, P=0.55). Overall, for children (ages 3-9 years), we have very low certainty that at 2-months follow-up, InTERACT may increase caregiver praise and positive caregiver reflections, as well as decrease caregiver commands and caregiver questions. However, the control group had a more significant reduction in internalizing and externalizing symptoms.

8.4.3. Child neglect

Participant and study characteristics. One study (Bernard 2015³⁴) reported about a parenting intervention for children exposed to neglect, specifically an Attachment and Biobehavioral Catchup (ABC) intervention for children ages 4 to 6 (see Appendix III for study details). The ABC intervention was carried out by trained parent coaches and took place in the U.S.

Risk of bias. This study is overall ranked as unclear risk of bias, mainly because the study authors did not explicitly state the use a low-risk method of sequence generation (e.g., random number table), or a low-risk method of allocation concealment (e.g., centralized telephone).

GRADE assessments. Overall, this evidence can be considered “very low” quality, downgraded for serious risk of bias and very serious imprecision. Very low certainty evidence suggests that we have very little confidence in the effect estimate and that the true effect is likely to be substantially different

from the estimate of effect. It is likely that further research could have an impact on the estimate of effect.

Outcomes & Summary.

Attachment and Biobehavioral Catch-up vs. development education for families (1 study). One study (Bernard 2015³⁴) assessed Attachment and Biobehavioral Catch-up vs. development education for families for boys/girls (average age of 4-6) exposed to neglect. The authors did not report means or variance for findings, so they will be summarized narratively. The authors assessed maternal sensitivity through the Observational Ratings of the Caregiver Environment, where scores for sensitivity can range from 1.0 to 5.0 and are determined by coding videotaped play interactions. While the authors are unclear about the exact follow-up date, initial data collection began in January 2006 and assessments for this study were done between November 2011 and June 2012; this indicates that the study is approximately a 5-year follow-up. At baseline, the authors report that there “were no differences in observed maternal sensitivity between mothers” ($p = 0.98$). At 5-year follow-up, significant differences in maternal sensitivity were found ($p < 0.001$) and specifically mothers in the development education for families group scored significantly lower than mothers in the Attachment and Biobehavioral Catch-up group ($p < 0.001$).

Summary of parenting interventions delivered in a home setting. For parenting interventions delivered in a home setting, we have moderate certainty evidence that SafeCare enables small reductions in recurrence rates for preschool children exposed to maltreatment, low certainty evidence that home visiting with a public health nurse may enable small reductions in recurrence rates for children (average age of 5 years) exposed to physical abuse and neglect and very low certainty evidence that multisystemic therapy may enable small reductions in recurrence for children (ages 10-17) exposed to physical abuse, and that Project Support may enable small reductions in recurrence rates for children (ages 3-8) exposed to physical abuse and neglect (see Table 6). Other than this, evidence for the effectiveness of parenting interventions delivered in a home setting for children exposed to maltreatment is limited and conflicting, showing limited benefits especially for mental health symptoms. We have very low certainty that some interventions (e.g., promoting first relationships, attachment-oriented home visits) may enable moderate benefits to certain aspects of parent-child interaction and that multi-systemic therapy may enable small reductions in internalizing symptoms and PTSD symptoms (but not depression or anxiety symptoms).

Table 6. Summary of symptom change [large (L), medium (M), small (S), and no effect (N)] in parenting interventions delivered in a home setting for exposure child maltreatment at post-treatment (PT) or longest month (mo) follow-up

Note: We have very low certainty in all evidence

Note: We have very low certainty in all evidence																									
Parenting, Home-based	N	Internalizing symptoms												Externalizing				Parent-child interaction				Recurrence			
		Internalizing				Depression				Anxiety				PTSD											
		N	S	M	L	N	S	M	L	N	S	M	L	N	S	M	L	N	S	M	L	N	S	M	L
Child maltreatment																									
SC/C vs. SAU/UC (6-yr)	2175																							X	
SC/UC vs. SAU/UC (6-yr)	2175																							X	
SAU/C vs. SAU/UC (6-yr)	2175																							X	
PFR vs. EES (PT)	210 D																	X			X				
--PFR vs. EES (6-mo)	210 D	X												X				X	X						
AOHV vs. SC (PT)*	89			X										≠						X					
PEHV vs. CC (PT)*	64																		≠						
PEPI vs. CC (12-mo)	53	X												X											
MST vs. PT (PT)	43																		X						
Physical abuse & neglect																									
HPHN vs. SC (PT)* ^G	163									≠							≠								
HPHN vs. SC (PT)* ^B	163									≠				X											
--HPHN vs. SC (12-mo)* ^G	163												≠										X		
--HPHN vs. SC (12-mo)* ^B	163								X							X							X		
MST vs. EOT (PT)	86			X			X		X				X												
--MST vs. EOT (10-mo)	86																							X	
PS	35																							X	
I-InT vs. IRC (2-mo)*	9			≠														≠		X	≠	X			
Neglect																									
ABC vs. DEF †	40																	≠			X				

B=Boys only; G=Girls only

D=Dyads

†Note that ABC vs. DEF did not provide information that could be put into the GRADE tables. Refer to the report for more details.

SC=SafeCare; C=Coached; SAU=Services as usual; UC=uncoached; PRF=Promoting First Relationships; EES=Early education support; AOHV=Attachment oriented home visits; SC=Standard care; PEHV=Psychoeducational home visits; CC=Community control; PEPI=Psychoeducational parenting intervention; MST=multi-systemic therapy; PT=play therapy; HPHN=Home visits with a public health nurse; SC=Standard care; EOT=Enhanced outpatient treatment;

PS=Project Support; I-InT= Internet-based interacting together intervention; IRC=Internet Resource Comparison; ABC=Attachment & biobehavioral catch-up; DEF=Development education for families

For child maltreatment interventions:

Note: AOHV vs. SC (PT), the control group shows a small but greater reduction in externalizing symptoms. For PEHV vs. CC (PT)*, the control group shows a small but greater increase in positive parent-child interaction

For physical abuse & neglect interventions:

Note: For HVPHN vs. SC (PT), the control group shows a greater reduction in girls' externalizing symptoms, a greater reduction in girls'/boys' anxiety. For HVPHN vs. SC (12-mo)*, the control group shows a greater reduction in girls' externalizing symptoms and anxiety symptoms. For InTERACT vs. IRC (2-mo)* the control group shows a small but greater reduction in internalizing and externalizing symptoms and a greater reduction in negative parental commands.

8.5. Child-focused skills development

8.5.1. Child physical abuse and neglect

Participants and study characteristics. Two studies (both RCTs) address child-focused skills development for children ranging from 3 to 5 years of age (Fantuzzo 1988⁵², 1996²³) (see Appendix III for study characteristics). One of the studies used parent volunteers to support play between children (Fantuzzo 1996²³) and the other use peer-initiated or teacher's aide-initiated play between children (Fantuzzo 1988⁵²). Both studies took place in the U.S.

Risk of bias. Overall, the two included studies (Fantuzzo 1988⁵², 1996²³) were rated as unclear risk of bias, mainly because the studies did not state the use of a low risk method of allocation concealment (e.g., centralized telephone) or the use a low-risk method of sequence generation (e.g., random number table).

GRADE assessments. Overall, the evidence is considered to be "very low" certainty and was downgraded for serious risk of bias and serious imprecision. Very low certainty evidence suggests that we have very little confidence in the effect estimate and that the true effect is likely to be substantially different from the estimate of effect. It is likely that further research could have an impact on the estimate of effect.

Outcomes. One study (Fantuzzo 1988⁵²) reported on the adult or child initiated social interaction vs. a control group (where the control group had the same number of play sessions, but the peer mentor did not initiate interaction) for boys/girls ages 3 to 5 exposed to physical abuse and neglect. Immediately post-treatment, we have very low certainty that child initiated social interaction (vs. control) may have a large effect on anxiety/psychological problems favouring the intervention (MD = -10.1, 95% CI, range -15.02 to -5.78, $P < 0.0001$), but this effect was not found for adult initiated peer mentoring (vs. control) (MD = 5.5, 95% CI, range -0.19 to 11.19, $P=0.06$). Another study (Fantuzzo 1996²³) reported on the use of resilient peer treatment where the intervention group involved pairing a resilient peer with a socially withdrawn peer for play sessions (the control group had the same number of play sessions, but the peer did not initiate interaction) for girls/boys ages 3 to 5 exposed to physical abuse and neglect. This study only provides data for post-treatment / follow-up only (i.e., no baseline data was provided). Immediately post-treatment, we have very low certainty evidence that resilient

peer treatment (vs. control) has a large effect on internalizing symptoms ($M = -15.83$, 95% CI, range -21.8 to -9.86, $P < 0.00001$) and externalizing symptoms ($M = -14.03$, 95% CI, range -28.31 to 0.25, $P=0.05$). Overall, we have very low certainty that child-initiated skills development may favour the intervention for the reduction of anxiety/psychological problems, externalizing symptoms, and internalizing symptoms.

Summary of child-focused skills development interventions. We have very low certainty evidence that child-focused skill development interventions may enable large reductions in internalizing and externalizing symptoms and behaviour problems at post-treatment (see Table 7).

Table 7. Summary of symptom change [large (L), medium (M), small (S), and no effect (N)] in child-focused skills training for exposure child maltreatment at post-treatment (PT) or longest month (mo) follow-up

Note: We have very low certainty in all evidence

Child-focused skill intervention	N	Internalizing symptoms												Externalizing				Parent-child interaction				Recurrence			
		Internalizing				Depression				Anxiety				PTSD											
		N	S	M	L	N	S	M	L	N	S	M	L	N	S	M	L	N	S	M	L	N	S	M	L
Child maltreatment																									
C-SIPM vs. AC (PT)	36												X												
A-SIPM vs. AC (PT)*	36									≠															
RPT vs. AC (PT)	20				X												X								
C-SIPM=child-initiated social initiation peer mentoring intervention; AC=attention control; A-SIPM=adult-initiated social initiation peer mentoring intervention; RPT=resilient peer treatment																									
Note: For A-SIPM vs. AC (PT), control group shows a moderate greater reduction in anxiety symptoms/																									

9. Discussion

This systematic review addresses psychosocial interventions for children exposed to physical abuse, emotional abuse, or neglect for the purposes of supporting guidance development relating to health sector responses to children exposed to maltreatment. In order to facilitate comparisons for the purposes of guideline development, the findings of this review are compared to the recent guidance statements for psychosocial interventions developed by the National Institute of Health and Care Excellence (NICE) for child abuse and neglect. For reference, the NICE guideline looked at children *at risk of* or experiencing child abuse and neglect, whereas this review only examined children experiencing child abuse and neglect. They also reviewed both systematic reviews, RCTs, and quasi-experimental studies, whereas all of the analysis for the present review addressed RCTs.

9.1. Interventions for children exposed to maltreatment

No studies were found that addressed pharmacological interventions for children exposed to maltreatment. For psychosocial interventions directed at children exposed to maltreatment, we analyzed 29 unique studies (26 unique intervention types published 36 articles). Our review found two intervention types to be of moderate certainty: SafeCare for children exposed to maltreatment and parent-child interaction therapy for children exposed to physical abuse and neglect. When considering single studies (of very low certainty) that showed benefit to two or more outcomes of interest, the following two intervention types were considered to be “promising” – in that they showed benefit to two or more outcomes of interest – but require more studies before firm recommendations can be made: individual parent and child CBT for children exposed to physical abuse and attachment-oriented home visits for children exposed to maltreatment. With these studies in mind, we compare our results to guidance offered by the NICE for child abuse and neglect.

Three NICE recommendations relate to child sexual abuse, and as such are not being considered in this report. NICE recommendation 1.6.9 recommends “parent-child interaction therapy for parents and children under 12 if the parent has physically abused or neglected the child...”. In this review, the evidence for parent-child interaction therapy was found to be moderate certainty evidence and this intervention demonstrated small benefits to internalizing and externalizing symptoms, recurrence rates and small to large benefits to aspects of parent-child interaction.

The other recommendations offered in the NICE guidelines are based on evidence that our review found to be of very low certainty, with some (but not all) of the interventions offering mixed or little benefit to children exposed to maltreatment (in terms of the essential outcomes analyzed for this review) (see Table 8), including recommendations related to attachment and biobehavioural catch-up (ABC), child-parent psychotherapy, home-based parenting interventions, multi-systemic therapy, individual focused psychoanalytic therapy, and group psychotherapeutic and psychoeducational sessions. Notably, the NICE recommendation for home-based parenting

interventions involved a review of mostly at-risk families, where there is more evidence for the benefits of home visiting interventions.

Table 8. Comparing NICE recommendations to the findings of this review				
CM Type	Intervention type	Baseline N	NICE Recommendation	Findings from this review
N	Attachment & biobehavioural catch-up	50	1.6.4 "Offer attachment-based intervention to parents or carers who have neglected or physically abused a child under 5..." Note: Findings based on evidence from children exposed to maltreatment and foster children.	Effectiveness: - We have very low certainty evidence that ABC may enable small benefits to parent-child interaction, but the control group's externalizing symptoms improved at a greater rate than the ABC group. Limitations in evidence: - Single, small trials - Limited evidence for outcomes considered to be essential for decision-making
CM	Preschooler-parent psychotherapy	53	NICE guideline 1.6.6, "Consider child-parent psychotherapy for parents or carers and children under 5 if the parent or carer has physically or emotionally abused or neglected the child, or the child has been exposed to domestic violence..."	Effectiveness: - We have very low certainty that immediately post-treatment preschooler-parent psychotherapy may enable a large increase in positive parent-child interaction. Infant-parent psychotherapy shows no effect on reducing internalizing or externalizing symptoms at 12-month follow-up. Limitations in evidence: - Single, small trials - Limited evidence for outcomes considered to be essential for decision-making
CM	Infant parent psychotherapy	84		
CM	SafeCare	2175	1.6.8 "Consider a comprehensive parenting intervention for parents and children under 12 if the parent or carer has physically or emotionally abused or neglected the child. This should comprise weekly home visits for at least 6 months that address..." Note: Their findings are mostly based on evidence from at risk families.	Effectiveness: For parenting interventions delivered in a home setting, we have moderate certainty evidence that SafeCare enables small reductions in recurrence rates for preschool children exposed to maltreatment, low certainty evidence that home visiting with a public health nurse may enable small reductions in recurrence rates for children exposed to physical abuse and neglect and very low certainty evidence that multisystemic therapy may enable small reductions in recurrence for exposed to physical abuse, and that Project Support may enable small reductions in recurrence rates for children exposed to physical abuse and neglect. Other than this, evidence for the effectiveness of parenting interventions delivered in a home setting for children exposed to maltreatment is limited and conflicting, showing limited benefits especially for mental health
CM	Promoting first relationships ²⁵	210 (Dyads)		
CM	Attachment oriented home visits ⁴⁹	89		
CM	Psychoeducation home visits ¹⁹	64		
CM	Psychoeducational parenting intervention ²²	53		
CM	Multi-systemic therapy ³⁰	43 (Families)		
PA & N	Home visits by nurses ¹⁷	163		

PA	Multi-systemic therapy ²⁸	86 (Dyads)		symptoms. We have very low certainty that some interventions (e.g., promoting first relationships, attachment-oriented home visits) may enable moderate benefits to certain aspects of parent-child interaction and that multi-systemic therapy may enable small reductions in internalizing symptoms and PTSD symptoms (but not depression or anxiety symptoms).
PA & N	Project Support ⁵⁰	35		
PA	Internet-based interacting together everyday ⁵¹	9 (Families)		
CM	Multi-systemic therapy ³⁰	43 (Families)	1.6.10 “Consider multi-systemic therapy for child abuse and neglect for parents, children and young people aged 10-17 if the parent has abused or neglected their child...”	- In the present review, the evidence for multi-systemic therapy was considered to be very low certainty. For child maltreatment, one RCT found some benefits in parent-child interaction resulting from multisystemic therapy (the intervention) and some benefits resulting from parent training (the control group). For physical abuse, the RCT found a reduction in children’s internalizing and PTSD symptoms, as well as small reduction in recurrence rates, but small or no effect on externalizing, anxiety, and depression symptoms. reduction in internalizing symptoms Limitations in evidence: - Single, small trials that reported different outcomes (so could not be pooled)
PA	Multi-systemic therapy ²⁸	86 (Dyads)		

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Appendix I: Complete Search Strategies

Database Details and Number of Returned Records						
C. Updates to AHRQ Searches						
			Records Retrieved			
Database	Search Interface	Import Order	Before January 1, 1990	Non-English between January 1, 1990 and April 1, 2012	After April 1, 2012	Data of Database Inception – Date Search was Run
Medline	PubMed	1	162	107	695	- June 24, 16
PyscINFO	OVID	2	4	3	121	- June 24, 16
Web of Science	Thomson Reuters	3	1	32	691	- June 24, 16
Total records retrieved for search update			2846			
D. Additional Searches Across All Time Spans						
Database	Search Interfact	Import Order	Records Retrieved			Date of Database Inception – Date Search was Run
Cochrane	(Wiley)	4	347			- June 24, 16
Embase	OVID	5	1596			- June 24, 16
CINAHL	Ebsco	6	714			- June 24, 16
Sociological Abstracts	Proquest	7	709			- June 24, 16
ERIC	Proquest	8	480			- June 24, 16
Social Work Abstracts	Ebsco	9	270			- June 24, 16
Social Services Abstracts	Proquest	10	918			- June 24, 16
Criminal Justice Abstracts	Ebsco	11	896			- June 24, 16
ASSIA	Ebsco	12	425			- June 24, 16
WHO’s Global Index Medicus		13	109			
Total records across other WHO suggested databases						
Total records across all databases					8963	
Total records after deduplication						

	PubMed	
Search	Query	Items found
#35	(#2 AND #35) NOT Medline[sb]	683
#34	randomized [tiab] OR placebo [tiab] OR randomly [tiab] OR trial [tiab] OR groups [tiab] OR cohort*[tiab]	2515429
#33	Search #20 AND (#21 OR #22 OR #23) Filters: Publication date from 1990/01/01 to 2012/04/01; Afrikaans; Albanian; Arabic; Armenian; Azerbaijani; Bosnian; Bulgarian; Catalan; Chinese; Croatian; Czech; Danish; Dutch; Esperanto; Estonian; Finnish; French; Georgian; German; Greek, Modern; Hebrew; Hindi; Hungarian; Icelandic; Indonesian; Italian; Japanese; Kinyarwanda; Korean; Latin; Latvian; Lithuanian; Macedonian; Malay; Malayalam; Maori; Multiple Languages; Norwegian; Persian; Polish; Portuguese; Pushto; Romanian; Russian; Sanskrit; Scottish gaelic; Serbian; Slovak; Slovenian; Spanish; Swedish; Thai; Turkish; Ukrainian; Undetermined; Vietnamese; Welsh	107
#32	Search #20 AND (#21 OR #22 OR #23) Filters: Publication date from 1990/01/01 to 2012/04/01	2190
#30	Search #20 AND (#21 OR #22 OR #23) Filters: Publication date to 1990/01/01	162
#25	Search #20 AND (#21 OR #22 OR #23) Filters: Publication date from 2012/04/01	695
#24	Search #20 AND (#21 OR #22 OR #23)	2995
#23	Search "Observation"[Mesh]	5124
#22	Search "Cohort Studies"[Mesh]	1527409
#21	Search "Randomized Controlled Trial"[Publication Type] OR "Randomized Controlled Trials as Topic"[Mesh] OR "Single-Blind Method"[Mesh] OR "Double-Blind Method"[Mesh] OR "Random Allocation"[Mesh] OR "trial"[tiab]	844280
#20	Search #5 AND (#6 OR #7 OR #8 OR #9 OR #10 OR #11 OR #12 OR #13 OR #14 OR #15 OR #16 OR #17 OR #18 OR #19)	17012
#19	Search "Drug Therapy"[Mesh]	1142811
#18	Search "Anesthetics, Dissociative" [Pharmacological Action]	10342
#17	Search "Opiate Alkaloids"[Mesh]	78390
#16	Search "Benzodiazepines"[MeSH]	60444
#15	Search Tranquilizing Agents [Pharmacological Action]	172991
#14	Search Antipsychotic Agents [Pharmacological Action]	112783
#13	Search Adrenergic Agents [Pharmacological Action]	329940
#12	Search Anticonvulsants [Pharmacological Action]	138213
#11	Search Monoamine Oxidase Inhibitors [Pharmacological Action]	20862
#10	Search Antidepressive Agents [Pharmacological Action]	127702
#9	Search "Psychotropic Drugs"[Mesh]	140040
#8	Search "Complementary Therapies"[Mesh]	192563
#7	Search "Psychotherapy"[Mesh]	167069
#6	Search "intervention"[tiab] OR "interventions"[tiab] OR "treatment"[tiab] OR "treatments"[tiab] OR "therapy"[tiab] OR "therapies"[tiab] OR "therapeutic"[tiab] OR "training"[tiab] OR "psychoeducation"[tiab] OR "program"[tiab] OR "programs"[tiab]	5644792
#5	Search #3 AND #4	59072
#4	Search "Adolescent"[Mesh] OR "Child"[Mesh] OR "Infant"[Mesh]	3070009

#3	Search #1 OR #2	84076
#2	Search "child abuse"[tiab] OR "child maltreatment"[tiab] OR "neglect"[tiab] OR "domestic violence"[tiab] OR "child welfare"[tiab] OR "foster care"[tiab] OR "kinship care"[tiab] OR "out of home care"[tiab] OR "out of home placement"[tiab] OR "looked after child"[tiab] OR "looked after young"[tiab] OR child protective service* OR physical abuse*	35089
#1	Search "Child Abuse"[Mesh] OR "Child Welfare"[Mesh] OR "Infant Welfare"[Mesh] OR "Domestic Violence"[Mesh] OR "Foster Home Care"[Mesh]	67201

Database: PsycINFO <1806 to June Week 3 2016>

Search Strategy:

-
- 1 child abuse/ or battered child syndrome/ (25122)
 - 2 Child Welfare/ (6843)
 - 3 Domestic Violence/ (9837)
 - 4 Foster Care/ (4619)
 - 5 ("child abuse" or "child maltreatment" or neglect or "domestic violence" or "child welfare" or "foster care" or "kinship care" or "out of home care" or "out of home placement" or "looked after child" or "looked after young" or child protective service* or physical abuse*).mp. (68024)
 - 6 (intervention or interventions or treatment or treatments or therapy or therapies or therapeutic or training or psychoeducation or program or programs).mp. (1262955)
 - 7 psychotherapy/ or adlerian psychotherapy/ or adolescent psychotherapy/ or analytical psychotherapy/ or autogenic training/ or behavior therapy/ or brief psychotherapy/ or brief relational therapy/ or child psychotherapy/ or client centered therapy/ or cognitive behavior therapy/ or conversion therapy/ or eclectic psychotherapy/ or emotion focused therapy/ or existential therapy/ or experiential psychotherapy/ or expressive psychotherapy/ or eye movement desensitization therapy/ or feminist therapy/ or geriatric psychotherapy/ or gestalt therapy/ or group psychotherapy/ or guided imagery/ or humanistic psychotherapy/ or hypnotherapy/ or individual psychotherapy/ or insight therapy/ or integrative psychotherapy/ or interpersonal psychotherapy/ or logotherapy/ or narrative therapy/ or network therapy/ or persuasion therapy/ or primal therapy/ or psychoanalysis/ or psychodrama/ or psychodynamic psychotherapy/ or psychotherapeutic counseling/ or rational emotive behavior therapy/ or reality therapy/ or relationship therapy/ or solution focused therapy/ or supportive psychotherapy/ or transactional analysis/ (165099)
 - 8 alternative medicine/ or acupuncture/ or aromatherapy/ or faith healing/ or folk medicine/ (6988)
 - 9 drugs/ or adrenergic blocking drugs/ or adrenergic drugs/ or alcohols/ or alkaloids/ or amines/ or analgesic drugs/ or anesthetic drugs/ or anti inflammatory drugs/ or antiandrogens/ or antibiotics/ or anticoagulant drugs/ or anticonvulsive drugs/ or antidepressant drugs/ or antiemetic drugs/ or antiestrogens/ or antihistaminic drugs/ or antihypertensive drugs/ or antineoplastic drugs/ or antispasmodic drugs/ or antitremor drugs/ or antitubercular drugs/ or antiviral drugs/ or appetite depressing drugs/ or barbiturates/ or benzodiazepines/ or bromides/ or cannabis/ or channel blockers/ or cholinergic blocking drugs/ or cholinergic drugs/ or cholinomimetic drugs/ or cns affecting drugs/ or diuretics/ or dopamine agonists/ or emetic drugs/ or enzyme inhibitors/ or enzymes/ or ergot derivatives/ or ganglion blocking drugs/ or generic drugs/ or hallucinogenic drugs/ or heart rate affecting drugs/ or hypnotic drugs/ or muscle relaxing drugs/ or narcotic agonists/ or narcotic antagonists/ or narcotic drugs/ or neurotransmitter uptake inhibitors/ or nonprescription drugs/ or nootropic drugs/ or performance enhancing drugs/ or prescription drugs/ or psychotomimetic drugs/ or respiration stimulating drugs/ or sedatives/ or serotonin agonists/ or serotonin antagonists/ or statins/ or steroids/ or sympatholytic drugs/ or sympathomimetic drugs/ or thimerosal/ or tranquilizing drugs/ or vasoconstrictor drugs/ or vasodilator drugs/ (103026)
 - 10 or/1-5 (68045)
 - 11 or/6-9 (1351602)
 - 12 10 and 11 (29595)

13 randomized controlled trial*.mp. (17160)
 14 "single blind method".mp. (2)
 15 "double blind method".mp. (53)
 16 "random allocation".mp. (189)
 17 trial.mp. (83718)
 18 cohort stud*.mp. (14191)
 19 observation.mp. (62983)
 20 or/13-19 (163103)
 21 12 and 20 (1102)
 22 limit 21 to (all journals and human and ("0200 clinical case study" or "0410 experimental replication" or "0430 followup study" or "0450 longitudinal study" or "0451 prospective study" or "0453 retrospective study" or 1600 qualitative study or 1800 quantitative study or "2000 treatment outcome/clinical trial") and (100 childhood <birth to age 12 yrs> or 120 neonatal <birth to age 1 mo> or 140 infancy <2 to 23 mo> or 160 preschool age <age 2 to 5 yrs> or 180 school age <age 6 to 12 yrs> or 200 adolescence <age 13 to 17 yrs>) and journal article) (271)
 23 limit 22 to yr="1860 - 1990" (4)
 24 limit 22 to yr="2012 -Current" (121)
 25 limit 22 to ((afrikaans or albanian or arabic or bulgarian or catalan or chinese or czech or danish or dutch or finnish or french or georgian or german or greek or hebrew or hindi or hungarian or iranian or italian or japanese or korean or lithuanian or malaysian or nonenglish or norwegian or polish or portuguese or romanian or russian or serbo croatian or slovak or slovene or spanish or swedish or turkish or ukrainian) and yr="1990 - 2012") (3)

Web of Science		
Set	Results	
# 29	32	#26 AND #25
		Refined by: PUBLICATION YEARS: (2016 OR 2002 OR 1998 OR 2008 OR 2000 OR 1995 OR 2007 OR 1999 OR 1994 OR 2012 OR 2005 OR 2001 OR 1992 OR 2011 OR 2004 OR 1996 OR 1993 OR 2010 OR 2006 OR 1997 OR 2009 OR 2003) AND LANGUAGES: (SPANISH OR PORTUGUESE OR RUSSIAN OR GERMAN OR FRENCH OR DUTCH)
		Indexes=SCI-EXPANDED, SSCI, A&HCI Timespan=All years
		Indexes=SCI-EXPANDED, SSCI, A&HCI Timespan=All years
# 28	692	#26 AND #25
		Refined by: PUBLICATION YEARS: (2015 OR 2014 OR 2013 OR 2012 OR 1987)
		Indexes=SCI-EXPANDED, SSCI, A&HCI Timespan=All years
# 27	1,517	#26 AND #25
		Indexes=SCI-EXPANDED, SSCI, A&HCI Timespan=All years
# 26	717,557	TS=(randomized controlled trial) OR TS=(observational) OR TS=(cohort study)
		Indexes=SCI-EXPANDED, SSCI, A&HCI Timespan=All years
# 25	16,553	#23 AND #22
		Refined by: DOCUMENT TYPES: (ARTICLE)
		Indexes=SCI-EXPANDED, SSCI, A&HCI Timespan=All years
# 24	19,084	#23 AND #22
		Indexes=SCI-EXPANDED, SSCI, A&HCI Timespan=All years
# 23	1,753,731	TS=(child*) OR TS=(youth) OR TS=(baby) OR TS=(adolescent) OR TS=(teen) OR TS=(teenager) OR TS=(toddler) OR TS=(Infant)
		Indexes=SCI-EXPANDED, SSCI, A&HCI Timespan=All years
# 22	38,506	#21 OR #20
		Indexes=SCI-EXPANDED, SSCI, A&HCI Timespan=All years
# 21	2,816	#13 OR #12 OR #11 OR #10 OR #9 OR #8 OR #7 OR #6 OR #5 OR #4 OR #3 OR #2 OR #1

		Refined by: RESEARCH AREAS: (RESEARCH EXPERIMENTAL MEDICINE OR PHARMACOLOGY PHARMACY)
		Indexes=SCI-EXPANDED, SSCI, A&HCI Timespan=All years
# 20	37,078	#19 AND #14
		Indexes=SCI-EXPANDED, SSCI, A&HCI Timespan=All years
# 19	5,896,831	#18 OR #17 OR #16 OR #15
		Indexes=SCI-EXPANDED, SSCI, A&HCI Timespan=All years
# 18	53,090	TS=(Psychotherapy)
		Indexes=SCI-EXPANDED, SSCI, A&HCI Timespan=All years
# 17	3,065,698	TS=("therapy") OR TS=("therapies") OR TS=("therapeutic") OR TS=("training") OR TS=("psychoeducation") OR TS=("program") OR TS=("programs")
		Indexes=SCI-EXPANDED, SSCI, A&HCI Timespan=All years
# 16	669,620	TS=("intervention") OR TS=("interventions")
		Indexes=SCI-EXPANDED, SSCI, A&HCI Timespan=All years
# 15	3,410,866	TS=("treatment") OR TS=("treatments")
		Indexes=SCI-EXPANDED, SSCI, A&HCI Timespan=All years
# 14	151,909	#13 OR #12 OR #11 OR #10 OR #9 OR #8 OR #7 OR #6 OR #5 OR #4 OR #3 OR #2 OR #1
		Indexes=SCI-EXPANDED, SSCI, A&HCI Timespan=All years
# 13	16,091	TS=(physical abuse*)
		Indexes=SCI-EXPANDED, SSCI, A&HCI Timespan=All years
# 12	1,762	TS=(child protective service*)
		Indexes=SCI-EXPANDED, SSCI, A&HCI Timespan=All years
# 11	20	TS=("looked after young")
		Indexes=SCI-EXPANDED, SSCI, A&HCI Timespan=All years
# 10	2	TS=("looked after child")
		Indexes=SCI-EXPANDED, SSCI, A&HCI Timespan=All years
# 9	331	TS=("out of home placement")
		Indexes=SCI-EXPANDED, SSCI, A&HCI Timespan=All years
# 8	611	TS=("out of home care")
		Indexes=SCI-EXPANDED, SSCI, A&HCI Timespan=All years
# 7	444	TS=("kinship care")
		Indexes=SCI-EXPANDED, SSCI, A&HCI Timespan=All years
# 6	4,224	TS=("foster care")
		Indexes=SCI-EXPANDED, SSCI, A&HCI Timespan=All years
# 5	5,410	TS=("child welfare")
		Indexes=SCI-EXPANDED, SSCI, A&HCI Timespan=All years
# 4	11,484	TS=("domestic violence")
		Indexes=SCI-EXPANDED, SSCI, A&HCI Timespan=All years
# 3	100,130	TS=(neglect)
		Indexes=SCI-EXPANDED, SSCI, A&HCI Timespan=All years
# 2	31,977	TS=(child) AND TS=(abuse*)
		Indexes=SCI-EXPANDED, SSCI, A&HCI Timespan=All years
# 1	3,763	TS=("child maltreatment")
		Indexes=SCI-EXPANDED, SSCI, A&HCI Timespan=All years

Cochrane (Wiley)

ID	Search	Hits
#1	MeSH descriptor: [Child Abuse] explode all trees	499
#2	MeSH descriptor: [Child Welfare] explode all trees	414
#3	MeSH descriptor: [Infant Welfare] explode all trees	101
#4	MeSH descriptor: [Domestic Violence] this term only	150
#5	MeSH descriptor: [Foster Home Care] explode all trees	101
#6	("child abuse" or "child maltreatment" or "neglect" or "domestic violence" or "child welfare" or "foster care" or "kinship care" or "out of home care" or "out of home placement" or "looked after child" or "looked after young"):ti,ab	1095
#7	child protective service* or physical abuse*	1925
#8	#1 or #2 or #3 or #4 or #5 or #6 or #7	3623
#9	MeSH descriptor: [Adolescent] explode all trees	85203
#10	MeSH descriptor: [Child] explode all trees	178
#11	MeSH descriptor: [Infant] explode all trees	14344
#12	#9 or #10 or #11	98218
#13	#8 and #12	663
#14	(intervention or interventions or treatment or treatments or therapy or therapies or therapeutic or training or psychoeducation or program or programs):ti,ab	533546
#15	MeSH descriptor: [Psychotherapy] explode all trees	18614
#16	MeSH descriptor: [Complementary Therapies] explode all trees	16672
#17	MeSH descriptor: [Antidepressive Agents] explode all trees	5382
#18	MeSH descriptor: [Monoamine Oxidase Inhibitors] explode all trees	389
#19	MeSH descriptor: [Anticonvulsants] explode all trees	2225
#20	MeSH descriptor: [Adrenergic Agents] explode all trees	8657
#21	MeSH descriptor: [Antipsychotic Agents] explode all trees	4223
#22	MeSH descriptor: [Tranquilizing Agents] explode all trees	7054
#23	MeSH descriptor: [Benzodiazepines] explode all trees	8125
#24	MeSH descriptor: [Opiate Alkaloids] explode all trees	7752
#25	MeSH descriptor: [Anesthetics, Dissociative] explode all trees	324
#26	MeSH descriptor: [Psychotropic Drugs] explode all trees	12592
#27	MeSH descriptor: [Drug Therapy] explode all trees	126818
#28	#14 or #15 or #16 or #17 or #18 or #19 or #20 or #21 or #22 or #23 or #24 or #25 or #26 or #27	588103
#29	#13 and #28	489
#30	MeSH descriptor: [Randomized Controlled Trial] explode all trees	156
#31	MeSH descriptor: [Randomized Controlled Trials as Topic] explode all trees	21856
#32	MeSH descriptor: [Double-Blind Method] explode all trees	115011
#33	MeSH descriptor: [Random Allocation] explode all trees	20529
#34	trial:ti,ab	291306
#35	MeSH descriptor: [Cohort Studies] explode all trees	126333
#36	MeSH descriptor: [Observation] explode all trees	196
#37	#30 or #31 or #32 or #33 or #34 or #35 or #36	438905
#38	#29 and #37	347

Database: Embase Classic+Embase <1947 to 2016 June 23>

Search Strategy:

- 1 child abuse/ or child neglect/ or child sexual abuse/ (31946)
- 2 ("child abuse" or "child maltreatment" or neglect or "foster care" or "kinship care" or "out of home care" or "out of home placement" or "looked after child" or "looked after young").tw. (28990)
- 3 or/1-2 (49926)
- 4 exp adolescent/ or exp child/ or exp infant/ (3189576)
- 5 (child* or infant* or baby or babies or toddler* or preschool* or pre-school* or "young person" or "young

people" or teen* or adolescen* or youth*).tw. (2082130)

6 or/4-5 (3718152)

7 3 and 6 (35021)

8 intervention study/ (28322)

9 exp psychotherapy/ (217866)

10 exp alternative medicine/ (40260)

11 drug therapy/ (425316)

12 (intervention or interventions or treatment or treatments or therapy or therapies or therapeutic or training or psychoeducation or program or programs).tw. (7696701)

13 or/8-12 (7982939)

14 7 and 13 (11401)

15 (random\$ or placebo\$ or single blind\$ or double blind\$ or triple blind\$).tw. (1227921)

16 RETRACTED ARTICLE/ (8321)

17 or/15-16 (1236032)

18 (animal\$ not human\$).sh,hw. (4081189)

19 (book or conference paper or editorial or letter or review).pt. not exp randomized controlled trial/ (4390945)

20 (random sampl\$ or random digit\$ or random effect\$ or random survey or random regression).ti,ab. not exp randomized controlled trial/ (74003)

21 17 not (18 or 19 or 20) (956119)

22 exp cohort analysis/ (247880)

23 exp longitudinal study/ (89935)

24 exp prospective study/ (340452)

25 exp follow up/ (1073813)

26 cohort\$.tw. (573635)

27 or/21-26 (2615884)

28 14 and 27 (1596)

CINAHL (EBSCO)

Search Terms	Search Options	Actions	
S24	S17 AND S23	Search modes - Boolean/Phrase	View Results (714)
S23	S18 OR S19 OR S20 OR S21 OR S22	Search modes - Boolean/Phrase	View Results (359,635)
S22	TX (cohort stud* OR observation)	Search modes - Boolean/Phrase	View Results (71,578)
S21	(MH "Prospective Studies") OR (MH "Concurrent Prospective Studies") OR (MH "Nonconcurrent Prospective Studies")	Search modes - Boolean/Phrase	View Results (183,665)
S20	TI (trial) OR AB (trial)	Search modes - Boolean/Phrase	View Results (114,800)
S19	(MH "Random Assignment")	Search modes - Boolean/Phrase	View Results (33,493)
S18	(MH "Randomized Controlled Trials") OR (MH "Single-Blind Studies") OR (MH "Triple-Blind Studies") OR (MH "Double-Blind Studies")	Search modes - Boolean/Phrase	View Results (50,585)
S17	S3 AND S16	Search modes - Boolean/Phrase	View Results (3,150)
S16	S4 OR S5 OR S6 OR S7 OR S8 OR S9 OR S10 OR S11 OR S12 OR S13 OR S14 OR S15	Search modes - Boolean/Phrase	View Results (1,486,614)

S15	(MH "Drug Therapy")	Search modes - Boolean/Phrase	View Results (6,705)
S14	(MH "Anesthetics, Dissociative+")	Search modes - Boolean/Phrase	View Results (1,247)
S13	(MH "Morphine+")	Search modes - Boolean/Phrase	View Results (7,621)
S12	(MH "Antianxiety Agents, Benzodiazepine+")	Search modes - Boolean/Phrase	View Results (4,433)
S11	(MH "Antipsychotic Agents+")	Search modes - Boolean/Phrase	View Results (9,412)
S10	(MH "Adrenergic Agents+")	Search modes - Boolean/Phrase	View Results (21,146)
S9	(MH "Anticonvulsants+")	Search modes - Boolean/Phrase	View Results (9,105)
S8	(MH "Monoamine Oxidase Inhibitors+")	Search modes - Boolean/Phrase	View Results (653)
S7	(MH "Psychotropic Drugs") OR (MH "Antidepressive Agents+") OR (MH "Hallucinogens+") OR (MH "Tranquilizing Agents+")	Search modes - Boolean/Phrase	View Results (28,379)
S6	(MH "Alternative Therapies") OR (MH "Apitherapy") OR (MH "Aromatherapy") OR (MH "Auriculotherapy") OR (MH "Bioelectromagnetic Applications") OR (MH "Bioenergy Therapies") OR (MH "Bowen Technique") OR (MH "Buteyko Method") OR (MH "Detoxification, Alternative Therapy") OR (MH "Life Style Changes") OR (MH "Manual Therapy") OR (MH "Mind Body Techniques") OR (MH "Natural and Biologically Based Therapies") OR (MH "Rejuvenation") OR (MH "Wilderness Experience")	Search modes - Boolean/Phrase	View Results (33,470)
S5	(MH "Psychotherapy") OR (MH "Art Therapy") OR (MH "Behavior Modification") OR (MH "Bibliotherapy") OR (MH "Biofeedback") OR (MH "Crisis Intervention") OR (MH "Dance Therapy") OR (MH "Guided Imagery") OR (MH "Hypnosis") OR (MH "Music Therapy") OR (MH "Pet Therapy") OR (MH "Play Therapy") OR (MH "Psychotherapeutic Processes") OR (MH "Psychotherapy, Brief") OR (MH "Psychotherapy, Psychodynamic") OR (MH "Reality	Search modes - Boolean/Phrase	View Results (64,334)

	Therapy") OR (MH "Reminiscence Therapy") OR (MH "Socioenvironmental Therapy") OR (MH "Su ...		
S4	TX (intervention or interventions or treatment or treatments or therapy or therapies or therapeutic or training or psychoeducation or program or programs)	Search modes - Boolean/Phrase	View Results (1,448,830)
S3	S1 OR S2	Limiters - Human; Age Groups: Infant, Newborn: birth-1 month, Infant: 1-23 months, Child, Preschool: 2-5 years, Child: 6-12 years, Adolescent: 13-18 years	View Results (6,873)
S2	TI ("child abuse" or "child maltreatment" or neglect or "domestic violence" or "child welfare" or "foster care" or "kinship care" or "out of home care" or "out of home placement" or "looked after child" or "looked after young" or child protective service* or physical abuse*) OR AB ("child abuse" or "child maltreatment" or neglect or "domestic violence" or "child welfare" or "foster care" or "kinship care" or "out of home care" or "out of home placement" or "looked after child" or "looked after y ...	Search modes - Boolean/Phrase	View Results (13,796)
S1	(MH "Child Abuse") OR (MH "Child Abuse, Sexual") OR (MH "Munchausen Syndrome By Proxy") OR (MH "Child Welfare") OR (MH "Domestic Violence") OR (MH "Foster Home Care")	Search modes - Boolean/Phrase	View Results (26,211)

Sociological Abstracts (Proquest)

Set	Search	Databases	Results
S3	S1 AND S2	Sociological Abstracts	709°
S2	(TI(random* or placebo* or "single blind*" or "double blind*" or "triple blind*") OR AB(random* or placebo* or "single blind*" or "double blind*" or "triple blind*")) OR (TI(cohort*) OR AB(cohort*))	Sociological Abstracts	25,849°
S1	(SU.EXACT("Child Sexual Abuse") OR SU.EXACT("Child Abuse") OR SU.EXACT("Family Violence") OR SU.EXACT("Foster Care")) OR (TI("child abuse" or "child maltreatment" or neglect or "domestic violence" or "child welfare" or "foster care" or "kinship care" or "out of home care" or "out of home placement" or "looked after child" or "looked after young" or	Sociological Abstracts	19,156°

	child protective service* or physical abuse*) OR AB("child abuse" or "child maltreatment" or neglect or "domestic violence" or "child welfare" or "foster care" or "kinship care" or "out of home care" or "out of home placement" or "looked after child" or "looked after young" or child protective service* or physical abuse*))		

ERIC (Proquest)

Set	Search	Databases	Results
S3	((SU.EXACT("Child Abuse") OR SU.EXACT("Child Welfare") OR SU.EXACT("Foster Care")) OR (TI("child abuse" OR "child maltreatment" OR neglect OR "domestic violence" OR "child welfare" OR "foster care" OR "kinship care" OR "out of home care" OR "out of home placement" OR "looked after child" OR "looked after young" OR child protective service* OR physical abuse*) OR AB("child abuse" OR "child maltreatment" OR neglect OR "domestic violence" OR "child welfare" OR "foster care" OR "kinship care" OR "out of home care" OR "out of home placement" OR "looked after child" OR "looked after young" OR child protective service* OR physical abuse*))) AND ((TI(random* or placebo* or "single blind*" or "double blind*" or "triple blind*") OR AB(random* or placebo* or "single blind*" or "double blind*" or "triple blind*")) OR (TI(cohort*) OR AB(cohort*)))	ERIC	480°
S2	(TI(random* or placebo* or "single blind*" or "double blind*" or "triple blind*") OR AB(random* or placebo* or "single blind*" or "double blind*" or "triple blind*")) OR (TI(cohort*) OR AB(cohort*))	ERIC	36,803°
S1	(SU.EXACT("Child Abuse") OR SU.EXACT("Child Welfare") OR SU.EXACT("Foster Care")) OR (TI("child abuse" or "child maltreatment" or neglect or "domestic violence" or "child welfare" or "foster care" or "kinship care" or "out of home care" or "out of home placement" or "looked after child" or "looked after young" or child protective service* or physical abuse*) OR AB("child abuse" or "child maltreatment" or neglect or "domestic violence" or "child welfare" or "foster care" or "kinship care" or "out of home care" or "out of home placement" or "looked after child" or "looked after young" or child protective service* or physical abuse*))	ERIC	18,335°

Social Work Abstracts (Ebsco)

Search ID#	Search Terms	Search Options	Actions
S5	S3 AND S4	Search modes - Boolean/Phrase	View Results (270)
S4	(TI(random* or placebo* or "single blind*" or "double blind*" or "triple blind*") OR AB(random* or placebo* or "single blind*" or "double blind*" or "triple blind*")) OR (TI(cohort*) OR AB(cohort*))	Search modes - Boolean/Phrase	View Results (3,222)
S3	S1 OR S2	Search modes - Boolean/Phrase	View Results (6,045)
S2	TI ("child abuse" or "child maltreatment" or neglect or "domestic violence" or "child welfare" or "foster care" or "kinship care" or "out of home care" or "out of home	Search modes - Boolean/Phrase	View Results (5,821)

	placement" or "looked after child" or "looked after young" or child protective service* or physical abuse*) OR AB ("child abuse" or "child maltreatment" or neglect or "domestic violence" or "child welfare" or "foster care" or "kinship care" or "out of home care" or "out of home placement" or "looked after child" or "looked after y ...		
S1	(ZU "child abuse") or (ZU "child abuse and neglect")	Search modes - Boolean/Phrase	View Results (1,145)

Social Services Abstracts (Proquest)

Set	Search	Databases	Results
S3	((SU.EXACT("Child Sexual Abuse") OR SU.EXACT("Child Abuse") OR SU.EXACT("Child Welfare Services") OR SU.EXACT("Foster Care")) OR TI("child abuse" OR "child maltreatment" OR neglect OR "domestic violence" OR "child welfare" OR "foster care" OR "kinship care" OR "out of home care" OR "out of home placement" OR "looked after child" OR "looked after young" OR child protective service* OR physical abuse*) OR AB("child abuse" OR "child maltreatment" OR neglect OR "domestic violence" OR "child welfare" OR "foster care" OR "kinship care" OR "out of home care" OR "out of home placement" OR "looked after child" OR "looked after young" OR child protective service* OR physical abuse*)) AND (SU.EXACT("Cohort Analysis") OR (TI(random* or placebo* or "single blind*" or "double blind*" or "triple blind*") OR AB(random* or placebo* or "single blind*" or "double blind*" or "triple blind*")) OR (TI(cohort*) OR AB(cohort*)))	Social Services Abstracts	918°
S2	SU.EXACT("Cohort Analysis") OR (TI(random* or placebo* or "single blind*" or "double blind*" or "triple blind*") OR AB(random* or placebo* or "single blind*" or "double blind*" or "triple blind*")) OR (TI(cohort*) OR AB(cohort*))	Social Services Abstracts	9,305°
S1	(SU.EXACT("Child Sexual Abuse") OR SU.EXACT("Child Abuse") OR SU.EXACT("Child Welfare Services") OR SU.EXACT("Foster Care")) OR TI("child abuse" OR "child maltreatment" OR neglect OR "domestic violence" OR "child welfare" OR "foster care" OR "kinship care" OR "out of home care" OR "out of home placement" OR "looked after child" OR "looked after young" OR child protective service* OR physical abuse*) OR AB("child abuse" OR "child maltreatment" OR neglect OR "domestic violence" OR "child welfare" OR "foster care" OR "kinship care" OR "out of home care" OR "out of home placement" OR "looked after child" OR "looked after young" OR child protective service* OR physical abuse*)	Social Services Abstracts	23,443°

Note: this is how we should likely go in these **small** databases. AHRQ terms for child maltreatment and then terms for RCTs/cohort studies

Criminal Justice Abstracts (Ebsco)

Search ID#	Search Terms	Search Options	Actions
S7	S3 AND S6	Search modes - Boolean/Phrase	View Results (896)
S6	S4 OR S5	Search modes - Boolean/Phrase	View Results (12,719)
S5	(TI(random* or placebo* or "single blind*" or "double blind*" or "triple blind*") OR AB(random* or placebo* or "single blind*" or "double blind*" or "triple blind*")) OR (TI(cohort*) OR AB(cohort*))	Search modes - Boolean/Phrase	View Results (12,587)
S4	(ZU "randomized controlled trials")	Search modes - Boolean/Phrase	View Results (960)
S3	S1 OR S2	Search modes - Boolean/Phrase	View Results (20,195)
S2	TI ("child abuse" or "child maltreatment" or neglect or "domestic violence" or "child welfare" or "foster care" or "kinship care" or "out of home care" or "out of home placement" or "looked after child" or "looked after young" or child protective service* or physical abuse*) OR AB ("child abuse" or "child maltreatment" or neglect or "domestic violence" or "child welfare" or "foster care" or "kinship care" or "out of home care" or "out of home placement" or "looked after child" or "looked after y ...	Search modes - Boolean/Phrase	View Results (15,402)
S1	(((((ZU "child abuse"))) or ((ZU "child welfare"))) or ((ZU "intimate partner violence"))) or ((ZU "foster home care")))	Search modes - Boolean/Phrase	View Results (11,034)

ASSIA (Ebsco)

Set	Search	Databases	Results
S3	((SU.EXACT("Sexually abused young children") OR SU.EXACT("Abused preschool children") OR SU.EXACT("Childhood abuse") OR SU.EXACT("Abused disabled children") OR SU.EXACT("Abused young children") OR SU.EXACT("Fatal child abuse") OR SU.EXACT("Sexually abused children") OR SU.EXACT("Ritually abused children") OR SU.EXACT("Child abuse") OR SU.EXACT("Sexually abused disabled children") OR SU.EXACT("Abused children") OR SU.EXACT("Child sexual abuse") OR SU.EXACT("Childhood sexual abuse") OR SU.EXACT("Sexually abused preschool children") OR SU.EXACT("Childhood psychological abuse") OR SU.EXACT("Ritual child abuse") OR SU.EXACT("Child welfare") OR SU.EXACT("Kinship foster care") OR SU.EXACT("Kinship foster carers") OR SU.EXACT("Temporary foster care") OR SU.EXACT("Foster care") OR SU.EXACT("Long term foster care")) OR (TI ("child abuse" OR "child maltreatment" OR neglect OR "domestic violence" OR "child welfare" OR "foster care" OR "kinship care" OR "out of home care" OR "out of home placement" OR "looked after child" OR "looked after young" OR child protective service* OR physical abuse*) OR AB ("child abuse" OR "child maltreatment" OR neglect OR "domestic violence" OR "child welfare" OR "foster care" OR "kinship care" OR "out of home care" OR "out of home placement" OR "looked after child" OR "looked after young" OR child protective service* OR physical abuse*))) AND ((SU.EXACT("Cluster randomized trials") OR SU.EXACT("Clinical randomized controlled trials") OR SU.EXACT("Single blind randomized controlled trials") OR SU.EXACT("Randomized controlled trials") OR SU.EXACT("Cluster randomized controlled trials") OR SU.EXACT("Double blind randomized trials") OR SU.EXACT("Double blind randomized controlled trials") OR SU.EXACT("Cohort	Applied Social Sciences Index & Abstracts (ASSIA)	425°

	analysis")) OR (TI(random* OR placebo* OR "single blind*" OR "double blind*" OR "triple blind*") OR AB(random* OR placebo* OR "single blind*" OR "double blind*" OR "triple blind*")) OR (TI(cohort*) OR AB(cohort*))		
S2	(SU.EXACT("Cluster randomized trials") OR SU.EXACT("Clinical randomized controlled trials") OR SU.EXACT("Single blind randomized controlled trials") OR SU.EXACT("Randomized controlled trials") OR SU.EXACT("Cluster randomized controlled trials") OR SU.EXACT("Double blind randomized trials") OR SU.EXACT("Double blind randomized controlled trials") OR SU.EXACT("Cohort analysis")) OR (TI(random* or placebo* or "single blind*" or "double blind*" or "triple blind*") OR AB(random* or placebo* or "single blind*" or "double blind*" or "triple blind*")) OR (TI(cohort*) OR AB(cohort*))	Applied Social Sciences Index & Abstracts (ASSIA)	43,263°
S1	(SU.EXACT("Sexually abused young children") OR SU.EXACT("Abused preschool children") OR SU.EXACT("Childhood abuse") OR SU.EXACT("Abused disabled children") OR SU.EXACT("Abused young children") OR SU.EXACT("Fatal child abuse") OR SU.EXACT("Sexually abused children") OR SU.EXACT("Ritually abused children") OR SU.EXACT("Child abuse") OR SU.EXACT("Sexually abused disabled children") OR SU.EXACT("Abused children") OR SU.EXACT("Child sexual abuse") OR SU.EXACT("Childhood sexual abuse") OR SU.EXACT("Sexually abused preschool children") OR SU.EXACT("Childhood psychological abuse") OR SU.EXACT("Ritual child abuse") OR SU.EXACT("Child welfare") OR SU.EXACT("Kinship foster care") OR SU.EXACT("Kinship foster carers") OR SU.EXACT("Temporary foster care") OR SU.EXACT("Foster care") OR SU.EXACT("Long term foster care")) OR (TI ("child abuse" or "child maltreatment" or neglect or "domestic violence" or "child welfare" or "foster care" or "kinship care" or "out of home care" or "out of home placement" or "looked after child" or "looked after young" or child protective service* or physical abuse*) OR AB ("child abuse" or "child maltreatment" or neglect or "domestic violence" or "child welfare" or "foster care" or "kinship care" or "out of home care" or "out of home placement" or "looked after child" or "looked after young" or child protective service* or physical abuse*))	Applied Social Sciences Index & Abstracts (ASSIA)	8,868°

WHO's Global Index Medicus

(child abuse) OR (child maltreatment) OR (Child neglect) OR (domestic violence) OR (child welfare) OR (foster care) OR (kinship care) OR (out of home care) OR (out of home placement) OR (looked after child) OR (looked after young) OR (child protective services) OR (physical abuse)

- LILACs: 62 CCTs, 32 cohort studies
- IMSEAR (SEARO): 0 CCTs, 0 cohort studies
- WHOLIS (KMS): 5 CCTs, 1 cohort studies
- IMEMR (EMRO): 4 CCTs, 2 cohort studies
- WPRIM (WPRO): 1 CCTs, 2 cohort study
- AIM (AFRO): 0 CCTs, 0 cohort studies

Appendix II: Elements of the Risk of Bias Assessment

Elements that comprised the risk of bias (ROB) assessment, which led to a low (L), unclear (U), or high (H) risk of bias**		
ROB component and definition	Rating	Explanation of what informed rating
7. Sequence generation [Selection bias (biased allocation to interventions) due to inadequate generation of a randomized sequence.]	L	Explicit mention of a random component e.g., random number table, computer random number generator, coin tossing, shuffling cards or envelopes, throwing dice, drawing lots, minimization with or without random element
	U	Authors indicate participants were randomized but do not say how; block or stratified randomization is rated unclear unless the authors also explicitly state that the sequence was computer generated; authors do not mention randomization; insufficient information to permit judgement
	H	Explicit mention of a non-random, systematic, or judgement-based approach e.g., day/date of birth or admission, patient/clinic record number, clinician judgement, participant preference, lab test results, availability of intervention
8. Blinding of patients/ participants and providers / personnel [Selection bias (biased allocation to interventions) due to inadequate concealment of allocations prior to assignment.]	L	No/incomplete blinding but outcome not likely to be affected by lack of blinding OR blinding ensured and unlikely could have been broken
	U	Insufficient information to permit judgement; authors are silent on blinding; authors indicate there was "double blinding" but do not specify which parties were blinded
	H	No/incomplete blinding OR blinding attempted and likely broken and either way the outcome likely to be influenced by lack of blinding
9. Blinding of outcome assessment [Performance bias due to knowledge of the allocated interventions by participants and/or personnel during the study.]	L	No/incomplete blinding but outcome assessment not likely to be affected by lack of blinding OR blinding ensured and unlikely could have been broken
	U	Insufficient information to permit judgement; authors are silent on blinding; authors indicate there was "double blinding" but do not specify which parties were blinded
	H	No/incomplete blinding OR blinding attempted and likely broken and either way the outcome assessment likely to be influenced by lack of blinding
10. Incomplete outcome data [Attrition bias due to amount, nature or handling of incomplete outcome data.]	L	No missing data; drop out rates $\leq 10\%$; drop out rates $>10\%$ but $\leq 30\%$ AND reasons are acceptable and not connected to the intervention AND there is no imbalance in rates/reasons between groups; reasons for missing data unlikely related to the intervention; missing data balanced in numbers across groups with similar reasons; missing data have been appropriately imputed
	U	Insufficient reporting of attrition/exclusions to permit judgement e.g., data tables do not suggest whether there were dropouts or not, number randomized not stated, no reasons for missing data provided
	H	Dropout rates $>10\%$ AND reasons are connected to the intervention OR there is an imbalance in the rates/reasons between groups OR no reasons are given; "as-treated" analysis done with substantial departure of the

		intervention received from that assigned at randomization; potentially inappropriate application of simple imputation
11. Selective reporting [Reporting bias due to selective outcome reporting.]	L	Outcome appears in both methods and results; protocol available and all pre-specified outcomes are reported in pre-specified way or protocol not available but clear the published reports include all expected outcomes
	U	Outcome not mentioned in methods but appears in the results; insufficient information to permit judgement
	H	Outcome is mentioned in methods but does not appear in results; some pre-specified primary outcomes not reported, 1+ outcomes reported using measurements, analysis methods or subsets of data not pre-specified, 1+ outcomes not pre-specified and no clear justification for reporting, 1+ outcomes reported incompletely and cannot be meta-analyzed, no results for key outcome
12. "Other bias" [Bias due to problems not covered elsewhere in the table; significant baseline imbalance in study groups on important characteristics; contamination; industry funding]	L	The study appears to be free of other sources of bias OR if industry sponsored and there is an explicit statement the industry had no involvement other than funding
	U	Industry sponsored/funded but no explicit details about other involvement; may be risk of bias but there is either insufficient information to assess whether important risk exists or insufficient rational or evidence that identified problem will introduce bias
	H	At least one important risk of bias e.g., related to specific study design used, fraudulent claims, sampling/recruitment bias, validity/reliability of measures not good, industry involvement beyond funding, extreme baseline imbalance, etc
*For each category, verbatim quotes, summary of known facts, reviewer comments, page number was copied. Otherwise, staff wrote "probably done," "probably not done," or included a explicit statement if no information was available to inform a judgement **Modified from the Cochrane Risk of Bias Tool ⁵³		

Appendix III: Participant and study characteristics

Counseling/therapy interventions for children exposed to maltreatment							
Study ID / RefID	Maltreatment type	Intervention (n at baseline)	Comparison (n at baseline)	Intervention delivered by	Child mean age (Age range of inclusion criteria)	Participant gender	Country (Income Level, World Bank)
D) Child maltreatment							
Brown 2001 ³² / RefID 24	CM 36.8-45.8% - PA 38.3-60.4% - SA 46.9-76.5% EA	(n=1108 total) Project Chrysalis (n=not stated)	Control group (n=not stated)	School counselors, therapists; education level not stated	15.13-15.44 (14-18) years	100% adolescent girls	U.S.
Cicchetti 2006 ²² / RefID 213 Stronach 2013 ⁵⁴ / RefID 6972	84.6% N 69.2% EA 8.8% PA	Infant-parent psychotherapy (IPP) (n=32) Psychoeducational parenting intervention (PPI) (n=24) Community controls (CS) (n=81)	Normative comparison (n=52)	IPP/PPI – master's level therapists CC – not stated	13.31 months	53.4% girls 46.6% boys	U.S. (High)
Toth 2002 ¹⁹ / RefID 252	24% N/EA 21% N 18% PA/N/EA 14% EA 10% PA/EA 5% PA 5% PA/N 1% SA/PA/N/EA 1% SA/N/EA 1% SA/N	Preschooler-parent psychotherapy (PPP) (n=23) Psychoeducational home visitation (PHV) (n=34) Community standard (n=30)	Normative control (n=35)	Master's level therapists	PPP – 48 months PHV – 47.86 months CS – 49.16 months NC – 47.77 months	55.7% boys 44.3% girls	U.S. (High)
Meezan 1998	66% - PA 29.1% - severe N	Multifamily group therapy (MFGT)	Traditional family group therapy	Not stated	(2-11) years	Not stated	U.S. (High)

³⁷ / Refid 6976	24.1% - general N 24.1% - EA 10% - SA	(n=42)	(n=39)				
Shirk 2014 ³⁸ / Refid 6975	67% SA 58% CE-IPV 49% PA 47% EA	CBT (n=20)	Usual care (n=23)	Master's and doctoral level psychologists	CBT - 15.25 years Usual care – 15.69 years	CBT - 85% adolescent girls, 15% adolescent boys Usual care - 82.61% adolescent girls, 17.39 adolescent boys	U.S. (High)
Reams 1994 ²⁰ / Refid 6973	Play therapy: 48% EA 64% EN 44% PA 53% PN 24% SA	Play therapy (n=26)	Control (n=15)	12 therapists: all had bachelor's degree in education, psychology or nursing, 8 had a master's degree	Play therapy – 4.13 years Control – 4.17 years (3.5-5) years	Play therapy – 80% boys, 20% girls Control – 66.7% boys, 33.3% girls	U.S. (High)
E) Physical abuse & Neglect							
Runyon 2010 ³⁹ / RefID 246	PA	Combined Parent-Child Cognitive Behavioral Therapy (CPC-CBT) (n=34 c & n=24 p)	Parent-only CBT (n=26 c & 20 p)	Not stated	9.88 (7-13) years	CPC-CBT: 56% boys, 44% girls P-CBT: 50% girls, 50% boys	U.S. (High)
Kolko 1996b ⁴⁰ / RefID 5278	PA	Individual child or parent CBT (n=21) Family therapy (FT) (n=17)	Routine community services (RCS) (n=12)	5 with master's degree in social work or psychology, 1 with BA and 16 years of experience	8.6 (6-13) years	72.3% boys 27.7% girls	U.S. (High)
Nicol 1988 ³¹ / RefID 2053	PA	(n=38 families) Play therapy (n=not stated)	Focused case work (n=not stated)	Play therapy: Clinical psychologist Focused case work: social worker	4.8 (0-14) years	Not stated	UK (High)

Damra 2014 ⁴¹ / RefID 6725	PA	CBT with trauma-focus (n=9)	Wait list? (n=9) (received treatment after study completed)	Experts in psychotherapy and counseling	11.3 (10-12) years	100% boys	Jordan (Upper middle)
LeSure-Lester 2002 ⁴² / RefID 5198	PA & N	Cognitive behavioral training (n=6)	Active listening (n=6)	Psychologist	13.16 (12-16) years	100% adolescent boys	U.S. (High)
F) Neglect-specific therapies							
Jacobson 2014 ⁴³	N	Dyadic music therapy (n=10 child-parent dyads)	Treatment as usual (n=9 child-parent dyads)	Trained music therapists	DMT – 6.78 years TAU – 8.44 years (5-12) years	DMT – 56.6% girls, 44.4% boys TAU – 56.6% girls, 44.4% boys	Denmark (High)

Parenting interventions, clinic- or community							
Study ID	Maltreatment type	Intervention (n at baseline)	Comparison (n at baseline)	Intervention delivered by	Child mean age (Age range of inclusion criteria)	Participant gender	Country (Income Level, World Bank)
Child maltreatment							
Thomas 2012 ⁴⁵ / RefID 1904	CM	Standard Parent child interaction therapy (SPCIT) (n=61)	Wait list (n=91)	Masters and doctoral psychologists trained in PCIT	4.57 years	70.4% boys 29.6% girls	Australia (High)
Thomas 2011 ⁴⁴ / RefID 183	CM	Parent child interaction therapy (PCIT) (n=99)	Wait list (n=51)	PCIT trained psychologists	5 years	71% boys 29% girls	Australia (High)
Egan 1983 ³³ / Refid 6970	CM	Stress management (n=11) Child management (n=11) Stress/child management (n=9)	Treatment as usual or wait list (n=10)	Not stated	(2-12) years	Not stated	U.S. (High)
Physical abuse & neglect							

Chaffin 2004 ⁴⁶ / RefID 210	PA	PCIT only (n=102) Enhanced PCIT (n=?)	Community control (n=114)	Master's level therapists	(4-12) years	Not stated	U.S. (High)
Chaffin 2009 ⁴⁷ / Ref ID 211 Chaffin 2011 ⁵⁵ / Ref ID 208	PA & N	Motivational orientation + PCIT (n=34) Standard orientation + PCIT (n=36)	Standard orientation + parenting group (n=42) Motivational orientation + parenting group (n=n=41)	Master's level therapists	(2.5-12) years	Not stated	U.S. (High)
Neglect-specific							
Saldana 2015 ⁴⁸ / RefID 1333	N & substance abuse	Families Actively Improving Relationships Program (FAIR) (n=18)	TAU (n=13)	Counselors, skills coaches, resource builder, clinical supervisor	Not stated	Not stated	U.S. (High)

Parenting interventions, home-based							
Study ID / RefID	Maltreatment type	Intervention (n at baseline)	Comparison (n at baseline)	Intervention delivered by	Child mean age (Age range of inclusion criteria)	Participant gender	Country (Income Level, World Bank)
Chaffin 2012 ²⁹ / Refid 209 Chaffin 2012 ⁵⁶ / RefID 1909	CM N, PA, SA	Safe Care/Coached (n=25% of cases) Safe Care/Uncoached (28% of cases)	Services as usual/Coached (n=24% of cases) Services as usual/Uncoached (23% cases)	Home visitors were trained, but education level not stated	N/A – participants adults	N/A – participants adults Inclusion criteria are for preschool aged children in home	U.S. (High)
Spieker 2012 ²⁵ / RefID 1902 Oxford 2013 ⁵⁷ / RefID 2735 Oxford 2016 ⁵⁸ / RefID 2408	CM	Promoting first relationships (PFR) (n=105)	Early education support (EES) (n=105)	PFR - Master's level home providers Bachelor's level community providers	18.01 (10-24) months	56% boys, 44% girls	U.S. (High)

Pasalich 2016 ⁵⁹ / Refid 6971							
Moss 2011 ⁴⁹ / RefID 243	CM N – 72% PA – 7% SA – 3% N/PA – 16% N/SA – 2%	Standard agency services + attachment oriented home visits (n=35)	Standard agency services (n=33)	Varied: 3 had bachelor level degrees in psychology, one had master's degree.	3.35 years (12-71 months)	61.2% boys 38.8% girls	Canada (High)
Toth 2002 ¹⁹ / RefID 252	24% N/EA 21% N 18% PA/N/EA 14% EA 10% PA/EA 5% PA/N 5% PA/N 1% SA/PA/N / EA 1% SA/N/EA 1% SA/N	Psychoeducational home visitation (PHV) (n=34) Preschooler-parent psychotherapy (PPP) (n=23)	Normative control (n=35) Community standard (n=30)	Master's level therapists	PPP – 48 months PHV – 47.86 months CS – 49.16 months NC – 47.77 months	55.7% boys 44.3% girls	U.S. (High)
Cicchetti 2006 ²² / RefID 213 Stronach 2013 ⁵⁴ / Refid 1663	84.6% N 69.2% EA 8% PA	Psychoeducational parenting intervention (PPI) (n=24) Infant-parent psychotherapy (IPP) (n=34)	Normative comparison (n=52) Community controls (CS) (n=81)	IPP/PPI – master's level therapists CC – not stated	13.31 months	53.4% girls 46.6% boys	U.S. (High)
Brunk 1987 ³⁰ / RefID 6001	CM PA EA N	Multisystemic therapy (MST) (n=16)	Parent training (n=17)	Master's level psychologists	MST children with N – 9.8 years Children in other groups – 6.8 years	55% boys 45% girls	U.S. (High)
Physical abuse & neglect							
MacMillan 2005 ¹⁷ / RefID 237	PA N	Standard care + home visitation by a public-health	Standard care (n=74)	Public health nurse	Intervention – 5.1 years Control –	Intervention – 42% boys 58% girls	Canada (High)

		nurse (n=89)			5.2 years	Control – 61% boys 39% girls	
Swenson 2010 ²⁸ / RefID 179	PA	Multisystemic therapy for child abuse and neglect (MST- CAN) (n=44)	Enhanced outpatient treatment (EOT) (n=42)		13.88 (10- 17) years	55.8% adolescen t girls 44.2% adolescen t boys	U.S. (High)
Jouriles 2010 ⁵⁰ / RefID 4148	PA & N PA – 63% N – 25% PA, N – 12%	Project Support (PS) (n=17)	Treatment as usual (TAU) (n=18)	PS - Master's- level licensed mental health providers and one or more undergradu ate or post- undergradu ate student	5.4 (3-8) years	Not stated	U.S. (High)
Mast 2014 ⁵¹ / RefID 1565	PA (abusive head trauma)	Internet-based Interacting Together Everyday: Recovery After Childhood TBI (InTERACT) (n=4 families)	Internet Resource Comparison (IRC) (n=3 families)	Master's level research personnel	(3-9) years	Not stated	U.S. (High)
Neglect-specific							
Bernard 2015 ³⁴ / Refid 3026 Companion paper: Lind 2014 ⁶⁰ / Ref ID 1572	N (allegati on, not substant iated)	Attachment and biobehavioral catchup (ABC) (n=19)	Development education for families (DEF) (n=21) Low-risk comparison (LRC) (n=30)	Trained parent coaches	ABC – 4.94 (4.12- 6.13) DEF – 4.83 (3.99- 6.20)	ABC: 74% boys 26% girls DEF: 62% boys 38% girls LRC: 37% boys 63% girls	U.S. (High)

Child-focused skills development							
Study ID	Maltreatment type	Intervention (n at baseline)	Comparison (n at baseline)	Intervention delivered by	Child mean age (Age range of inclusion criteria)	Participant gender	Country (Income Level, World Bank)
Fantuzzo 1996 ²³ / RefID 4753	PA & N PA – 15%	Resilient peer treatment (RPT) (n=10)	Attention control (AC) (n=10)	Parent volunteers support play	4.46 (3.80- 5.10) years	58.7% girls 44.2% boys	U.S. (High)

	Physical N – 23.9% PA & Physical N – 8.7%			between "resilient peer" and target child			
Fantuzzo 1988 ⁵² / RefID 6966	PA & N – 46.2% PA – 23.1%	Peer initiation (n=12) Adult initiation (n=12)	Control (n=12)	Play supported by a "peer confederate" or teacher's aide	4.3 (3.1-5.3) years	71.8% boys, 28.2% girls	U.S. (High)

Appendix IV: Risk of bias tables

Risk of Bias for Psychotherapeutic Studies								
Risk of Bias for Parenting Interventions								
Author year	Sequence Generation	Allocation Concealment	Blinding of Participants/ Providers	Blinding of Outcome Assessment	Incomplete Outcomes	Selective Reporting	Other Bias	Overall rating
C) Clinic or community-based								
Child maltreatment								
Cicchetti, 2006 {#213} Companion paper: Stronach, 2013 {#6972}	U	U	U	L	H	L	L	U
Thomas, 2012 {#1904}	U	U	U	U	H	L	L	U
Thomas, 2011 {#183}	U	U	U	U	L	L	L	U
Egan, 1983 {#6970}	U	U	U	L	U	L	L	U
Physical abuse & neglect								
Chaffin, 2004 {#210}	U	U	U	L	L	L	L	U
Chaffin, 2011 {#208}; Chaffin, 2009 {#211}	U	U	U	L	L	L	L	U
Saldana, 2015 {#1333}	U	U	U	U	H	L	L	U
D) Home-based								
Chaffin, 2012 {#209}, Companion paper Chaffin, 2012 {#1909}	U	U	U	U	L	L	L	U
Spieker, 2012 {#1902} Companion papers: Oxford, 2013 {#2735}; Pasalich,	L	U	U	L	L	L	L	U

2016 {#6971}; Oxford, 2016 {#2408}								
Moss, 2011 {#243}	U	U	U	L	L	L	L	U
Toth, 2002 {252}	U	U	U	L	H	L	U	U
Cicchetti, 2006 {#213} Companion paper: Stronach, 2013 {#6972}	U	U	U	L	H	L	L	U
Brunk, 1987 {#6001}	U	U	U	L	L	H	H	U
Physical abuse & neglect								
MacMillan, 2005 {#237}	L	L	U	L	L	L	L	L
Swenson, 2010 {#179}	L	L	H	U	L	L	L	U
Jouriles, 2010 {#4148}	L	U	H	H	L	L	L	U
Mast, 2014 {#1565}	U	U	U	U	L	L	L	U
Neglect-specific								
Bernard, 2015 {#3026} Companion papers: Bernard, 2015 {#1465}; Lind, 2014 {#1572}	U	U	L	L	U	L	L	U
U=Uncertain risk of bias; H=High risk of bias; L=low risk of bias								

Risk of Bias for Child-focused Skills Development Studies								
Author, year	Sequence Generation	Allocation Concealment	Blinding of Participants/ Providers	Blinding of Outcome Assessment	Incomplete Outcomes	Selective Reporting	Other Bias	Overall
Physical abuse & neglect								

Fantuzzo, 1996 {#4753}	U	U	U	U	L	L	L	U
Fantuzzo, 1988 {#6966}	U	U	U	U	U	L	L	U
U=Uncertain risk of bias; H=High risk of bias; L=low risk of bias								

Appendix V

Wrong population (n=163)

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Wrong intervention target (n=108)

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Wrong study design (n=141)

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Wrong outcomes (n=36)

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Web Annex 3c: EtD Table – Psychosocial interventions for children exposed to maltreatment

WHO Child Maltreatment (CM) Evidence to Decision Framework

Scoping Question: Do psychosocial interventions (I) for children who have been exposed to child maltreatment (physical abuse, neglect, emotional abuse) (P) as compared to any or no other intervention (C) improve child well-being (O)?

Population: Children (0 – 17) exposed to any form of child maltreatment (physical abuse, neglect, emotional abuse).

Intervention: Any psychosocial intervention to help children exposed to child maltreatment

Comparison: Any intervention or no intervention

Main outcomes: 1. Depressive symptoms, 2. PTSD symptoms, 3. Positive caregiver-child interaction, 4. Internalizing symptoms, 5. Child subjective well-being, 6. Anxiety symptoms, and 7. Externalizing disorders. (Note: Information about recurrence is also available to consider)

Setting: Any healthcare or social service setting

Perspective: Global context

Background: Child maltreatment is a major global public health problem, with many physical, emotional, and relationship consequences across the lifespan, such as injury and attachment disorders beginning in infancy, academic failure and poor peer relationships in childhood, substance abuse in adolescence, relationship problems and maltreatment of one's own children in adulthood, and mental health symptoms and disorders across childhood, adolescence, and adulthood.¹⁻⁵

The Oxford English Dictionary defines the term “psychosocial” as “of or relating to the interrelation of social factors and individual thought and behaviour” (1). In research literature, “psychosocial intervention” is rarely defined, but is often used to refer to non-pharmacological interventions, such as psychoeducation, psychotherapy, counseling, and eye-movement desensitization and reprocessing (EMDR) therapy.

	Criteria	Judgement	Research evidence	Additional considerations
Problem	Is the problem a priority?	☐ No ☐ Probably no ☐ Probably yes ☒ Yes ☐ Varies ☐ Don't know	Official statistics seriously underestimate the occurrence of CM; self-reports are considered more accurate, but are still likely low. Global estimates of child maltreatment indicate that a significant proportion of adults have experience child maltreatment as a child, including childhood physical abuse (22.6%), emotional abuse (36.3%), neglect (16.3%), and sexual abuse (18% of women and 7.6% of men). ⁶⁻⁸ Furthermore, these forms of violence are often co-occurring, ⁹ which can increase children's risk for impairment. ¹⁰⁻¹²	

Values	Is there important uncertainty about or variability in how much people value the main outcomes?	☐ Important uncertainty or variability	In June 2016, the WHO Child Maltreatment Guideline Development Group (GDG) ranked outcomes on a scale of 0-9, where 1-3 represent ‘unimportant’ outcomes; 4-6 represent ‘important, but not critical’ outcomes and 7-9 represent ‘critical’ outcomes for decision-making. Below are the top 7 ranked outcomes, for which data was extracted about from the included articles																
		☒ Possibly important uncertainty or variability																	
		☒ Probably no important uncertainty or variability																	
		☐ No important uncertainty or variability																	
		☐ No known undesirable outcomes	The relative importance or values of the main outcomes of interest: <table><thead><tr><th>Outcome</th><th>WHO relative importance</th></tr></thead><tbody><tr><td>1. Child depression</td><td>ESSENTIAL (M= 7.92)</td></tr><tr><td>2. Child PTSD</td><td>ESSENTIAL (M=7.84)</td></tr><tr><td>3. Positive caregiver-child interaction</td><td>ESSENTIAL (M=7.78)</td></tr><tr><td>4. Child internalizing symptoms</td><td>ESSENTIAL (M=7.69)</td></tr><tr><td>5. Child subjective well-being</td><td>ESSENTIAL (M=7.61)</td></tr><tr><td>6. Child anxiety</td><td>ESSENTIAL (M=7.61)</td></tr><tr><td>7. Child externalizing symptoms</td><td>ESSENTIAL (M=7.53)</td></tr></tbody></table> A recent Health Technology Assessment (HTA) report conducted by MacDonald et al.¹³ summarized information about effectiveness, acceptability and cost-effectiveness of psychosocial interventions for maltreated children and adolescents.¹³ To supplement this review the authors conducted advisory sessions with youth (7 youth ages 16-24 years for the first meeting; 7 youth under 18 years for the second meeting; and a group of 6 young people ages 15-19 to help interpret the findings of the review). The findings of these advisory session suggest that children and youth value the outcomes below: • learn skills to handle life’s ups and downs • understand what being ‘treated badly’ is, and learning to recognise when things are not OK • learn ways to keep themselves safe (e.g. knowing when to report something and to whom to report it) • feel safe • ‘bounce back’ if things in their life go wrong	Outcome	WHO relative importance	1. Child depression	ESSENTIAL (M= 7.92)	2. Child PTSD	ESSENTIAL (M=7.84)	3. Positive caregiver-child interaction	ESSENTIAL (M=7.78)	4. Child internalizing symptoms	ESSENTIAL (M=7.69)	5. Child subjective well-being	ESSENTIAL (M=7.61)	6. Child anxiety	ESSENTIAL (M=7.61)	7. Child externalizing symptoms	ESSENTIAL (M=7.53)
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6. Child anxiety	ESSENTIAL (M=7.61)																		
7. Child externalizing symptoms	ESSENTIAL (M=7.53)																		

Desirable Effects	How substantial are the desirable anticipated effects?	☐ Trivial ☒ Small ☐ Moderate ☐ Large ☐ Varies ☐ Don't know	See a more complete summary below this EtD table. - We have very low certainty in most of the evidence included in this review, due to serious concerns for risk or bias and very serious concerns for imprecision. Only the SafeCare trial and some aspects of parent-child interaction therapy (PCIT) were rated as moderate certainty evidence. Counseling/therapy interventions. For children exposed to maltreatment (physical abuse, neglect, emotional abuse), we have very low certainty that preschooler-parent psychotherapy (PPT) may enable an increase in positive parent-child interaction. Aside from this finding, there is little evidence of effectiveness for counseling/therapy interventions for children exposed to maltreatment, in that the interventions reduce negative mental health outcomes. For children exposed to physical abuse and neglect, we have very low certainty that individual parent and child cognitive behavioural therapy may enable small benefits in recurrence rates and may enable small reductions in internalizing and externalizing symptoms. Other than this finding, counseling/therapy interventions for children exposed to physical abuse and neglect show limited or mixed results. Given the limited number of studies that exist for the sub-population of children exposed to maltreatment that present with a particular mental health problem, the GDG decided to draw upon the broader mental health literature to come up with recommendations. GRADE tables on conditions related to stress are available under the following link: https://bit.ly/2yUldSZ. GRADE tables that assess interventions for children with behavioural disorders are available under the following link: https://bit.ly/33hldKv. GRADE tables that assess interventions for children with emotional disorders are available under the following link: https://bit.ly/2KCOyla.	
Undesirable Effects	How substantial are the undesirable anticipated effects?	☐ Large ☐ Moderate ☐ Small ☐ Trivial ☐ Varies ☒ Don't know	Parenting interventions, clinic or community setting. We have very limited evidence in the effectiveness of parenting interventions delivered in a clinic- or community setting, with the exception of parent-child interaction therapy for physical abuse and neglect. For parent-child interaction therapy, we have moderate certainty evidence that it enables small benefits to internalizing and externalizing symptoms at post-treatment, and low certainty evidence that it enables small reductions in recurrence rates and small to large increases in positive parent-child interaction (e.g., small increase in general positive parent behaviour,	

Certainty of evidence	What is the overall certainty of the evidence of effects?	☐ Very low ☒ Low ☐ Moderate ☐ High ☐ No included studies	large decrease in general negative parent behaviour, large increase in praise, reduction in parent's use of commands). Parenting interventions, home-based. For parenting interventions delivered in a home setting, we have moderate certainty evidence that SafeCare enables small reductions in recurrence rates for preschool children exposed to maltreatment, low certainty evidence that home visiting with a public health nurse may enable small reductions in recurrence rates for children (average age of 5 years) exposed to physical abuse and neglect, and very low certainty evidence that multisystemic therapy may enable small reductions in recurrence for children (ages 10-17) exposed to physical abuse, and that Project Support may enable small reductions in recurrence rates for children (ages 3-8) exposed to physical abuse and neglect. Other than this, evidence for the effectiveness of parenting interventions delivered in a home setting for children exposed to maltreatment is limited, especially showing limited benefits to mental health symptoms. Child-focused skill development. We have very low certainty evidence that child-focused skill development interventions may enable reductions in internalizing and externalizing symptoms and behaviour problems at post-treatment Most of the studies did not report information about caregiver-child interaction or child subjective well-being. We found no reports of adverse effects. For a more detailed summary, please see the corresponding review chapter and GRADE tables.	
Balance of effects	Does the balance between desirable and undesirable effects favor the intervention or the comparison?	☐ Favors the comparison ☐ Probably favors the comparison ☐ Does not favor either the intervention or the comparison ☒ Probably favors the intervention ☐ Favors the intervention ☐ Varies ☐ Don't know	None of the studies considered negative undesirable effects or harms that can be caused by the intervention. The GDG raised the issue that therapeutic interventions delivered in group settings, might in certain circumstances cause undesirable effects for children exposed to abuse and/or neglect.	

Resources required	How large are the resource requirements (costs)?	☐ Large costs ☐ Moderate costs ☐ Negligible costs and savings ☐ Moderate savings ☐ Large savings ☒ Varies ☐ Don't know	Only a few studies provide data on resource requirements and costs. None of these studies measure costs in low and middle income countries. Counseling/therapy: - No economic evaluations of counseling/therapy interventions provided for children who have experienced physical abuse, neglect, or emotional abuse were found. - Directed at children exposed to sexual abuse, and based on 2010-2011 Australian dollars (\$) for a 12-month period, the total cost for non-directive counseling is \$20,740 and for trauma-focused cognitive behavioral therapy (TF-CBT) is \$20,511.¹⁴ Parenting, clinic or community - One study¹⁵ was found that evaluated the cost of parent-child interaction therapy (PCIT) for children with disruptive behaviour disorders (i.e., not assessing children exposed to maltreatment). It was found that start-up costs of PCIT, including equipment and training were \$14,063.79 in 2007 U.S. dollars and the average cost of providing PCIT from intake to termination was estimated was \$1,000/client for 10-12 sessions of treatment. Parenting, home-based - No studies evaluating parenting interventions in a home setting were found for children exposed to maltreatment. However, a systematic review of cost-effectiveness studies for home visiting programs that aim to prevent maltreatment (i.e., mostly studies outside of the scope of this review) extracted program components of different home visiting programs and applied Australian 2010 units costs.¹⁶ The authors of this systematic review found that program costs varied dramatically depending on the program components and intensity (\$1800-\$30,000 per family in 2010 Australian dollars).¹⁶ Child-focused skills development - While no research was found about costs of child focused skills development programs, there are anecdotal reports that peer support style interventions represent low cost interventions.¹⁷ - While peer support may be a low cost option, it is important to recognize the 'hidden' costs of peer support programs, including costs associated with programs offered through health/social services (e.g., staff, facilities etc.) and with providing continued support to peer supports. In addition, costs for individuals to access this intervention must also be considered (e.g., transportation and child care). From broader mental health research (Bolton et al.), we know that psychosocial interventions can be delivered at lower intensity and lower cost in settings with limited

			resources, with similar treatment effects. Therefore the GDG assumed that the costs will vary, depending on the setting.	
Certainty of evidence of required resources	What is the certainty of the evidence of resource requirements (costs)?	Very low ☒ Low ☐ Moderate ☐ High ☐ No included studies	As highlighted above, there is not enough information available on the cost of psychosocial interventions for children exposed to maltreatment.	
Cost effectiveness	Does the cost-effectiveness of the intervention favor the intervention or the comparison?	☐ Favors the comparison ☐ Probably favors the comparison ☐ Does not favor either the intervention or the comparison ☐ Probably favors the intervention ☐ Favors the intervention ☒ Varies ☐ No included studies	<i>Counseling/therapy</i> - Overall, one Australian cost utility analysis study and cost effectiveness data reported in one UK HTA report¹³ study suggests that counseling/therapy interventions are cost-effective, but that specific interventions – such as TF-CBT – may not be more cost-effective than other forms of counseling/therapy interventions after 12 months. <i>Parenting, clinic or community</i> - One study assessing PCIT for children with disruptive behaviour disorders¹⁵ suggests in order to achieve the smallest measurable change in behaviour, costs ranged from 22.07-100.56 U.S. dollars per child, depending on the assessment used (i.e., Child Behavior Checklist vs. Eyberg Child Behavior Inventory). The authors argue in their discussion that PCIT is a cost effective treatment compared to estimated costs this population incurs without treatment and that the benefits go beyond the financial domain and into decreases undesirable behaviours. <i>Parenting, home-based</i> - For the systematic review about preventative home-visiting programs, the authors note that “the most cost-effective programs were targeted at higher risk families [which] is not surprising. Home visiting is an expensive service, with some programs reporting that visitors may see only two to four families per day. Such a high cost program is unlikely to represent a worthwhile investment from a societal perspective unless there is commensurate opportunity for a high level of benefit for each family visited”.¹⁶ <i>Child-focused skills development</i> - No information about the cost-effectiveness of child-focused skills development programs was found.	

Equity	What would be the impact on health equity? ☐ Reduced ☐ Probably reduced ☐ Probably no impact ☒ Probably increased ☐ Increased ☐ Varies ☐ Don't know	1. Very little research was found regarding avoidable or unjust differences in access to mental health services (i.e., inequity) for children exposed to child maltreatment in HICs or LMICs. 2. Child maltreatment is strongly associated with poverty. Children that suffer maltreatment often have negative school outcomes and limited chances to find employment. Therefore interventions reducing the negative impact of child maltreatment will contribute to increase equity. 3. Some research suggests that children in the juvenile justice system with abuse histories lack access to general health care,¹⁸ that foster children of racial and ethnic minorities have less access to care,¹⁹ and that a significant proportion of children in contact with child welfare services are receiving inadequate access to services.^{20,21} It is also important to note that given that parents advocate for their children to receive mental health services, when the parents are abusive and/or neglectful, they are less likely to advocate for their children's needs, so there is an issue of equity in these situations. 4. Psychosocial interventions may contribute to the realization of human rights when they are provided in a culturally appropriate, accessible, and sustainable manner.	

Acceptability	Is the intervention acceptable to key stakeholders?	☐ No ☐ Probably no ☒ Probably yes ☐ Yes ☐ Varies ☐ Don't know	4. Very little research has been carried out that examines the acceptability of psychosocial interventions,¹³ especially in LMICs. Research about acceptability of psychosocial interventions in LMICs has tended to focus on adult patients.³⁵ 5. In HICs, counseling/therapy interventions,³⁶ parenting interventions,^{37–41} and child-focused peer interventions¹³ appear to be well accepted by children exposed to maltreatment, although children may have some difficulty in articulating how they feel about therapy and what they find most or least useful.³⁶ a. Some children felt that the shared experience of a group experience made talking easier and they liked attending in a group setting.^{42,43} However, research from the perspective of children exposed to IPV suggest that children may experience additional trauma or discomfort in group settings when they become aware of additional violence exposures they had not experienced.⁴⁴ b. In terms of counselling/therapy, parents liked that children had a neutral person to talk to and that therapy provided a clear set of expectations within a supportive environment.^{36,43} c. Factors that have been found to impact engagement/acceptability with psychosocial interventions include ethnicity,^{45,46} age of the child's parents,^{47,48} whether caregivers are kin or non-kin,⁴⁹ intervention location,⁴⁵ characteristics of the person delivering the intervention,^{37–39} and fears of being reported/losing children if the person delivering the intervention is a mandated reporter.^{37–39} d. Research suggests that providers find delivering psychosocial interventions acceptable, depending on their level of support. However, providers may also fear working with children exposed to maltreatment due to lack of support from colleagues or their institution (including fears of being involved with court proceedings) and lack of knowledge about how to identify and respond to maltreatment.⁵⁰ 6. In LMICs, psychosocial interventions may be acceptable if local providers are involved in the selection of appropriate interventions and the modification of these interventions so they are culturally appropriate (see feasibility section).^{51,52}	

Feasibility	Is the intervention feasible to implement?	☐ No ☐ Probably no ☒ Probably yes ☐ Yes ☐ Varies ☐ Don't know	1. Research suggests^{53,54} that major barriers to implementation of psychosocial interventions in LMICs include: a. lack of skilled personnel to carry out intervention; b. lack of cultural acceptability of components of the intervention; c. cost for families to receive intervention (e.g. time away from work, and financial, in terms cost of traveling to appointment). 2. However it is possible to address these barriers through, for example: a. training lay personnel to carry out evidence-based psychosocial interventions may be a feasible solution to lack of skilled personnel^{51,52}; b. modifying existing evidence-based, psychosocial interventions so they are culturally acceptable^{53,55}; c. reducing psychological jargon and delivering interventions in a way that includes considerations of family's beliefs systems and context, legal and social factors	

Should psychosocial interventions be recommended for children exposed to maltreatment?					
Conclusions	Strong recommendation against the intervention	Conditional recommendation against the intervention	Conditional recommendation for either the intervention or the comparison	Conditional recommendation for the intervention	Strong recommendation for the intervention
Type of recommendation	☐	☐	☐	☒	☐

Recommendation	R5 (existing) Psychological debriefing should not be used in an attempt to reduce the risk of post-traumatic stress, anxiety or depressive symptoms (very low/strong). R6 (adapted from existing) Cognitive behavioural therapy (CBT) including with a trauma focus should be considered for children and adolescents who have been exposed to maltreatment and are diagnosed with PTSD (very low/conditional). R7 (adapted from existing) Evidence-based psychological interventions, such as cognitive behavioural therapy (CBT) and interpersonal psychotherapy (IPT), may be offered to children and adolescents who have been exposed to maltreatment and are experiencing emotional disorders, and caregiver-skills training to their non-offending caregivers (low/conditional). R8 (adapted from existing) Evidence-based psychological interventions, such as CBT, may be offered to children and adolescents who have been exposed to maltreatment and are experiencing behavioural disorders (low/conditional). R9 (new) Caregiver interventions that promote nurturing caregiver-child relationships, including through improved communication skills and direct coaching of parents while they are interacting with their children, may be considered (very low/conditional). R10 (adapted from existing) Pharmacological interventions should not be considered in children and adolescents exposed to child maltreatment with anxiety disorders, depressive episodes/disorders or behavioural disorders in non-specialist settings (low/conditional).

Justification	In the formulation of the recommendation, the GDG considered: 1. that adverse mental health consequences are an important consideration for children exposed to maltreatment. 2. That there are more commonalities in children who suffer a particular mental disorder e.g. PTSD as compared to children who suffered child maltreatment, who could face various mental disorders as consequences. Therefore the recommendation for a particular interventions should rather be based on the diagnosis instead of the exposure to a particular type of violence. 3. the more included studies with evidence of medium to large benefits of CBT with a trauma focus and promising evidence for other CBT type therapies make the balance in favour of recommending CBT for this population. 4. However where trained personnel on CBT is not available the GDG felt that other evidence-based therapeutic approaches in particular IPT should be offered. 5. the very low or low certainty/quality of evidence overall due to a) concerns about risk of bias, b) small sample sizes, and c) imprecise effect sizes. 6. the barriers to implementation (e.g. lack of specialised personnel, effort to train, mentor and supervise lay personnel, costs of transport, loss of wages of caregivers, time required for frequent visits) in low and middle-income countries make it challenging for CBT and IPT to be applicable everywhere. Therefore, the strength of the recommendation is rated as conditional. 7. Limited evidence suggests that the intervention may be acceptable to health care providers although young people receiving the intervention may be concerned with stigma. Given the small number of studies for the target group of children that have been exposed to child maltreatment and that show particular mental health symptoms, the group decided to also consider the existing recommendations on the broader evidence-base that exists for different mental health conditions for children (WHO mhGAP) and the broader evidence base for psychosocial interventions for children that have been victims of sexual abuse. These recommendations have been adapted for children exposed to maltreatment and it was highlighted wherever particular considerations apply for the subgroup of children exposed to physical abuse, emotional abuse, or neglect. There was not enough evidence from this population group to recommend specific therapeutic approaches for emotional disorders/internalizing symptoms or behavioural/externalizing disorders. However, physical abuse, emotional abuse and neglect is frequently accompanied by other adversities which are also associated with emotional disorders or are risk factors for some types of behavioural disorders. Therefore, the GDG agreed to apply the existing mhGAP recommendations for all children and adolescents with emotional disorders and behavioural disorders to this population of sexually abused children and adolescents (Recommendations 6 and 7) There was no study retrieved on pharmacological interventions for children and adolescents exposed to maltreatment, therefore the recommendation from mhGAP was applied (Recommendation 9).

Subgroup considerations	Many of the interventions have not been tested for very young children (≤ 8 years of age). 1. Age related considerations – the intervention will need to be adapted with diverse approaches to the different levels of maturity and cognitive development of children and adolescents. 2. Boys are less likely to seek services than girls, and may face additional barriers related to stereotypes and lack of acceptance that boys cannot be abused, or fear of having their masculinity questioned.
Implementation considerations	• The safety of the child or adolescent who has been maltreated is paramount. Those providing psychological interventions should be aware of the potential risks for children or adolescents. The involvement of caregivers should be guided by concerns for the safety and well-being of the child. Health-care providers should assess the safety implications of the treatment/care they provide and take actions to minimize the risk of harms. • Minimum requirements for delivering psychological interventions, particularly CBT, include the need for thorough training and on-going supportive supervision of personnel, particularly for non-specialized providers. Equity and human rights considerations: Access to psychological interventions may be challenging in low and middle-income countries and rural areas where there is limited availability of skilled health care providers or trained specialists, where physical access to facilities is limited, where costs are prohibitive, and for families who may have to take time off from work to attend or take their children to sessions.

Summary of intervention benefits:

Counseling/therapy

N=13 RCTs, n=1687 participants

Child maltreatment:

- **Project Chrysalis vs. control group (Brown 2001⁵⁶).** For depression and suicide risk, the authors did not use standardized measures and so the results should be interpreted with caution. The authors report that Project Chrysalis has no effect on reported number of depression symptoms and no effect on suicidal thoughts.
- **Child-parent psychotherapy (Cicchetti 2006⁵⁷, Toth 2002⁵⁸).** We have very low certainty that immediately post-treatment for boys/girls (average age of 4 years), preschooler-parent psychotherapy may enable an increase in parent-child interaction; however, at 3-months follow-up, infant-parent psychotherapy for boys/girls (average age of 13.31 months) shows no effect on internalizing or externalizing symptoms.
- **Multi-family group therapy vs. traditional family therapy (Meezan 1998⁶⁰).** We have very low certainty that immediately post-treatment for children (ages 2-11), multi-family group therapy vs. traditional family therapy shows no effect on internalizing, externalizing, or depression symptoms.
- **CBT vs. usual care (Shirk 2014⁵⁹).** We have very low certainty that immediately post-treatment for adolescent boys/girls (avg age 15-16 yrs), CBT vs. usual care may enable a small reduction in depression.
- **Play therapy vs. control (Reams 1994⁶¹).** We have very low certainty that immediately post-treatment for girls/boys (3.5-5 yrs), play therapy vs. control has no effect on externalizing symptoms/behaviour problems or anxiety. At 3-months follow-up, we have very low certainty that play therapy shows a small effect on externalizing symptoms, but still no effect on anxiety symptoms.

Physical abuse & neglect:

- **Individual parent-child CBT vs. routine community services (Kolko 1996⁷⁶).** We have very low certainty that immediately post-treatment for boys/girls (ages 6-13) exposed to physical abuse, individual parent-child CBT may enable a reduction in internalizing symptoms and a small reduction in externalizing symptoms; however, the control group shows a small but greater reduction in depression. At 12-months follow-up, individual parent-child CBT may enable a small reduction in internalizing and externalizing symptoms; however, the control group still shows a small but greater reduction in depression. Immediately post-intervention, we have very low certainty that re-report rates (including substantiated reports) for the routine community services group were 250 per 1000 compared to 80 per 1000 for the individual child and parent CBT group (for a difference of 170 per 1000).
- **Combined parent-child CBT vs. parent-only CBT (Runyon 2010⁷⁰).** We have very low certainty that immediately post-treatment for boys/girls (ages 7-13), combined parent-child CBT may enable reductions in PTSD symptoms; however, the control group shows a small but greater reduction in internalizing and externalizing symptoms at this time point.
- **Family therapy vs. routine community services (Kolko 1996⁷⁶).** Immediately post-treatment, we have very low certainty that for boys/girls (age 6-13), family therapy may show no effect on internalizing or externalizing symptoms and the control group shows a small but greater reduction in depression symptoms. At 12-months follow-up, family therapy may enable a reduction in externalizing symptoms, but no effect on internalizing symptoms; the control group shows a very small but greater reduction in depression symptoms at this time point. Immediately post-intervention, we have very low certainty that re-report rates (including substantiated reports) for the routine community services group were 250 per 1000 compared to 112 per 1000 for the family therapy group (for a difference of 138 per 1000).
- **Play therapy vs. focused case work (Nicol 1988⁷⁹).** Immediately post-treatment, we have very low certainty that for children (ages 0-14) the control group (i.e., case work) may enable an increase in positive caregiver behaviours ($T=1.869$, $d.f.=42$, $P<0.05$) and a reduction in caregiver coercive behaviour ($t=1.69$, $d.f.=42$, $P<0.05$).
- **CBT with trauma focus vs. wait list (Damra 2014⁷⁷).** Immediately post-treatment and at 4-months follow-up, we have very low certainty evidence that for adolescent boys (10-12 years), CBT with a trauma-focus may enable a reduction in PTSD symptoms and depression.
- **Cognitive behavioural training vs. non-skilled/actively listening (LeSure-Lester 2002⁷⁸).** Immediately post-treatment, we have very low certainty that for adolescent boys (ages 12-16), cognitive behaviour training may enable a reduction in externalizing symptoms.

Neglect:

- **Dyadic music therapy vs. treatment as usual (Jacobsen 2014⁸⁰).** Immediately post-treatment, we have very low certainty that for girls/boys (ages 5-12), Dyadic music therapy may increase positive parent behaviour/response; however, the control group showed greater reductions in negative parent behaviour/response.

Parenting, clinic or community setting

N=6 RCTs, n=722 participants

Children exposed to child maltreatment:

- **Parent-child interaction therapy (PCIT) (Thomas 2011⁸¹, 2012⁸²; Chaffin 2011⁸³; Chaffin, 2004⁸⁴).** Outcomes for internalizing and externalizing symptoms were pooled across child maltreatment and physical abuse/neglect studies. Immediately post-treatment, we have moderate certainty that for boys/girls (ages 2-12) PCIT reduces internalizing and externalizing symptoms for children exposed to child maltreatment or physical abuse/neglect. Immediately post-treatment, we have low certainty that for boys/girls (average age of 5) PCIT may enable an increase in caregivers' praising and positive reflective behaviour and reduce caregivers' use of commands and questions (negative parenting behaviour) in children exposed to maltreatment.
- **Stress management or child management vs. treatment as usual (Egan 1983⁸⁵).** We have very low certainty that for children (age 2-14) stress management may increase parental affect, parental verbal command, and child affect. We have very low certainty evidence that child management may increase positive child affect and comply followed by positive verbal response. (No effect on state-trait anxiety was found for either group.)

Children exposed to physical abuse and/or neglect:

- **PCIT (Chaffin 2011⁸³, Chaffin, 2004⁸⁴).** Immediately post-treatment, we have moderate certainty that for children (ages 2.5-12 years) standard PCIT may reduce internalizing symptoms and externalizing symptoms. We have very low certainty that PCIT may decrease negative caregiver behaviour, and may increase positive parent behaviour. For enhanced PCIT we have very low certainty of the same findings, except no effect on externalizing symptoms. At a mean of 850 days (just under 2 years), we have very low certainty that children in the standard community care group had re-report rates of 486 per 1000 compared to 191 per 1000 in the parent-child interaction therapy group (for

a difference of 295). At a mean of 850 days, we have very low certainty that children in the enhanced parent-child interaction therapy group had a re-report rate of 486 per 1000 compared to 366 per 1000 (for a difference of 120 per 1000).

Children exposed to neglect:

- **Families Actively Improving Relationships Program (FAIR) vs. treatment as usual (Saldana 2015⁸⁷).** Immediately post-treatment and at 6-month follow-up, we have very low certainty that FAIR may enable a reduction in externalizing symptoms.

Parenting interventions, home-based

N=11 RCTs, n=2967 participants

Children exposed to child maltreatment:

- **SafeCare vs. Home-based services as usual for child maltreatment (Chaffin 2012):** At 12-month follow-up (mean of 6 years assessed), we have moderate certainty that the services as usual group will experience recidivism at a rate of 450 per 1000 compared to 391 per 1000 in the SafeCare group (for a difference of 59 per 1000).
- **Promoting First Relationships vs. early education support (Spieker 2012⁸⁹).** Overall, for girls/boys (ages 10-24 months) we have very low certainty that Promoting First Relationships may increase maternal sensitivity at post-treatment and 6-month follow-up and decrease internalizing symptoms at post-treatment (No effect on supportive parent-child interactions or internalizing symptoms.)
- **Attachment oriented home visits vs. standard care (Moss 2011⁸⁸).** Overall, for girls/boys (ages 1-6 yrs) we have very low certainty that attachment-oriented home visits may reduce internalizing symptoms and increase maternal sensitivity post-treatment. (No reduction in externalizing symptoms.)
- **Psychoeducational home visits vs. community control (Toth 2002⁵⁸).** Overall, for girls/boys (avg age 4 years), we have very low certainty that psychoeducation home visits shows no benefit to children at post-treatment.
- **Psychoeducation parenting intervention vs. community control (Cicchetti 2006⁵⁷).** At 12-month follow-up, we have very low certainty that for girls/boys (avg age 13.31 months) psychoeducation parenting intervention shows no effect on internalizing or externalizing symptoms.
- **Multi-systemic therapy vs. parent training (Brunk 1987⁹⁰).** The authors did not report variance and so outcomes are narratively reported. Immediately post-treatment, we have very low certainty that for boys/girls (avg. age 6.8-9.8 yrs) both MST and parent training show benefits to some aspects of improved parental effectiveness (attention and action) and lessening of parental unresponsiveness.

Children exposed to physical abuse and/or neglect:

- **Home visiting by a public health nurse vs. standard care (MacMillan 2005⁹¹).** Overall, for boys (avg age 5 years), home visiting by a public health nurse may enable a reduction in externalizing symptoms at 12-months. For boys/girls, home visiting by a public health nurse may increase positive parent-child interaction at post-treatment and 12-months. (For girls, no reduction in externalizing or anxiety symptoms at post-treatment or 12-month follow-up; for boys, no reduction in externalizing symptoms at post-treatment, or anxiety at post-treatment or 12-months follow-up.) At 12-month follow up, we have low certainty that children in the standard care group will experience re-reports of physical abuse at a rate of 431 per 1000 compared to 330 per 1000 for children receiving home visits from a public health nurse (for a difference of 101 per 1000). At 12-month follow-up we have low certainty that children in the standard care group will experience re-reports of neglect at a rate of 514 per 1000 compared to 467 per 1000 for children receiving home visits from a public health nurses (for a difference of 47 per 1000).
- **Multisystemic therapy vs. enhanced outpatient treatment (Swenson 2010⁹²).** Study authors did not report baseline or post-treatment data, so we report mean differences reported by the study. As such, we were not able to calculate SMD to characterize the size of the effect. Immediately post-treatment, we have very low certainty that for boys/girls (10-17 yrs), MST may lead to a reduction in internalizing symptoms and PTSD symptoms, but have a trivial or no effect on externalizing symptoms, anxiety, and depression. At 16-month follow up, we have very low certainty that the enhanced outpatient treatment group had reabuse rates of 119 per 1000 compared to the 45 per 1000 in the multisystemic therapy group (for a difference of 74 per 1000).
- **Project Support vs. treatment as usual (Jouriles 2010⁹³).** At 20 months follow-up, we have very low certainty that re-report rates of maltreatment in the treatment as usual group were 278 per 1000 compared to 58 per 1000 in the Project Support intervention (for a difference of 20 per 1000).

- **Internet-based interacting intervention (InTERACT) vs. internet resources (Mast 2014⁸⁶)**. At 2-months follow-up, we have very low certainty that for children (ages 3-9 years) InTERACT may increase caregiver praise and positive caregiver reflections, as well as decrease caregiver commands and caregiver questions. However, the control group had a more significant reduction in internalizing and externalizing symptoms.

Children exposed to neglect:

- **Attachment and biobehavioural (ABC) catch-up vs. developmental education for families (Bernard 2015⁹⁴)**. We have very low certainty that at 5 year follow-up there may be a significant improvement in maternal sensitivity [baseline mean vs. follow-up mean, -3.93 vs. 2.4 (latter mean not clearly stated), $p < 0.001$]

Child-focused skills development

2 RCTs, 85 participants

Children exposed to physical abuse and/or neglect:

- **Child-focused skills-development vs. control (Fantuzzo 1988⁹⁵, 1996⁹⁶)**. Immediately post-treatment, for boys/girls (ages 3-5) we have very low certainty that resilient peer treatment (vs. control) enables a large reduction in anxiety/psychological problems, internalizing, and externalizing symptoms. Also, we have very low certainty evidence that child-initiated social interaction shows a large reduction in anxiety/psychological problems for the intervention group.

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Web Annex 4a: Systematic review – Interventions for perpetrators to address maltreatment recurrence

Interventions that address maltreatment recurrence: A systematic review

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Key Messages

- Child maltreatment is a serious, global problem that is associated with significant immediate and long-term consequences
- Exposures to maltreatment may co-occur or recur and when they do, children may face increased risk of impairment
- Definitions: While definitions of reports and recurrence vary across setting, Fluke et al.¹ have offered the following definitions of referrals, reports, and recurrence, which are used in this report. A healthcare practitioner may make a *referral/notification* of suspected maltreatment to a child protection service (CPS) agency. This referral may or may not be screened in for investigation. If it is screened in for investigation it is called a *report*. *Recurrence* refers to the second, third, or subsequent time that a child has been found to be a victim of maltreatment following a prior determination that a child was victimized. A child may experience one form of maltreatment (e.g., neglect) at one point in their life and another form of maltreatment (e.g., sexual abuse) at a later point in their life (called '*sequential cross-type maltreatment*'); they may also experience multiple forms of maltreatment simultaneously (*cross-type maltreatment* or *co-occurring maltreatment*), although this may not be apparent upon initial investigation (*hidden cross-type maltreatment*).
- The purpose of this review is to assess the effectiveness of interventions that address reports or recurrence of child maltreatment, including physical, sexual, emotional abuse or neglect
- To address the review objectives, studies were retrieved in two ways. 1) Studies addressing interventions targeting caregivers who have maltreated a child were included from the report, *Psychosocial Interventions for Children Exposed to Maltreatment: A systematic review* (this report is also to be considered by the GDG). 2) Studies addressing non-caregivers who have maltreated children were found by conducting a systematic review using terminology specific to this group (e.g., perpetrators, offenders, etc.).
- A total of 13 studies were analyzed for this review: eight studies addressing caregivers and five studies addressing non-caregivers
- The few studies that were included in this review addressed some counseling/therapy interventions, some parenting interventions delivered in a home or clinic setting, and some pharmacological interventions for non-caregivers.
- We have very low certainty in most of the evidence included in this review, due to serious or very serious concerns for risk of and very serious concerns for imprecision. Only the large SafeCare trial was rated as moderate certainty evidence and showed some benefit.
- **Interventions targeting caregivers.** Most studies assessed re-reports of maltreatment, although some looked at re-reports and substantiated reports (recurrence), but did not distinguish between the two in their findings. The time period examined ranged from post-intervention (approximately 12 months) to just over 2 years. While all interventions showed a reduction in re-report rates, re-report rates were much more substantial in some interventions compared to others. For example, at a mean of a two-year follow-up, we have very low certainty that Parent Child Interaction Therapy (PCIT) enabled 295 less re-reports per 1000 compared to a standard community-based parenting group. Alternatively, at 20-months follow-up we have very low certainty that Project Support enabled 20 less re-reports per 1000 compared to the treatment as usual control.
- **Interventions targeting non-caregivers.** All of the included studies for non-caregivers addressed sexual offenses – one study addressed Multisystemic Therapy (MST) for youth and the other 4 studies addressed interventions for adults who had committed sexual crimes. Studies tended to

address recurrence rates through assessments of arrests or involvement with court. We have very low certainty that MST for youths leads to reductions in recurrence; we have very low certainty that interventions targeting adults charged with sexual offenses show little or no benefit.

Abstract

Background. Child maltreatment is a serious, global problem that is associated with significant immediate and long-term consequences. This report details a systematic review about the effectiveness of interventions that attempt to reduce child maltreatment reports and recurrence rates. **Method.** Some interventions that addressed maltreatment reports and recurrence rates were discussed in our report titled, *Psychosocial Interventions for Children Exposed to Maltreatment: A Systematic Review*. In addition, supplemental searches were run to identify interventions that addressed reports and recurrence rates in non-caregivers who maltreat children. These supplemental searches were conducted in PubMed, PsycINFO, Web of Science, Cochrane, Embase, CINAHL, Sociological Abstracts, ERIC, Social Work Abstracts, Social Services Abstracts, Criminal Justice Abstracts, Campbell Corporation, and the WHO Index Medicus from database inception to December 6th, 2016. While searches used English language terms, studies in all languages were eligible for inclusion. Forward and backward citation chaining was used to complement the search. Randomized controlled trials (RCTs) that involved psychosocial or pharmacological interventions (and comparator) for caregivers or non-caregivers who maltreat children were included. Eligible outcomes included 1) Reduction in number of subsequent involvements by parent/caregivers and/or children with authorities (i.e., CPS reports and recurrence rates); 2) Reported recurrence by non-perpetrating caregiver, and 3) Self-reported recurrence by perpetrating caregiver. The quality of studies was assessed using the Cochrane Risk of Bias tool and the overall certainty of the included evidence was assessed using GRADE criteria. **Setting:** All healthcare and social service settings were included. **Results.** A total of 13 studies were included in this review, eight addressing caregivers who have maltreated children and 5 addressing non-caregivers who have sexually maltreated children. All interventions addressing caregivers show some reductions in re-report or recurrence rates, although our certainty in most of the evidence is very low. Only the large SafeCare trial has moderate certainty evidence and this trial suggests only a small benefit – 59 per 1000 less children experience re-reports for maltreatment compared to services as usual. We have very low certainty in most interventions addressing non-caregivers and only the multisystemic therapy trial targeting primarily adolescent boys shows reductions in recurrence rates. **Discussion.** Caregivers and non-caregivers face significant stigma for their actions and many healthcare providers have indicated they do not want to work with these groups, in particular they do not want to

work with adults who sexually abuse children. While the interventions addressing caregivers who maltreat children in this review show promise for reducing recurrence rates, as does multisystemic therapy for youth who commit sexual crimes, other interventions for adults who commit sexual crimes are less promising, suggesting that a) more work needs to be done to develop non-stigmatizing interventions for these groups and b) that preventative efforts through intensive support of younger populations who commit sexual crimes is a necessity.

11. Background

It is recognized that child maltreatment is a serious, global problem that is associated with significant immediate and long-term consequences pertaining not only to the well-being and development of individuals but also to broader issues relating to public health, human rights, culture and the law.² Global estimates of child maltreatment indicate that a significant proportion of adults have experience child maltreatment as a child, including childhood physical abuse (22.6%), emotional abuse (36.3%), neglect (16.3%), and sexual abuse (18% of women and 7.6% of men).³⁻⁵ It is important to note that a child may experience one form of maltreatment (e.g., neglect) at one point in their life and another form of maltreatment (e.g., sexual abuse) at a later point in their life (called ‘sequential cross-type maltreatment’); they may also experience multiple forms of maltreatment simultaneously (cross-type maltreatment), although this may not be apparent upon initial investigation (hidden cross-type maltreatment). When maltreatment experiences are co-occurring⁶ or recurring⁷, children may face increased risk of impairment.⁸⁻¹⁰ While there is no standard definition of recurrence within the context of research, Fluke and colleagues¹ have defined recurrence (aka re-victimization and repeated maltreatment) as the “second, third, or subsequent time that a child has been found to be a victim of maltreatment following a prior determination that a child was victimized”. This differs from a *referral/notification* to a child protection service (CPS) agency by, for example, a mandated reporter. The referral may or may not be “screened in” by the CPS intake worker and, correspondingly, a *report* indicates that the referral/notification was screened in for investigation.¹ The purpose of this review is to assess the effectiveness of interventions that address reports or recurrence of maltreatment. Specifically, we investigate any psychosocial or pharmacological intervention targeted at adolescents or adults who maltreat children that address rates of maltreatment reports or recurrence.

Fluke and colleagues¹¹ reported that recurrence is most common among children who had experienced neglect, followed by physical abuse, then sexual abuse. Younger children are at an increased risk for recurrence, as are children who were differently-abled, or who had developmental impairments,

as well as children whose parents had substance abuse problems or histories of violent and/or aggressive behaviours.⁷ Jonson-Reid and colleagues¹² further report that the majority of children who are reported for maltreatment will be reported for a different type of maltreatment (sequential cross-type or hidden mixed-type maltreatment). More specifically, regardless of what type of maltreatment children were initially substantiated for, they are more likely to be substantiated for neglect via future re-reports.¹² Adults who sexually abused or neglected children were found by Jonson-Reid and colleagues¹² to be re-reported/substantiated for the same type of maltreatment at a later time. Importantly, this means that a reduction in risk of recurrence of sexual abuse for a child does not necessarily mean a reduction of risk of recurrence at the perpetrator level, as the adult who is sexually abusing a child may still be abusing other children in the family or community.

In order to address effectiveness of interventions that address maltreatment recurrence, this review addresses the following questions:

- For perpetrators of CM (P), does psychosocial intervention A, compared to psychosocial intervention B or no psychosocial intervention (C), result in a reduction of recurrence of CM (O)?²²
- For perpetrators of CM (P), does pharmacological intervention A (I), compared to pharmacological intervention B or no pharmacological intervention (C), result in a reduction of recurrence of CM (O)?

12. Methods

To address the review objectives, a systematic review was conducted. Studies specific to caregivers were found via another systematic review (details of this systematic review are found in the report, *Psychosocial Interventions for Children Exposed to Maltreatment: A Systematic Review*). To find studies that addressed non-caregivers, a supplemental search was undertaken (search strategies are found in Appendix A). A protocol for parent/umbrella review is registered with the online systematic review register, PROSPERO (PROSPERO 2016:CRD42016039656).

12.1. Inclusion Criteria

This review addresses the following PICO criteria:

²² Note: Throughout the report we have tried to minimize the use of the label “perpetrator”, although this is how the PICO question was originally worded, following the GDG discussion that took place during the scoping meeting. At this meeting most GDG members indicated that labels such as “perpetrator” were potentially harmful and not helpful.

- XIX. **Population:** Studies had to include adolescents (ages 13-17) or adults (>18 years) who maltreated children (aged 0-17); forms of maltreatment included physical abuse, sexual abuse, neglect, and emotional abuse. The age difference between adolescents and maltreated children was not an inclusion criterion for this review.
- XX. **Intervention:** Included studies could examine any psychosocial or pharmacological intervention to address maltreatment.
- XXI. **Comparator:** Studies could include any form of psychosocial/pharmacological intervention or no intervention as a comparison to the target intervention.
- XXII. **Outcomes:**
 - a. Reduction in number of subsequent involvements by parent/caregivers and/or children with authorities (i.e., CPS reports and recurrence rates)
 - b. Reported recurrence by non-perpetrating caregiver
 - c. Self-reported recurrence by perpetrating caregiver
- XXIII. **Study type:** Only RCTs were considered for inclusion in this review.
- XXIV. **Publication type:** Only published articles were considered for inclusion in this review.
- XXV. **Languages:** Searches were conducted using English language terms, but all languages were screened and were considered eligible for inclusion.
- XXVI. **Date range:** All dates until December 6th, 2016 (when search was executed).

12.2. Exclusion Criteria

Studies were excluded if they represented the wrong population, intervention, or study type.

- VII. **Wrong population.** Studies that addressed young children (<12 years) with sexual behaviour problems or that included a different population (e.g., depressed adolescents) were excluded.
- VIII. **Wrong intervention type.** Studies that addressed primary prevention of child maltreatment (e.g. studies that targeted at-risk mothers or families) were excluded.
- IX. **Wrong study design.** Non-RCTs were excluded.
- X. **Wrong outcomes.** Studies that did not assess the report and recurrence outcomes listed above were excluded.
- XI. **Wrong publication type.** Published literature such as conference abstracts, books, editorials and letters-to-the editor were excluded. Unpublished reported and dissertations were also excluded.

12.3. Sources

Records were obtained through two sources:

- e. Database searching
- f. Citation chaining

Studies related to caregivers who have maltreated children were drawn from the report, *Psychosocial Interventions for Children Exposed to Maltreatment: A Systematic Review*. Additional supplemental searches were performed to identify studies that addressed non-caregivers who have maltreated children (see Appendix I). All included studies were also subjected to citation chaining whereby all relevant citations in the articles were screened and potential relevant articles citing these studies (in Google Scholar) were screened (more details available from report author). Relevant systematic reviews and meta-analyses that were identified through citation chaining were also screened for relevant results.

12.4. Data extraction

Extracted data included study population and design, intervention, analysis and results for those outcomes as essential through the GRADE outcome rating process. One team member completed full extraction (study characteristics and results) using electronic data extraction forms. A second team member then verified all extracted data; disagreements were resolved through discussion and/or third party consultation when consensus could not be reached. All findings in text and tables were checked in a third round of verification.

12.5. Quality assessment

Study quality was evaluated using the Cochrane Review Manager Risk of Bias tool¹³. This rating tool assesses risk of bias in six domains as follows: sequence generation, allocation concealment, blinding of participants, personnel and outcome assessors, incomplete outcome reporting, selective outcome reporting, and 'other risk of bias' (see Appendix 2). For the 'other risk of bias' domain, we examined significant baseline between-group differences on important characteristics, contamination, and industry funding. A detailed description of the method used in the determination of risk of bias is provided in Appendix 2.

For each study, one team member completed the initial ratings which were then verified by a second person (this involved unblinded checking of the first team member's ratings); disagreements were resolved through discussion and/or third party consultation when consensus could not be reached. For each category, verbatim quotes, summary of known facts, reviewer comments, page number was copied. Otherwise, staff wrote "probably done," "probably not done," or included an explicit statement if no

information was available to inform a judgement. Study authors were not contacted to verify missing/unclear information.

For the risk of bias tool, the first two categories (sequence generation and blinding of participants/patients and providers/personnel) carry the most weight. A study can only be rated as an overall “low risk” of bias, if none of the individual domains are rated as high risk and the first two domains are low risk. A study is rated as an overall “unclear” risk of bias, if most of the domains are “unclear” and the first two domains are not high risk. A study is rated as an overall “high” risk of bias, if most of the domains are “unclear” or “high risk” and the first two domains are high risk as well.

12.6. GRADE assessment

Evidence for each review included in this document was assessed using the GRADE system. The GRADE system rates the quality of a body of evidence as high, moderate, low or very low. Each of the four levels reflects the level of certainty associated with the evidence presented and the likelihood that further research will have an impact on the estimate of effect. For example, high quality evidence would suggest that we are very confident that the true effect lies close to the estimate of effect reported; whereas very low quality suggests little certainty that the true effect is likely to be close to the reported estimate of effect and further research is quite likely to yield a different result.

A GRADE rating is based on an assessment of five domains: (1) risk of bias (limitations in study designs), (2) inconsistency (heterogeneity) in the direction and/or size of the estimates of effect, (3) indirectness of the body of evidence to the populations, interventions, comparators and/or outcomes of interest, (4) imprecision of results (few participants/events/observations, wide confidence intervals), and (5) indications of reporting or publication bias. A body of evidence based on RCTs begins with a high-quality rating which may be downgraded for each of the five domains that are rated as a “serious concern” or “very serious concern”.

12.7. Data analysis

The analysis has been segmented according to intervention type and gender to prevent possible smoothing out of intervention effects on analysis. Where appropriate data were available, pooled analyses were completed. Otherwise, narrative syntheses of extracted data were performed. Results are reported according to intervention type.

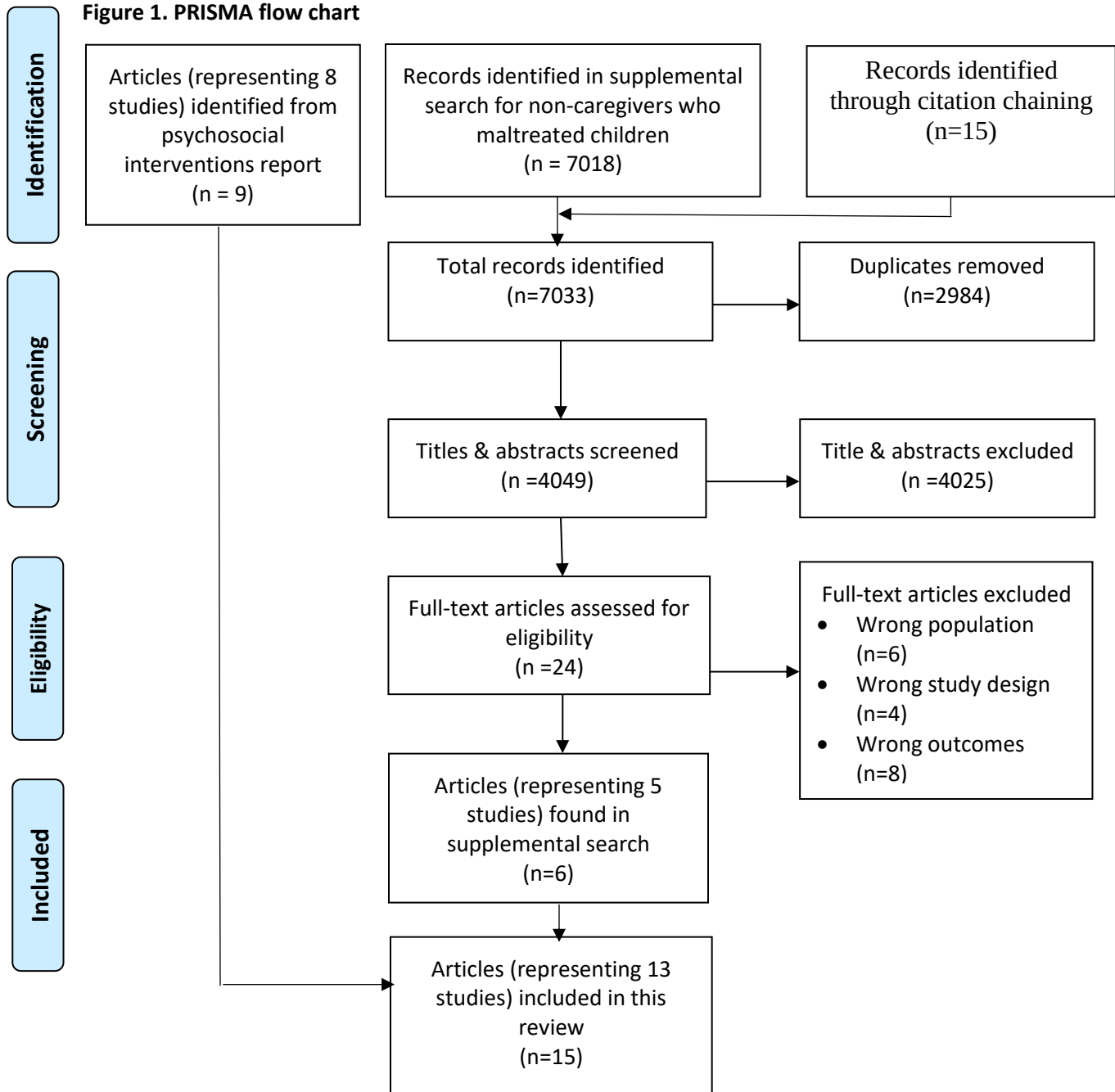
For the purposes of presenting evidence as is standard in GRADE tables, some calculations were completed. For this review, the effect estimates were calculated as Mean Difference (MD) for continuous

outcomes using single measures, Standardized Mean Difference (SMD) for continuous outcomes using multiple measures, and Odds Ratio (OR) for dichotomous outcomes. To characterize the size of the effect, calculated important difference values are shown in the GRADE tables following the description of the measures (e.g., SMD = -1.10). These differences follow Cohen's rule of thumb¹⁴, where an SMD value under 0.2 indicates no effect; a value of 0.2 to 0.49 indicates a small effect; a value of 0.5-0.79 indicates a medium effect; and a value of 0.8 and above a large effect. More details about these analyses are available in the main report, *Psychosocial Interventions for Children Exposed to Maltreatment: A Systematic Review*.

13. Results

Over 7,000 records were identified and after deduplication, 4049 title and abstracts were screened by two independent reviewers (see Figure 1). Most of these title and abstracts were clearly not interventions directed at adolescents or adults who maltreat children and were instead opinion papers about perpetrators, cross-sectional studies looking at prevalence of perpetration, studies about characteristics of perpetrators, and so on. Of the 4049 title and abstracts screened, only 24 full-text articles were screened for eligibility and of these articles, only six were deemed eligible for inclusion in this review. While the search strategies were open to including perpetration of any kind of maltreatment, only studies that examined interventions targeted at non-caregivers committing sexual abuse were found by this search. In addition, 8 studies that addressed reports and recurrence rates in caregivers were identified from the report, *Psychosocial Interventions for Children Exposed to Maltreatment: A Systematic Review*..

Figure 1. PRISMA flow chart



13.1. Description of studies, GRADE assessment

All of the studies included in this report were RCTs. Studies could be grouped into interventions provided to caregivers who maltreat or have maltreated children and those provided to non-caregiving youth or adults who maltreat children (see Table 1). In total, eight studies addressed re-reports or recurrence for caregivers who have maltreated children and five studies addressed re-reports or recurrence for non-caregivers who have maltreated children. For studies addressing caregivers, one study addressed counseling/therapy interventions, two studies addressed parenting interventions delivered in a clinic setting, and four studies addressed parenting interventions in a home setting (aka home visiting studies). For studies addressing non-caregivers, one study addressed a parenting intervention delivered in a home setting for youth, four studies addressed counseling/therapy interventions addressing adults, and two studies addressed pharmacological interventions. Further discussion of included studies is found below.

GRADE assessment. For the studies that addressed interventions for caregivers, much of the evidence certainty is “very low” and was most often downgraded for serious risk of bias and very serious imprecision, as the number of children contributing to the outcomes was less than 300 (which makes the effect less precise), and the confidence intervals around the effect included both no effect and important benefit/harm. More explicitly, this means that the body of evidence started as “high” quality (as only RCTs were included), but was downgraded to “moderate” quality due to serious concerns for bias, then downgraded to “low” quality for small numbers of children contributing data and then downgraded to “very low” quality for serious concerns about imprecise effect sizes. Very low certainty evidence suggests that we have very little confidence in the effect estimate and the true effect is likely to be substantially different from the estimate of effect. It is likely that further research could have an impact on the estimate of effect.

Table 1. Summary of the quality and certainty of psychosocial interventions directed at children exposed to maltreatment									
CM type	Country	Psychosocial intervention	Baseline N	Intervention setting	Child age range (inclusion criteria)	Sex	# RCTs	Quality	Certainty
Caregivers who have maltreated children									
		Counseling/therapy					1		
PA	U.S.	Individual CBT ¹⁵	43 (arm 1)	Clin	6-13	G/B		U	Very low
PA	U.S.	Family therapy ¹⁵	43 (arm 2)	Clin	6-13	G/B		U	Very low
		Parenting, Clinic or community					3		
PA & N	U.S.	Parent child interaction therapy ^{16,17}	192 (dyads)	Clin	2.5-12 years	G/B		U	Moderate*
PA	U.S.	Parent child interaction therapy ¹⁸	110 (dyads)	Clin	4-12 years	G/B		U	Moderate*
		Parenting, Home					4		
CM (but mostly PA & N)	U.S.	SafeCare ¹⁹	2175	Home	3?-12 years	G/B		U	Moderate
PA & N	CA	Home visits by nurses ²⁰	163 families	Home	0-12 years	G/B		Low	Low
PA	U.S.	Multi-systemic therapy ²¹	86 (dyads)	Home	10-17 years	G/B		U	Very low
PA & N	U.S.	Project Support ²²	35 families	Home	3-8 years	G/B		U	Very low
		Parenting, Home (youth)					1		
SA	U.S.	Multi-systemic therapy ²³	48	Com	Mean=14 yrs	Boys		U	Very low
Non-caregivers who have maltreated children									
		Counseling/therapy (adults)					3		
SA	U.S.	Cognitive Behavioural Therapy ^{24,25}	259	Inst	18-60	Men		U	Moderate
SA	U.S.	Group Psychotherapy ²⁶	231	Clin	Most 18-25	Men		U	Low
SA	CA	Assertion therapy (study 1) ²⁷	32	Clin	Mean=24 yrs	Men		U	Low
SA	AU	Imaginal desensitization ²⁸	30	Clin	16-50	Boys/Men		H	Very low

		Pharmacological (adults)					2		
SA	AU	Medroxyprogesterone ²⁸	30	Clin	16=50	Boys/ Men		H	Very low
SA	CA	Provera (studies 2,3) ²⁷	(8,10 – respectively)	Clin	Mean=24 yrs	Men		U	Very low
PA=physical abuse, N=neglect, CM=child maltreatment (physical abuse, emotional abuse, and neglect generally), SA=sexual abuse U.S.=United States, CA=Canada, AU=Australia Clin=Clinic, Comm=Community; Inst=Institution (prison) G=girl; B=boy U=Uncertain risk of bias (aka serious risk of bias); H=High risk of bias (aka very serious risk of bias)									

3.2 Interventions for caregivers who have maltreated children

Participant and study characteristics. Seven RCTs addressed interventions for caregivers. One study (Kolko 1996¹⁵) addressed counselling/therapy interventions (individual child or parent cognitive behavioural therapy (CBT) and family therapy), two evaluated parenting interventions provided in clinic or community settings (Chaffin 2004¹⁸ and Chaffin 2011¹⁷ addressed parent-child interaction therapy), and four evaluated in-home parenting interventions (Chaffin 2012¹⁹ addressed SafeCare, MacMillan 2005²⁰ addressed home visits by public health nurses, Swenson 2010²¹ addressed multisystemic therapy, and Jouriles 2010²² addressed Project Support). All studies took place in high-income countries, either Canada (MacMillan 2005²⁰) or the U.S. (Kolko 1996¹⁵, Chaffin 2004¹⁸, Chaffin 2011¹⁷, Chaffin 2012¹⁹, Jouriles 2010²², Swenson 2010²¹). Most of these studies recruited school-aged children or toddlers and school-aged children (girls and boys, percentages often not specified), with individual child or parent CBT and family therapy (Kolko 1996¹⁵) targeting children (72% boys) from 6 to 13 years, parent-child interaction therapy (Chaffin 2011¹⁷) targeting children ages 2.5 to 12 years (Chaffin 2004¹⁸ did not report age), the SafeCare trial (Chaffin 2012¹⁹) targeting children up to 12 years, the trial evaluating home visits with a public health nurse targeting children (50% boys/girls) younger than 13 years (average age of 5 years), and Project Support (Jouriles 2010²²) targeting children ages 3 to 8 years. Only multisystemic therapy (Swenson 2010²¹) targeted caregivers of older children/adolescents (56% girls) who were an average age of 14 years (age range 10-17 years).

Risk of bias. The complete risk of bias table for the included studies is found in Appendix IV. It is challenging to blind participants/providers in psychosocial interventions, so all studies had high risk of bias for this category. Three studies (Kolko 1996¹⁵, Chaffin 2004¹⁸, Chaffin 2012¹⁹) did not state or use a low-risk method of allocation concealment (e.g., centralized telephone), so were high risk in these areas. Overall, all seven included studies were rated as unclear risk of bias.

GRADE assessments. The SafeCare trial (Chaffin 2012¹⁹) was only downgraded for serious concerns for risk of bias and as such we have moderate certainty in the outcomes of this study. Moderate certainty evidence means that we are moderately confident in the effect estimate and the true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different. The trial evaluating home visits with a public health nurse (MacMillan 2005²⁰) had low risk of bias, but was downgraded for very serious imprecision, making our certainty in the outcomes of this study low. Low

quality means that our confidence in the effect estimate is limited and the true effect may be substantially different from the estimate of the effect. The other five studies (Kolko 1996¹⁵, Chaffin 2004¹⁸, Chaffin 2011¹⁷, Jouriles 2010²², Swenson 2010²¹) were all downgraded for serious risk of bias and very serious imprecision, making our certainty in the evidence very low. Very low certainty evidence suggests that we have very little confidence in the effect estimate and the true effect is likely to be substantially different from the estimate of effect. It is likely that further research could have an impact on the estimate of effect.

Outcomes.

Individual child and parent CBT and family therapy vs. routine community services (1 study).

One study (Kolko 1996¹⁵) evaluated a) individual child and parent CBT and b) family therapy as compared to routine community services for children (72% boys) aged 6 to 13 years who had experienced physical abuse. Measure of referrals/re-report/recurrence were assessed by checking child abuse registry for outcome of children, as well as information about allegations of abuse or neglect (recurrence and referrals). Immediately post-intervention, we have very low certainty that referral/recurrence rates for the routine community services group were 250 per 1000 compared to 80 per 1000 for the individual child and parent CBT group (for a difference of 170 per 1000). Immediately post-intervention, we have very low certainty that referral/recurrence rates for the routine community services group were 250 per 1000 compared to 112 per 1000 for the family therapy group (for a difference of 138 per 1000).

Parent-child interaction therapy vs. standard community care (2 studies). One study (Chaffin 2004¹⁸) examined parent-child interaction therapy and enhanced parent-child interaction therapy compared to standard community care for children (age 2.5 to older school aged children) who had been physically abused. Measure of referrals/re-report/recurrence were assessed by checking child welfare administrative database for unduplicated physical abuse report not attributable to study surveillance effect; reports that were ruled out or screened out were excluded (re-reports/recurrence). At a mean of 850 days (just under 2 years), we have very low certainty that children in the standard community care group had re-report/recurrence rates of 486 per 1000 compared to 191 per 1000 in the parent-child interaction therapy group (for a difference of 295 per 1000). At a mean of 850 days, we have very low certainty that children in the enhanced parent-child interaction therapy group had a re-report/recurrence rate of 486 per 1000 compared to 366 per 1000 (for a difference of 120 per 1000).

SafeCare vs. Services as Usual (1 study). One study (Chaffin 2012¹⁹) investigated SafeCare vs. home-based services as usual for children up to 13 years who are experiencing child maltreatment (76%

neglect, 9% physical abuse, less than 1% sexual abuse). Measure of referrals/re-report/recurrence were assessed by checking statewide child protective services database for any report occurring after study enrollment; as dispositional practices shifted over time, authors opted to include all reports rather than only screened-in or confirmed dispositions (referrals). At 12-month follow-up (mean of 6 years assessed), we have moderate certainty that the services as usual group will experience referrals at a rate of 450 per 1000 compared to 391 per 1000 in the SafeCare group (for a difference of 59 per 1000).

Home visiting by a public health nurse vs. standard care (1 study). One study (MacMillan 2005²⁰) investigated home visiting by a public health nurses vs standard care for children younger than 13 (average age of 5 years) experiencing physical abuse or neglect. Measure of referrals/re-report/recurrence were assessed by first using child protection association reports. Then, two experts in child maltreatment (adjudicators), masked to group assignment, independently assessed the summaries for every incident or visit to determine whether they represented occurrence of physical abuse or neglect (recurrence). At 12-month follow up, we have low certainty that children in the standard care group will experience recurrence of physical abuse at a rate of 431 per 1000 compared to 330 per 1000 for children receiving home visits from a public health nurse (for a difference of 101 per 1000). At 12-month follow-up we have low certainty that children in the standard care group will experience recurrence of neglect at a rate of 514 per 1000 compared to 467 per 1000 for children receiving home visits from a public health nurses (for a difference of 47 per 1000).

Multisystemic therapy vs enhanced outpatient treatment (1 study). One study (Swenson 2010²¹) reported about multisystemic therapy vs. enhanced outpatient treatment for adolescent boys/girls ages 10 to 17 years who were exposed to physical abuse. Measure of referrals/re-report/recurrence were assessed by assessing new reports of abuse of the target child, or abuse of any child by the target parent (re-reports/recurrence). At 16-month follow up, we have very low certainty that the enhanced outpatient treatment group had re-report/recurrence rates of 119 per 1000 compared to the 45 per 1000 in the multisystemic therapy group (for a difference of 74 per 1000).

Project Support vs. treatment as usual (1 study). One study (Jouriles 2010²²) reported about Project Support for children ages 3 to 8 years for children exposed to physical abuse and neglect. Measure of referrals/re-report/recurrence were assessed by checking child protective services records to assess whether participating families had been again referred to CPS for child maltreatment during 20 months following their baseline assessment (referrals). At 20 months follow-up, we have very low certainty that referral rates of in the treatment as usual group were 278 per 1000 compared to 258 per 1000 in the Project Support intervention (for a difference of 20 per 1000).

3.3 Interventions for non-caregivers who maltreat children

Participant and study characteristics. Five studies (all RCTs) addressed interventions for non-caregivers. One study (Borduin 1990²³) addressed multisystemic therapy for adolescent juvenile sexual offenders (mean age of 14 years). The other four studies addressed adult men who had committed sexual offenses, including one that addressed cognitive behavioural therapy (Marques 1994²⁵), one study (Romero 1983²⁶) that addressed group psychotherapy, one study (Langevin 1979²⁷) that addressed assertion therapy compared to the pharmaceutical “Provera”, and one study (McConaghy 1988²⁸) that addressed a) imaginal desensitization, b) the pharmaceutical “Medroxyprogesterone”, and c) imaginal desensitization plus Medroxyprogesterone. All studies took place in high-income countries, including the U.S. (Borduin 1990²³, Marques 1994²⁵, Romero 1983²⁶), Canada (Langevin 1979²⁷), and Australia (McConaghy 1988²⁸).

Risk of bias. The complete risk of bias table for the included studies is found in Appendix IV. All studies had high risk of bias for blinding of participants/providers; it is challenging to blind these groups for psychosocial interventions, but for the pharmacological interventions participants were aware of their intervention too. In terms of blinding outcome assessment (i.e., performance bias due to knowledge of the allocated interventions by participants and/or personnel during the study), Borduin 2009²³, Langevin 1979²⁷, and McConaghy 1988²⁸ had high risk for this category for using self-report data. Langevin 1979²⁷, and McConaghy 1988²⁸ also had high risk of bias for incomplete outcomes, due to large numbers of drop outs in the pharmacological arms of the studies (the Provera arm of the Langevin 1979²⁷ study and the Medroxyprogesterone arms of the McConaghy 1988²⁸ study). Langevin 1979²⁷, and McConaghy 1988²⁸ also had high risk of bias for sequence generation due to participants volunteering for treatment. Overall, Langevin 1979²⁷ and McConaghy 1988²⁸ suffer from very serious risk of bias, and the other studies Borduin 2009²³, Marques 1994²⁵, and Romero 1983²⁶ suffer from serious risk of bias.

GRADE assessments. All of the non-caregiver studies (Borduin 2009²³, Marques 1994²⁵, Romero 1983²⁶, Langevin 1979²⁷, and McConaghy 1988²⁸) were downgraded for serious risk of bias. The Marques 1994²⁵ study, as it was only downgraded for serious risk of bias, can be considered moderate certainty. The Romero 1983²⁶ study, was downgraded for serious risk of bias and serious imprecision, so can be considered low certainty. The other three studies (Borduin 2009²³, Langevin 1979²⁷, and McConaghy 1988²⁸) were downgraded for serious or very serious risk of bias, as well as very serious imprecision and so are considered very low certainty evidence. Very low certainty evidence suggests that we have very little

confidence in the effect estimate and the true effect is likely to be substantially different from the estimate of effect. It is likely that further research could have an impact on the estimate of effect.

Outcomes.

Multisystemic therapy vs. services as usual (1 study). One study (Borduin 2009²³) considered multisystemic therapy for adolescents (98% boys) an average age of 14 years who were considered “juvenile sexual offenders”. We have very low certainty that multisystemic therapy may have a large reduction in self-reported criminal activity (M=-6.60, 95% CI, -10.41 to -2.79) (using the Self-Reported Delinquency Scale, where youths self-report criminal activity in the past three months) and a large reduction in the mean number of days arrested (M=-0.66, 95% CI, -1.17 to -0.15). At an average follow-up length of 8.9 years, we have very low certainty that 458 per 1000 of the youth in the usual services group will have at least one arrest for sexual crimes, compared to 85 per 1000 of the multisystemic therapy group (for a difference of 373 per 1000). At an average follow-up length of 8.9 years, we have very low certainty that 583 per 1000 of the youth in the usual services group will have at least one arrest for non-sexual crimes compared to 289 per 1000 of the youth in the multisystemic therapy group (for a difference of 294 per 1000).

Cognitive behavioural therapy vs. no treatment (1 study). One study (Marques 1994²⁵) addressed cognitive behavioural therapy for adult men who had been arrested for child sexual molestation or rape (presumably rape of adult women, although the study does not indicate explicitly); this intervention involved two years of in-hospital intensive treatment plus one year of an aftercare program compared to no treatment (remained in prison). We have moderate certainty at 12-years follow-up, that 200 per 1000 of the no treatment group will have a sexual re-offence vs. 220 per 1000 in the treatment group (where the no treatment group shows a benefit of 20 per 1000).

Group psychotherapy vs. probation only (1 study). One study (Romero 1983²⁶) addressed group psychotherapy vs. probation only (routine check-in with probation officer monthly) for adult sexual offenders (“48 pedophiles, 39 exhibitionists, and 144 assaulters”). We have low certainty that at 10-years follow-up, 72 per 1000 of the probation only group will have a sexual re-offence (arrest) compared to 135 per 1000 in the group psychotherapy group (where the probation only group shows a benefit of 63 per 1000).

Assertion therapy vs Provera & assertion therapy (1 study). One study (Langevin 1979²⁷) addressed assertion therapy and Provera (aka Medroxyprogesterone, a female hormone that is used to “curb sexual appetite”) vs. Provera alone for adult males who were “genital exhibitionists”. At post-

treatment, we have very low certainty that 353 per 1000 of the Provera alone group will have a subsequent involvement with court vs. 66 per 1000 of the Provera plus assertion therapy group (for a difference of 287 per 1000).

Imaginal desensitization vs. medroxyprogesterone (1 study). One study (McConaghy 1988) assessed imaginal desensitization vs. medroxyprogesterone vs. medroxyprogesterone & imaginal desensitization for adult sexual offenders (“12 reported exhibitionism, 8 pedophilia, 5 fetishism, 4 transvestism²³, and 3 voyeurism”). ***Medroxyprogesterone vs. imaginal desensitization.*** At 1-month follow-up, we have very low certainty that 100 per 1000 of the medroxyprogesterone group will have self-reported “anomalous urges” compared to 300 per 1000 in the imaginal desensitization group (for a difference of 200 per 1000), at 1-year follow-up we have very low certainty that 111 per 1000 of the medroxyprogesterone group will have self-reported “anomalous urges” compared to 300 per 1000 in the imaginal desensitization group (for a difference of 189 per 1000), and at 2-years follow-up we have very low certainty that 333 per 1000 of the medroxyprogesterone group will have self-reported “anomalous urges” compared to 399 per 1000 in the imaginal desensitization group (for a difference of 66 per 1000). ***Medroxyprogesterone vs. imaginal desensitization (M + ID) plus medroxyprogesterone.*** At 1-month follow up, we have very low certainty that 100 per 1000 of the M + ID group will have anomalous urges compared to 100 per 1000 in the M only group; at 1 year follow-up we have very low certainty that 100 per 1000 of the M + ID will have anomalous urges vs. 333 per 1000 in the M only group (for a difference of 233 per 1000); at 2-year follow-up we have very low certainty that 100 per 1000 of the M + ID group will have anomalous urges vs. 444 per 1000 in the M alone group (for a difference of 344 per 1000). ***Imaginal desensitisation vs. imaginal desensitization + medroxyprogesterone (ID + M).*** At 1-month follow-up, we have very low certainty that 100 per 1000 of the ID + M group will have anomalous urges vs. 300 per 1000 in the ID alone group (for a difference of 200 per 1000); at 1-year follow-up we have very low certainty that 100 per 1000 of the ID + M group will have anomalous urges vs. 300 per 1000 in the ID alone group (for a difference of 200 per 1000); at 2-year follow-up we have very low certainty that the 100 per 1000 of the ID + M group will have anomalous urges vs. 400 per 1000 in the ID only group (for a difference of 400 per 1000).

²³ Note that lesbian, bisexual, gay, and transgender populations have been historically deemed mentally ill²⁹ and unfortunately this study defines transgender identity as some kind of perpetration, which is now recognized as wrong.

4.0 Discussion

In this review we investigated the effectiveness of psychosocial and pharmacological interventions for caregivers and non-caregivers who have maltreated children. Very little high-quality evidence is available that addresses re-report and recurrence rates for those who maltreat children. There is some evidence that suggests potential benefits of certain interventions for caregivers who maltreat children. For example, we have moderate certainty that at 12-months follow-up, SafeCare, a manualized, home-based structured behavioral skills training model that addresses parent/child interactions, home safety, and child health, leads to a reduction in 59 per 1000 re-reports of maltreatment compared to services as usual. We also have very low certainty that others interventions, such as parent-child interaction therapy, show reduction in re-report rates of 295 per 1000 over a two-year period. These interventions show promise for both reducing re-reports and, in the case of parent-child interaction therapy, for reducing internalizing and externalizing symptoms and increasing positive parent-child interaction. Where feasible and acceptable, these interventions may be appropriate for reducing maltreatment in children's lives.

However, the evidence related to non-caregivers who maltreat children is much less certain. Evidence related to pharmacological interventions for non-caregivers who sexually abuse children is very low quality and is associated with side effects. In relation to pharmacological guidance, practitioners may want to refer to existing practice guidelines related to paraphilias.^{30,31} In terms of psychosocial interventions, we have very low certainty that multisystemic therapy, an intensive family- and community-based treatment program, may lead to 379 per 1000 less arrests for sexual crimes. A recent meta-analysis of studies related to multisystemic therapy for youth, for example, suggests that it shows small reductions in delinquency, psychopathology, substance use, family factors, out-of-home placement, and peer factors, but no significant effect on skills and cognitions.³² While more studies addressing youth who maltreat children are needed to improve our certainty in the evidence for this population, this intervention shows promise, when available and feasible, for youth who are maltreating children.

5.0 References

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Appendix I: Complete Search Strategies

Database	Total Results	Dates Searched
Cochrane	39	- December 6, 2016
CINAHL	301	- December 6, 2016
Criminal Justice Abstracts	1053	December 6, 2016
Embase	241	December 6, 2016
ERIC	329	December 6, 2016
Web of Science	1863	December 6, 2016
MEDLINE (OVID)	1027	1946 - December 6, 2016
PsycINFO	298	1967 – December 6, 2016
Social Services Abstracts	442	December 6, 2016
Social Work Abstracts	137	December 6, 2016
BBO	3	December 6, 2016
BDENF	18	December 6, 2016
ADOLEC	532	December 6, 2016
IBECs	43	December 6, 2016
LILACS	279	December 6, 2016
MedCarib	22	December 6, 2016
CidSaude	0	December 6, 2016
Desastres	0	December 6, 2016
HomeoIndex	0	December 6, 2016
PAHO	0	December 6, 2016
REDIPISCA	2	December 6, 2016
Sociological Abstracts	387	December 6, 2016
WHOLIS	2	December 6, 2016
Total	7018	
After removal of duplicates		

CINAHL

Search date: 2 January 2017

#	Query	Results
S11	S3 AND S6 AND S10	301
S10	S7 OR S8 OR S9	378,833
S9	PT randomized controlled trial	30,863
S8	AB(randomi#ed or randomly or placebo## or trial# or group#)	354,068
S7	(MH "Randomized Controlled Trials") OR (MH "Triple-Blind Studies") OR (MH "Single-Blind Studies") OR (MH "Double-Blind Studies")	53,488

S6	S4 OR S5	13,273
S5	(perpetrator# or abuser# or batterer# or molester# or rapist# or offender# or pedophil* or paedophil* or predator# or grooming or aggressor# or aggressor# or paraphilic* or exhibitionis*)	13,128
S4	(MH "Paraphilias") OR (MH "Sex Offenders")	1,236
S3	S1 OR S2	19,448
S2	((child* or girl# or boy# or infant* or baby or babies or toddler* or preschool* or "pre-school*" or "pre school*" or "young person" or "young people" or teen* or adolescen* or youth* or preteen* or tween*) N5 (abuse# or abusing or maltreat* or neglect* or assault* or rape# or raping or molest* or exploit* or (sex* N2 abus*)))	19,017
S1	(MH "Child Abuse+") OR (MH "Child Abuse, Sexual") OR (MH "Shaken Baby Syndrome") OR (MH "Incest")	12,830

Criminal Justice Abstracts

Search date: 5 January 2017

#	Query	Limiters/Expanders	Results
S4	S1 AND S2 AND S3	Limiters - Publication Type: Academic Journal, Conference Proceeding, Periodical, Review Search modes - Boolean/Phrase	1,053
S3	((ZU "randomized controlled trials") or (ZU "clinical trials")) OR ((randomi#ed or randomly or placebo## or trial# or group#))	Search modes - Boolean/Phrase	94,252
S2	((ZU "pedophilia") or (ZU "exhibitionism (sexual behavior)") or (ZU "rapists") or (ZU "abusive behavior") or (ZU "abusive lesbian partners") or (ZU "abusive men") or (ZU "abusive mothers") or (ZU "abusive parents") or (ZU "abusive women")) OR ((perpetrator# or abuser# or batterer# or molester# or rapist# or offender# or pedophil* or paedophil* or predator# or grooming or aggressor# or aggressor# or paraphilic* or exhibitionis*)) OR SU ((perpetrator# or abuser# or batterer# or molester# or rapist# or offender# or pedophil* or paedophil* or predator# or grooming or aggressor# or aggressor# or paraphilic* or exhibitionis*)) OR KW ((perpetrator# or abuser# or batterer# or molester# or rapist# or offender# or pedophil* or paedophil* or predator# or grooming or aggressor# or aggressor# or paraphilic* or exhibitionis*)))	Search modes - Boolean/Phrase	42,965
S1	((ZU "child abuse") or (ZU "incest") or (ZU "child sexual abuse") or (ZU "shaken baby syndrome")) OR (((child* or girl# or boy# or infant* or baby or babies or toddler* or preschool* or "pre-school*" or "pre school*" or "young person" or "young people" or teen* or adolescen* or youth* or preteen* or tween*) N5 (abuse# or abusing or maltreat* or neglect* or assault* or rape# or raping or molest* or exploit* or (sex* N2 abus*))))	Search modes - Boolean/Phrase	18,194

Database(s): Embase Classic+Embase 1947 to 2016 December 30

#	Searches	Results
1	paraphilic disorder/ or exhibitionism disorder/ or pedophilia disorder/ or pedophilia/ or exhibitionism/	1841
2	(perpetrator? or abuser? or batterer? or molester? or rapist? or offender? or p?edophil* or predator? or grooming or aggres?or? or paraphilic* or exhibitionis*).tw,kw.	58803
3	1 or 2 [PERPETRATOR]	59347
4	child abuse/ or child abuse survivor/ or child neglect/ or child sexual abuse/ or shaken baby syndrome/ or incest/	35760
5	((child* or girl? or boy? or infant* or baby or babies or toddler* or preschool* or pre-school* or pre school* or young person or young people or teen* or adolescen* or youth* or preteen* or tween*) adj5 (abuse? or abusing or maltreat* or neglect* or assault* or rape? or raping or molest* or exploit* or (sex* adj2 abus*))).tw,kw.	34245
6	4 or 5 [CM]	48495
7	randomized controlled trial/ or clinical trial/ or randomization/ or single blind procedure/ or double blind procedure/ or crossover procedure/ or placebo/ or (randomi?ed or randomly or (random adj2 allocat*) or rct or ((single or double or triple or treble) adj1 blind*) or placebo??).tw,kw. or dt.fs.	4507076
8	3 and 6 and 7	241

Database(s): Epub Ahead of Print, In-Process & Other Non-Indexed Citations, Ovid MEDLINE(R) Daily and Ovid MEDLINE(R) 1946 to Present

#	Searches	Results
1	exp child abuse/ or shaken baby syndrome/ or incest/	30689
2	((child* or girl? or boy? or infant* or baby or babies or toddler* or preschool* or pre-school* or pre school* or young person or young people or teen* or adolescen* or youth* or preteen* or tween*) adj5 (abuse? or abusing or maltreat* or neglect* or assault* or rape? or raping or molest* or exploit* or (sex* adj2 abus*))).tw,kw.	30392
3	1 or 2 [CM]	43541
4	paraphilic disorders/ or exhibitionism/ or pedophilia/	3782
5	(perpetrator? or abuser? or batterer? or molester? or rapist? or offender? or p?edophil* or predator? or grooming or aggres?or? or paraphilic* or exhibitionis*).tw,kw.	54002
6	4 or 5 [PERPETRATOR]	56438
7	randomized controlled trial.pt.	505473
8	controlled clinical trial.pt.	98045
9	(randomi?ed or randomly or placebo?? or trial? or group?).ab. or drug therapy.fs.	5517581
10	exp controlled clinical trial/	598594
11	or/7-10 [RCT]	5597588
12	3 and 6 and 11	1099
13	remove duplicates from 12	1027

Database(s): PsycINFO 1967 to December Week 4 2016

Search Strategy:

#	Searches	Results
1	child neglect/ or child abuse reporting/ or child abuse/ or incest/	28540
2	((child* or girl? or boy? or infant* or baby or babies or toddler* or preschool* or pre-school* or pre school* or young person or young people or teen* or adolescen* or youth* or preteen* or tween*) adj5 (abuse? or abusing or maltreat* or neglect* or assault* or rape? or raping or molest* or exploit* or (sex* adj2 abus*))).tw.	44539
3	1 or 2 [CM]	48742
4	perpetrators/ or pedophilia/ or criminal responsibility/ or voyeurism/ or exhibitionism/	7956
5	(perpetrator? or abuser? or batterer? or molester? or rapist? or offender? or p?edophil* or predator? or grooming or aggres?or? or paraphilic* or exhibitionis*).tw.	60772
6	4 or 5 [PERPETRATOR]	62726

7 treatment effectiveness evaluation/ or exp treatment outcomes/ or placebo/ or followup studies/ or (randomi?ed or randomly or (random adj2 allocat*) or rct or ((single or double or triple or treble) adj1 blind*) or placebo??).mp.	189768
8 3 and 6 and 7	299
9 remove duplicates from 8	298

Sociological Abstracts

Search date: 3 January 2017; 387 Successfully exported

S4 [S1 AND S2 AND S3](#)

390°

S3 [randomis* or randomiz* or randomly or placebo* or trial or trials or group or groups or blind*](#)

257,406°

S2 [\(SU.EXACT\("Sexual Deviation"\) OR SU.EXACT\("Offenders"\) OR SU.EXACT\("Sex Offenders"\) \) OR \(ti\(perpetrator or perpetrators or abuser or abusers or batterer or batterers or molester or molesters or rapist or rapists or offender or offenders or pedophil* or paedophil* or grooming or aggressor or aggressors or paraphilic* or exhibitionis*\) OR ab\(perpetrator or perpetrators or abuser or abusers or batterer or batterers or molester or molesters or rapist or rapists or offender or offenders or pedophil* or paedophil* or grooming or aggressor or aggressors or paraphilic* or exhibitionis*\)\)](#)

16,853°

S1 [\(\(ti\(\(\(child* or girl or girls or boy or boys or infant* or baby or babies or toddler* or preschool* or young* or teen* or adolescen* or preteen* or tween*\) N/5 abuse\) OR \(\(child* or girl or girls or boy or boys or infant* or baby or babies or toddler* or preschool* or young* or teen* or adolescen* or preteen* or tween*\) N/5 abused\) OR \(\(child* or girl or girls or boy or boys or infant* or baby or babies or toddler* or preschool* or young* or teen* or adolescen* or preteen* or tween*\) N/5 abuses\) OR \(\(child* or girl or girls or boy or boys or infant* or baby or babies or toddler* or preschool* or young* or teen* or adolescen* or preteen* or tween*\) N/5 abusing\) OR \(\(child* or girl or girls or boy or boys or infant* or baby or babies or toddler* or preschool* or young* or teen* or adolescen* or preteen* or tween*\) N/5 maltreat*\) OR \(\(child* or girl or girls or boy or boys or infant* or baby or babies or toddler* or preschool* or young* or teen* or adolescen* or preteen* or tween*\) N/5 assault*\) OR \(\(child* or girl or girls or boy or boys or infant* or baby or babies or toddler* or preschool* or young* or teen* or adolescen* or preteen* or tween*\) N/5 rape\) Or \(\(child* or girl or girls or boy or boys or infant* or baby or babies or toddler* or preschool* or young* or teen* or adolescen* or preteen* or tween*\) N/5 raped\) OR \(\(child* or girl or girls or boy or boys or infant* or baby or babies or toddler* or preschool* or young* or teen* or adolescen* or preteen* or tween*\) N/5 rapes\) OR \(\(child* or girl or girls or boy or boys or infant* or baby or babies or toddler* or preschool* or young* or teen* or adolescen* or preteen* or tween*\) N/5 raping\) OR \(\(child* or girl or girls or boy or boys or infant* or baby or babies or toddler* or preschool* or young* or teen* or adolescen* or preteen* or tween*\) N/5 molest*\) OR \(\(child* or girl or girls or boy or boys or infant* or baby or babies or toddler* or preschool* or young* or teen* or adolescen* or preteen* or tween*\) N/5 exploit*\)\) OR ab\(\(\(child* or girl or girls or boy or boys or infant* or baby or babies or toddler* or preschool* or young* or teen* or adolescen* or preteen* or tween*\) N/5 abuse\) OR \(\(child* or girl or girls or boy or boys or infant* or baby or babies or toddler* or preschool* or young* or teen* or adolescen* or preteen* or tween*\) N/5 abused\) OR \(\(child* or girl or girls or boy or boys or infant* or baby or babies or toddler* or preschool* or young* or teen* or adolescen* or preteen* or tween*\) N/5 abuses\) OR \(\(child* or girl or girls or boy or boys or infant* or baby or babies or toddler* or preschool* or young* or teen* or adolescen* or preteen* or tween*\) N/5 abusing\) OR \(\(child* or girl or girls or boy or boys or infant* or baby or babies or toddler* or preschool* or young* or teen* or adolescen* or preteen* or tween*\) N/5 maltreat*\) OR \(\(child* or girl or girls or boy or boys or infant* or baby or babies or toddler* or preschool* or young* or teen* or adolescen* or preteen* or tween*\) N/5 assault*\) OR \(\(child* or girl or girls or boy or boys or infant* or baby or babies or toddler* or preschool* or young* or teen* or adolescen* or preteen* or tween*\) N/5 rape\) Or \(\(child* or girl or girls or boy or boys or infant* or baby or babies or toddler* or preschool* or young* or teen* or adolescen* or preteen* or tween*\) N/5 raped\) OR \(\(child* or girl or girls or boy or boys or infant* or baby or babies or toddler* or preschool* or young* or teen* or adolescen* or preteen* or tween*\) N/5 rapes\) OR \(\(child* or girl or girls or boy or boys or infant* or baby or babies or toddler* or preschool* or young* or teen* or adolescen* or preteen* or tween*\) N/5 molest*\) OR \(\(child* or girl or girls or boy or boys or](#)

8,340°

[infant* or baby or babies or toddler* or preschool* or young* or teen* or adolescen* or preteen* or tween*\) N/5 exploit*\)\) \) OR \(ab\(\(\(child* or girl or girls or boy or boys or infant* or baby or babies or toddler* or preschool* or young* or teen* or adolescen* or preteen* or tween*\) N/5 abuse\) OR \(\(child* or girl or girls or boy or boys or infant* or baby or babies or toddler* or preschool* or young* or teen* or adolescen* or preteen* or tween*\) N/5 abuses\) OR \(\(child* or girl or girls or boy or boys or infant* or baby or babies or toddler* or preschool* or young* or teen* or adolescen* or preteen* or tween*\) N/5 abusing\) OR \(\(child* or girl or girls or boy or boys or infant* or baby or babies or toddler* or preschool* or young* or teen* or adolescen* or preteen* or tween*\) N/5 maltreat*\) OR \(\(child* or girl or girls or boy or boys or infant* or baby or babies or toddler* or preschool* or young* or teen* or adolescen* or preteen* or tween*\) N/5 assault*\) OR \(\(child* or girl or girls or boy or boys or infant* or baby or babies or toddler* or preschool* or young* or teen* or adolescen* or preteen* or tween*\) N/5 rape\) Or \(\(child* or girl or girls or boy or boys or infant* or baby or babies or toddler* or preschool* or young* or teen* or adolescen* or preteen* or tween*\) N/5 raped\) OR \(\(child* or girl or girls or boy or boys or infant* or baby or babies or toddler* or preschool* or young* or teen* or adolescen* or preteen* or tween*\) N/5 rapes\) OR \(\(child* or girl or girls or boy or boys or infant* or baby or babies or toddler* or preschool* or young* or teen* or adolescen* or preteen* or tween*\) N/5 raping\) OR \(\(child* or girl or girls or boy or boys or infant* or baby or babies or toddler* or preschool* or young* or teen* or adolescen* or preteen* or tween*\) N/5 molest*\) OR \(\(child* or girl or girls or boy or boys or infant* or baby or babies or toddler* or preschool* or young* or teen* or adolescen* or preteen* or tween*\) N/5 exploit*\)\) OR ab\(\(\(child* or girl or girls or boy or boys or infant* or baby or babies or toddler* or preschool* or young* or teen* or adolescen* or preteen* or tween*\) N/5 abuse\) OR \(\(child* or girl or girls or boy or boys or infant* or baby or babies or toddler* or preschool* or young* or teen* or adolescen* or preteen* or tween*\) N/5 abused\) OR \(\(child* or girl or girls or boy or boys or infant* or baby or babies or toddler* or preschool* or young* or teen* or adolescen* or preteen* or tween*\) N/5 abuses\) OR \(\(child* or girl or girls or boy or boys or infant* or baby or babies or toddler* or preschool* or young* or teen* or adolescen* or preteen* or tween*\) N/5 abusing\) OR \(\(child* or girl or girls or boy or boys or infant* or baby or babies or toddler* or preschool* or young* or teen* or adolescen* or preteen* or tween*\) N/5 maltreat*\) OR \(\(child* or girl or girls or boy or boys or infant* or baby or babies or toddler* or preschool* or young* or teen* or adolescen* or preteen* or tween*\) N/5 assault*\) OR \(\(child* or girl or girls or boy or boys or infant* or baby or babies or toddler* or preschool* or young* or teen* or adolescen* or preteen* or tween*\) N/5 rape\) Or \(\(child* or girl or girls or boy or boys or infant* or baby or babies or toddler* or preschool* or young* or teen* or adolescen* or preteen* or tween*\) N/5 raped\) OR \(\(child* or girl or girls or boy or boys or infant* or baby or babies or toddler* or preschool* or young* or teen* or adolescen* or preteen* or tween*\) N/5 rapes\) OR \(\(child* or girl or girls or boy or boys or infant* or baby or babies or toddler* or preschool* or young* or teen* or adolescen* or preteen* or tween*\) N/5 raping\) OR \(\(child* or girl or girls or boy or boys or infant* or baby or babies or toddler* or preschool* or young* or teen* or adolescen* or preteen* or tween*\) N/5 molest*\) OR \(\(child* or girl or girls or boy or boys or infant* or baby or babies or toddler* or preschool* or young* or teen* or adolescen* or preteen* or tween*\) N/5 exploit*\)\) \) \) OR \(SU.EXACT\("Child Sexual Abuse"\) OR SU.EXACT\("Child Abuse"\) OR SU.EXACT\("Child Neglect"\) OR SU.EXACT\("Incest"\)\)](#)

ERIC

Search date: 5 January 2017

Set	Search	Results
S4	S1 AND S2 AND S3	329°
S3	((SU.EXACT("Child Welfare") OR SU.EXACT("Child Neglect") OR SU.EXACT("Child Abuse")) OR ((SU.EXACT("Child Health") OR SU.EXACT("Children") OR SU.EXACT("Secondary School Students") OR SU.EXACT("High School Students") OR SU.EXACT("Preadolescents") OR SU.EXACT("Youth") OR SU.EXACT("Adolescents") OR SU.EXACT("Late Adolescents") OR SU.EXACT("Early Adolescents"))) AND (SU.EXACT("Sexual Abuse") OR SU.EXACT("Rape")))) OR ((ti(((child* OR girl OR girls OR boy OR boys OR infant* OR baby OR babies OR toddler* OR preschool* OR young* OR teen* OR adolescen* OR preteen* OR tween*) NEAR/5 abuse) OR ((child* OR girl OR girls OR boy OR boys OR infant* OR baby	15,710°

[illegible]

Set	Search	Results
	babies OR toddler* OR preschool* OR young* OR teen* OR adolescen* OR preteen* OR tween*) NEAR/5 assault*) OR ((child* OR girl OR girls OR boy OR boys OR infant* OR baby OR babies OR toddler* OR preschool* OR young* OR teen* OR adolescen* OR preteen* OR tween*) NEAR/5 rape) OR ((child* OR girl OR girls OR boy OR boys OR infant* OR baby OR babies OR toddler* OR preschool* OR young* OR teen* OR adolescen* OR preteen* OR tween*) NEAR/5 raped) OR ((child* OR girl OR girls OR boy OR boys OR infant* OR baby OR babies OR toddler* OR preschool* OR young* OR teen* OR adolescen* OR preteen* OR tween*) NEAR/5 rapes) OR ((child* OR girl OR girls OR boy OR boys OR infant* OR baby OR babies OR toddler* OR preschool* OR young* OR teen* OR adolescen* OR preteen* OR tween*) NEAR/5 raping) OR ((child* OR girl OR girls OR boy OR boys OR infant* OR baby OR babies OR toddler* OR preschool* OR young* OR teen* OR adolescen* OR preteen* OR tween*) NEAR/5 molest*) OR ((child* OR girl OR girls OR boy OR boys OR infant* OR baby OR babies OR toddler* OR preschool* OR young* OR teen* OR adolescen* OR preteen* OR tween*) NEAR/5 exploit*)) OR ab(((child* OR girl OR girls OR boy OR boys OR infant* OR baby OR babies OR toddler* OR preschool* OR young* OR teen* OR adolescen* OR preteen* OR tween*) NEAR/5 abuse) OR ((child* OR girl OR girls OR boy OR boys OR infant* OR baby OR babies OR toddler* OR preschool* OR young* OR teen* OR adolescen* OR preteen* OR tween*) NEAR/5 abused) OR ((child* OR girl OR girls OR boy OR boys OR infant* OR baby OR babies OR toddler* OR preschool* OR young* OR teen* OR adolescen* OR preteen* OR tween*) NEAR/5 abuses) OR ((child* OR girl OR girls OR boy OR boys OR infant* OR baby OR babies OR toddler* OR preschool* OR young* OR teen* OR adolescen* OR preteen* OR tween*) NEAR/5 abusing) OR ((child* OR girl OR girls OR boy OR boys OR infant* OR baby OR babies OR toddler* OR preschool* OR young* OR teen* OR adolescen* OR preteen* OR tween*) NEAR/5 maltreat*) OR ((child* OR girl OR girls OR boy OR boys OR infant* OR baby OR babies OR toddler* OR preschool* OR young* OR teen* OR adolescen* OR preteen* OR tween*) NEAR/5 assault*) OR ((child* OR girl OR girls OR boy OR boys OR infant* OR baby OR babies OR toddler* OR preschool* OR young* OR teen* OR adolescen* OR preteen* OR tween*) NEAR/5 rape) OR ((child* OR girl OR girls OR boy OR boys OR infant* OR baby OR babies OR toddler* OR preschool* OR young* OR teen* OR adolescen* OR preteen* OR tween*) NEAR/5 raped) OR ((child* OR girl OR girls OR boy OR boys OR infant* OR baby OR babies OR toddler* OR preschool* OR young* OR teen* OR adolescen* OR preteen* OR tween*) NEAR/5 rapes) OR ((child* OR girl OR girls OR boy OR boys OR infant* OR baby OR babies OR toddler* OR preschool* OR young* OR teen* OR adolescen* OR preteen* OR tween*) NEAR/5 raping) OR ((child* OR girl OR girls OR boy OR boys OR infant* OR baby OR babies OR toddler* OR preschool* OR young* OR teen* OR adolescen* OR preteen* OR tween*) NEAR/5 molest*) OR ((child* OR girl OR girls OR boy OR boys OR infant* OR baby OR babies OR toddler* OR preschool* OR young* OR teen* OR adolescen* OR preteen* OR tween*) NEAR/5 exploit*))	
S2	SU.EXACT("Criminals") OR (ti(perpetrator or perpetrators or abuser or abusers or batterer or batterers or molester or molesters or rapist or rapists or offender or offenders or pedophil* or paedophil* or grooming or aggressor or aggressors or paraphilic* or exhibitionis*) OR ab(perpetrator or perpetrators or abuser or abusers or batterer or batterers or molester or molesters or rapist or rapists or offender or offenders or pedophil* or paedophil* or grooming or aggressor or aggressors or paraphilic* or exhibitionis*))	7,025°
S1	randomis* or randomiz* or randomly or placebo* or trial or trials or group or groups or blind*	299,378°

Social Services Abstract

Search date: 5 January 2017; Note: 393 would export

Set	Search	Results
S4	S1 AND S2 AND S3	442°

[illegible]

Set	Search	Results
	((child* or girl or girls or boy or boys or infant* or baby or babies or toddler* or preschool* or young* or teen* or adolescen* or preteen* or tween*) N/5 assault*) OR ((child* or girl or girls or boy or boys or infant* or baby or babies or toddler* or preschool* or young* or teen* or adolescen* or preteen* or tween*) N/5 rape) Or ((child* or girl or girls or boy or boys or infant* or baby or babies or toddler* or preschool* or young* or teen* or adolescen* or preteen* or tween*) N/5 raped) OR ((child* or girl or girls or boy or boys or infant* or baby or babies or toddler* or preschool* or young* or teen* or adolescen* or preteen* or tween*) N/5 rapes) OR ((child* or girl or girls or boy or boys or infant* or baby or babies or toddler* or preschool* or young* or teen* or adolescen* or preteen* or tween*) N/5 raping) OR ((child* or girl or girls or boy or boys or infant* or baby or babies or toddler* or preschool* or young* or teen* or adolescen* or preteen* or tween*) N/5 molest*) OR ((child* or girl or girls or boy or boys or infant* or baby or babies or toddler* or preschool* or young* or teen* or adolescen* or preteen* or tween*) N/5 exploit*)) OR ab(((child* or girl or girls or boy or boys or infant* or baby or babies or toddler* or preschool* or young* or teen* or adolescen* or preteen* or tween*) N/5 abuse) OR ((child* or girl or girls or boy or boys or infant* or baby or babies or toddler* or preschool* or young* or teen* or adolescen* or preteen* or tween*) N/5 abused) OR ((child* or girl or girls or boy or boys or infant* or baby or babies or toddler* or preschool* or young* or teen* or adolescen* or preteen* or tween*) N/5 abuses) OR ((child* or girl or girls or boy or boys or infant* or baby or babies or toddler* or preschool* or young* or teen* or adolescen* or preteen* or tween*) N/5 abusing) OR ((child* or girl or girls or boy or boys or infant* or baby or babies or toddler* or preschool* or young* or teen* or adolescen* or preteen* or tween*) N/5 maltreat*) OR ((child* or girl or girls or boy or boys or infant* or baby or babies or toddler* or preschool* or young* or teen* or adolescen* or preteen* or tween*) N/5 assault*) OR ((child* or girl or girls or boy or boys or infant* or baby or babies or toddler* or preschool* or young* or teen* or adolescen* or preteen* or tween*) N/5 rape) Or ((child* or girl or girls or boy or boys or infant* or baby or babies or toddler* or preschool* or young* or teen* or adolescen* or preteen* or tween*) N/5 raped) OR ((child* or girl or girls or boy or boys or infant* or baby or babies or toddler* or preschool* or young* or teen* or adolescen* or preteen* or tween*) N/5 rapes) OR ((child* or girl or girls or boy or boys or infant* or baby or babies or toddler* or preschool* or young* or teen* or adolescen* or preteen* or tween*) N/5 raping) OR ((child* or girl or girls or boy or boys or infant* or baby or babies or toddler* or preschool* or young* or teen* or adolescen* or preteen* or tween*) N/5 molest*) OR ((child* or girl or girls or boy or boys or infant* or baby or babies or toddler* or preschool* or young* or teen* or adolescen* or preteen* or tween*) N/5 exploit*))) OR (SU.EXACT("Child Sexual Abuse") OR SU.EXACT("Child Abuse") OR SU.EXACT("Child Neglect") OR SU.EXACT("Incest"))	

Social Work Abstracts

Search date: 3 January 2017

#	Query	Results
S1	((child* or girl# or boy# or infant* or baby or babies or toddler* or preschool* or "pre-school*" or "pre school*" or "young person" or "young people" or teen* or adolescen* or youth* or preteen* or tween*) N5 (abuse# or abusing or maltreat* or neglect* or assault* or rape# or raping or molest* or exploit* or (sex* N2 abus*))) OR ((ZU "child abuse") or (ZU "child abuse and neglect") or (ZU "child abuse and neglect treatment program") or (ZU "child neglect") or (ZU "child protection") or (ZU "child sexual abuse") or (ZU "shaken baby syndrome") or (ZU "incest"))) AND ((perpetrator# or abuser# or batterer# or molester# or rapist# or offender# or pedophil* or paedophil* or predator# or grooming or aggresor# or aggressor# or paraphilic* or exhibitionis*)) OR SU ((perpetrator# or abuser# or batterer# or molester# or rapist# or offender# or pedophil* or paedophil* or predator# or grooming or aggresor# or aggressor# or paraphilic* or exhibitionis*)) OR ((perpetrator# or abuser# or batterer# or molester# or rapist# or offender# or pedophil* or paedophil* or predator# or grooming or aggresor# or aggressor# or paraphilic* or exhibitionis*)) OR ((ZU "child abusers") or (ZU "abusers") or (ZU "rapists") or (ZU "pedophilia") or (ZU "exhibitionism") or (ZU "offenders"))) AND ((randomi#ed or randomly or placebo## or trial# or group#)))	137

Database : **ADOLEC**

Search Date: 15 January 2017

Search on : (child\$ OR adolescen\$ OR teen\$ OR baby OR babies) AND (abuse OR abused OR abusing OR molest\$ OR batter\$ OR maltreat\$ OR neglect\$ OR rape OR raped OR rapes OR exploit\$) [Words] and (perpetrator OR perpetrators OR abuser OR abusers OR batterer OR batterers OR molester OR molesters OR rapist OR rapists OR offender OR offenders OR pedophil\$ OR paedophil\$ OR predator OR predators OR grooming OR aggressor OR aggressor OR paraphilic\$ or exhibitionis\$) [Words]

References found : **532** [[refine](#)]

Database : **BBO**

Search Date: 15 January 2017

Search on : (child\$ OR adolescen\$ OR teen\$ OR baby OR babies) AND (abuse OR abused OR abusing OR molest\$ OR batter\$ OR maltreat\$ OR neglect\$ OR rape OR raped OR rapes OR exploit\$) [Words] and (perpetrator OR perpetrators OR abuser OR abusers OR batterer OR batterers OR molester OR molesters OR rapist OR rapists OR offender OR offenders OR pedophil\$ OR paedophil\$ OR predator OR predators OR grooming OR aggressor OR aggressor OR paraphilic\$ or exhibitionis\$) [Words]

References found : **3** [[refine](#)]

Database : **BDENF**

Search Date: 15 January 2017

Search on : (child\$ OR adolescen\$ OR teen\$ OR baby OR babies) AND (abuse OR abused OR abusing OR molest\$ OR batter\$ OR maltreat\$ OR neglect\$ OR rape OR raped OR rapes OR exploit\$) [Words] and (perpetrator OR perpetrators OR abuser OR abusers OR batterer OR batterers OR molester OR molesters OR rapist OR rapists OR offender OR offenders OR pedophil\$ OR paedophil\$ OR predator OR predators OR grooming OR aggressor OR aggressor OR paraphilic\$ or exhibitionis\$) [Words]

References found : **18** [[refine](#)]

Database : **CidSaude**

Search Date: 15 January 2017

Search on : (child\$ OR adolescen\$ OR teen\$ OR baby OR babies) AND (abuse OR abused OR abusing OR molest\$ OR batter\$ OR maltreat\$ OR neglect\$ OR rape OR raped OR rapes OR exploit\$) [Words] and (perpetrator OR perpetrators OR abuser OR abusers OR batterer OR batterers OR molester OR molesters OR rapist OR rapists OR offender OR offenders OR pedophil\$ OR paedophil\$ OR predator OR predators OR grooming OR aggressor OR aggressor OR paraphilic\$ or exhibitionis\$) [Words]

References found : 0

Database : **DESASTRES**
Search Date: 15 January 2017

Search on : (child\$ OR adolescen\$ OR teen\$ OR baby OR babies) AND (abuse OR abused OR abusing OR molest\$ OR batter\$ OR maltreat\$ OR neglect\$ OR rape OR raped OR rapes OR exploit\$) [Words] and (perpetrator OR perpetrators OR abuser OR abusers OR batterer OR batterers OR molester OR molesters OR rapist OR rapists OR offender OR offenders OR pedophil\$ OR paedophil\$ OR predator OR predators OR grooming OR aggressor OR aggressor OR paraphilic\$ or exhibitionis\$) [Words]

References found : 0

Database : **HomeoIndex**
Search Date: 15 January 2017

Search on : (child\$ OR adolescen\$ OR teen\$ OR baby OR babies) AND (abuse OR abused OR abusing OR molest\$ OR batter\$ OR maltreat\$ OR neglect\$ OR rape OR raped OR rapes OR exploit\$) [Words] and (perpetrator OR perpetrators OR abuser OR abusers OR batterer OR batterers OR molester OR molesters OR rapist OR rapists OR offender OR offenders OR pedophil\$ OR paedophil\$ OR predator OR predators OR grooming OR aggressor OR aggressor OR paraphilic\$ or exhibitionis\$) [Words]

References found : 0

Database : **IBECS**
Search Date: 15 January 2017

Search on : (child\$ OR adolescen\$ OR teen\$ OR baby OR babies) AND (abuse OR abused OR abusing OR molest\$ OR batter\$ OR maltreat\$ OR neglect\$ OR rape OR raped OR rapes OR exploit\$) [Words] and (perpetrator OR perpetrators OR abuser OR abusers OR batterer OR batterers OR molester OR molesters OR rapist OR rapists OR offender OR offenders OR pedophil\$ OR paedophil\$ OR predator OR predators OR grooming OR aggressor OR aggressor OR paraphilic\$ or exhibitionis\$) [Words]

References found : 43 [\[refine\]](#)

Database : **LILACS**
Search Date: 15 January 2017

Search on : (child\$ OR adolescen\$ OR teen\$ OR baby OR babies) AND (abuse OR abused OR abusing OR molest\$ OR batter\$ OR maltreat\$ OR neglect\$ OR rape OR raped OR rapes OR exploit\$) [Words] and perpetrator OR perpetrators OR abuser OR abusers OR batterer OR batterers OR molester OR molesters OR rapist OR rapists OR offender OR offenders OR pedophil\$ OR paedophil\$ OR

predator OR predators OR grooming OR aggressor OR aggressor OR paraphilic\$ or exhibitionis\$ [Words]

References found : **279** [[refine](#)]

Database : **MedCarib**

Search Date: 15 January 2017

Search on : **(child\$ OR adolescen\$ OR teen\$ OR baby OR babies) AND (abuse OR abused OR abusing OR molest\$ OR batter\$ OR maltreat\$ OR neglect\$ OR rape OR raped OR rapes OR exploit\$) [Words] and perpetrator OR perpetrators OR abuser OR abusers OR batterer OR batterers OR molester OR molesters OR rapist OR rapists OR offender OR offenders OR pedophil\$ OR paedophil\$ OR predator OR predators OR grooming OR aggressor OR aggressor OR paraphilic\$ or exhibitionis\$ [Words]**

References found : **22** [[refine](#)]

Database : **PAHO**

Search Date: 15 January 2017

Search on : **(child\$ OR adolescen\$ OR teen\$ OR baby OR babies) AND (abuse OR abused OR abusing OR molest\$ OR batter\$ OR maltreat\$ OR neglect\$ OR rape OR raped OR rapes OR exploit\$) [Words] and (perpetrator OR perpetrators OR abuser OR abusers OR batterer OR batterers OR molester OR molesters OR rapist OR rapists OR offender OR offenders OR pedophil\$ OR paedophil\$ OR predator OR predators OR grooming OR aggressor OR aggressor OR paraphilic\$ or exhibitionis\$) [Words]**

References found : **0**

Database : **REPIDISCA**

Search Date: 15 January 2017

Search on : **(child\$ OR adolescen\$ OR teen\$ OR baby OR babies) AND (abuse OR abused OR abusing OR molest\$ OR batter\$ OR maltreat\$ OR neglect\$ OR rape OR raped OR rapes OR exploit\$) [Words] and (perpetrator OR perpetrators OR abuser OR abusers OR batterer OR batterers OR molester OR molesters OR rapist OR rapists OR offender OR offenders OR pedophil\$ OR paedophil\$ OR predator OR predators OR grooming OR aggressor OR aggressor OR paraphilic\$ or exhibitionis\$) [Words]**

References found : **2**

Database : **WHOLIS**

Search Date: 15 January 2017

Search on : **(child\$ OR adolescen\$ OR teen\$ OR baby OR babies) AND (abuse OR abused OR abusing OR molest\$ OR batter\$ OR maltreat\$ OR neglect\$ OR rape OR raped OR rapes OR exploit\$)**

[Words] and (perpetrator OR perpetrators OR abuser OR abusers OR batterer OR batterers OR molester OR molesters OR rapist OR rapists OR offender OR offenders OR pedophil\$ OR paedophil\$ OR predator OR predators OR grooming OR aggressor OR aggressor OR paraphilic\$ or exhibitionis\$) [Words]

References found : 2

Web of Science

Search date: 5 January 2017

Set	Results
# 4	1,863 #3 AND #2 AND #1 Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, ESCI Timespan=All years
# 3	4,860,921 TOPIC: ((randomised OR randomized OR randomization OR randomisation OR placebo OR placebos OR placebos OR trial OR trials OR group OR groups OR blind OR blinded)) Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, ESCI Timespan=All years
# 2	122,734 TOPIC: ((perpetrator OR perpetrators OR abuser OR abusers OR batterer OR batterers OR molester OR molesters OR rapist OR rapists OR offender OR offenders OR pedophile OR pedophiles OR paedophile OR paedophiles OR predator OR predators OR grooming OR aggressor OR aggressors OR paraphilic OR exhibitionist OR exhibitionists OR exhibitionism)) Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, ESCI Timespan=All years
# 1	71,375 TOPIC: ((child* OR girl OR girls OR boy OR boys OR infant* OR baby OR babies OR toddler OR toddlers OR preschooler OR preschoolers OR teen* OR adolescen* OR youth*) AND (abuse OR abused OR abusing OR abuses OR maltreat* OR neglect* OR assault* or rape OR raped OR raping OR molest* OR exploit*)) Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, ESCI Timespan=All years

Appendix II: Elements of the Risk of Bias Assessment

Elements that comprised the risk of bias (ROB) assessment, which led to a low (L), unclear (U), or high (H) risk of bias*		
ROB component and definition	Rating	Explanation of what informed rating
13. Randomisation [Includes sequence generation and allocation concealment.]	L	Explicit mention of a random component and allocation concealment, or probably done e.g., random number table, computer random number generator, coin tossing, shuffling cards or envelopes, throwing dice, drawing lots, minimization with or without random element; e.g., allocation by a central unit
	U	Authors indicate participants were randomized but do not say how; block or stratified randomization is rated unclear unless the authors also explicitly state that the sequence was computer generated; insufficient information to permit judgement
	H	Explicit mention of a non-random, systematic, or judgement-based approach e.g., day/date of birth or admission, patient/clinic record number, clinician judgement, participant preference, lab test results, availability of intervention; or probably not done
14. Blinding of patients/ participants and providers / personnel	L	Blinding done or probably done; no/incomplete blinding but outcome not likely to be affected by lack of blinding OR blinding ensured and unlikely could have been broken
	U	Insufficient information to permit judgement
	H	No/incomplete blinding OR blinding attempted and likely broken and either way the outcome likely to be influenced by lack of blinding
15. Blinding of outcome assessment [Performance bias due to knowledge of the allocated interventions by participants and/or personnel during the study.]	L	Blinding done or probably done; no/incomplete blinding but outcome assessment not likely to be affected by lack of blinding OR blinding ensured and unlikely could have been broken
	U	Insufficient information to permit judgement
	H	No/incomplete blinding OR blinding attempted and likely broken and either way the outcome assessment likely to be influenced by lack of blinding
16. Incomplete outcome data [Attrition bias due to amount, nature or handling of incomplete outcome data.]	L	No missing data; drop out rates $\leq 10\%$; drop out rates $>10\%$ but $\leq 30\%$ AND reasons are acceptable and not connected to the intervention AND there is no imbalance in rates/reasons between groups; reasons for missing data unlikely related to the intervention; missing data balanced in numbers across groups with similar reasons; missing data have been appropriately imputed
	U	Insufficient reporting of attrition/exclusions to permit judgement e.g., data tables do not suggest whether there were dropouts or not, number randomized not stated, no reasons for missing data provided
	H	Dropout rates $>10\%$ AND reasons are connected to the intervention OR there is an imbalance in the rates/reasons between groups OR no reasons are given; "as-treated" analysis done with substantial departure of the intervention received from that assigned at randomization; potentially inappropriate application of simple imputation
17. Selective reporting [Reporting bias due to selective outcome reporting.]	L	Outcome appears in both methods and results; protocol available and all pre-specified outcomes are reported in pre-specified way or protocol not available but clear the published reports include all expected outcomes
	U	Outcome not mentioned in methods but appears in the results; insufficient information to permit judgement
	H	Outcome is mentioned in methods but does not appear in results; some pre-specified primary outcomes not reported, 1+ outcomes reported using measurements, analysis methods or subsets of data not pre-specified, 1+ outcomes not pre-specified and no clear

		justification for reporting, 1+ outcomes reported incompletely and cannot be meta-analyzed, no results for key outcome
18. "Other bias" [Bias due to problems not covered elsewhere in the table; significant baseline imbalance in study groups on important characteristics; contamination; industry funding]	L	The study appears to be free of other sources of bias
	U	There is either insufficient information to assess whether important risk exists or insufficient rational or evidence that identified problem will introduce bias
	H	At least one important risk of bias e.g., related to specific study design used, fraudulent claims, sampling/recruitment bias, extreme baseline imbalance, etc.
*For each category, verbatim quotes, summary of known facts, reviewer comments, page number was copied. Otherwise, staff wrote "probably done," "probably not done," or included an explicit statement if no information was available to inform a judgement		

Appendix III: Participant and study characteristics

Interventions (for caregivers who maltreat)							
Study ID / RefID	Maltreatment type	Intervention (n at baseline)	Comparison (n at baseline)	Intervention delivered by	Child mean age (Age range of inclusion criteria)	Participant gender	Assessment of Recurrence/Recidivism
Country (Income Level, World Bank)							
G) Counselling/therapy interventions							
Kolko 1996 ¹⁵ U.S. (High)	PA	Individual child or parent CBT (n=21) Family therapy (FT) (n=17)	Routine community services (RCS) (n=12)	5 with master's degree in social work or psychology, 1 with BA and 16 years of experience	8.6 (6-13) years	72.3% boys 27.7% girls	Computerized child abuse registry (official county records), juvenile court records (formal allegations of crime or delinquency); Records checked for all participants 1-year following intake assessment.
H) Parenting (Clinic or Community)							
Chaffin 2004 ¹⁸ USA (High)	PA	Parent child interaction therapy (PCIT) PCIT + enhanced individualized services (total dyads = 110)	Standard community-based parenting group	Therapists, with direct monitoring by supervisors	There was reported to be a median of 3 children per household. Mean age and gender of children in the sample was not reported.	N/R	Recurrence outcomes were obtained from a statewide child welfare administrative database (based on identifiers for the family and individual unique identifiers for the abusive parent).

Chaffin 2009 ¹⁶ , 2011 ¹⁷	PA or N	First randomization to self-motivation orientation (n=99) or services as usual (n=93)	Second randomization to PCIT (n=70) or services as usual (n=83)	Master's level therapists	(2.5-12) years	N/R	Administrative data for child welfare reports were captured from service agency and state child welfare agency records and databases (all reports, allegations, dispositions). Only events where the parent in the study was identified as the person committing maltreatment of any child in the family were assessed (reports that were screened out were excluded).
I) Parenting (Home)							
Chaffin 2012 ¹⁹ USA (High)	CM (mostly PA & N)	SafeCare (SC) (as a component of a home visiting service) (Note: also coached vs uncoached conditions) (total n=2175 parents/care givers)	Home-based services as usual (SAU) (Note: also coached vs uncoached conditions)	Initially by study investigators, then by trained home visitors who continued to be monitored (QC)	N/R	N/R	Past and future child protection reports were extracted from a statewide database (CPS). Average follow-up time for participant families/surveillance was approximately years. A recurrent or recidivism event was defined by the study authors as <i>"any report occurring after study enrollment"</i> .
MacMillan 2005 ²⁰ Canada (High)	PA & N	Home visits by public health nurses (n=89)	Standard services (via CPS) (n=74)	Public health nurses (participated in a 1-week training program)	5.1 (child younger than 13) years	50% boys 50% girls	Primary study outcome: recurrence of PA & neglect. Data was collected from a standardized review of CPA records – from enrolment to 3 years for all children in families participating in the study. As a secondary outcome: data was extracted from hospital records re: visits for all study children at 4 local hospitals – 2 researchers adjudicated records of each event to determine if they represented physical abuse or neglect events.
Swenson 2010 ²¹	PA	Multi-systemic therapy	Enhanced standard outpatient	Trained therapists (5-day	Mean age = 13.88 years (SD = 2.07;	55.8% girls	Re-abuse/recurrence (maltreatment outcomes) – included "new report of abuse of the target child, abuse of any child by the target parent and youth

USA (High)		(adaptation for child abuse and neglect) (MST-CAN) (total n=86 youth and custodial parent)	treatment (EOT) (n=44)	standardized training) (n=42)		44.2% boys	out-of-home placement (whether placed, days placed, and placement changes". Data for maltreatment outcomes were collected from CPS records.
Jouriles 2010 ²² USA (High)	PA & N	Project support (n=17)	Services as usual (CPS) (n=18)	Master's-level educated, licensed mental HSPs, trained and supervised by a clinical psychologist.	Ave. child age (at the time of inclusion) = 5.4 years) (SD 1.5).	N/R	Digital records from the CPS were reviewed to identify reports of recurrence/re-referral for child maltreatment at any time during the 20 months following baseline. This was coded as a dichotomous variable (yes or no re: re-referral).
Non-caregivers who maltreat (incl. sexual abuse)							
A) YOUTH (Counselling/Therapy)							
Borduin 2009/ USA (High)	SA	Multi-systemic therapy (MST) (n=24 families)	Usual community services (UCS) (n=24 families)	MST was provided by graduate students in clinical psychology (MST trained); therapy in the UCS were provided by court employed therapists	Mean age = 14 years (SD 1.9 years)	95.8% boys 0.2% girls	Youths' criminal arrest records were obtained annually over a long period of f/u (ave. years of f/u = 8.9; SD 1.02) and offences classified as sexual or non-sexual. Differences in the lengths of f/u were controlled for in analyses of arrest data.
B) ADULTS (Counselling and therapy)							

Marques 2005/ Marques 1994/ USA (High)		Cognitive Behavioural Therapy (CBT) (1994: n=76 child molesters, 22 rapists) (2005: n=259)	Volunteer control group (1994; n=79 child molesters, 18 rapists) (2005: n=225) Non- volunteer control group (n=78 child molesters, 18 rapists) (2005: n=200)	Administered while incarcerated, followed up in community (1- year aftercare program) by clinical psychologist, therapist or social worker, nursing staff.	1994: Mean age NR 2005: Mean age dropouts = 34.1 years Mean age treatment completers = 37.4 years	100% men	Recidivism defined as new arrest for either a sex crime or a violent (non-sexual) crime (analysed separately. Official records (federal and state departments of justice, state department of corrections parole officers/parole reports, confidential self-report) were collected over a minimum period of 5 years for all study participants.
Romero 1983/ USA (High)	SA	Group psycho- therapy (n=148)	Probation Officer (n=83)	Staff psychiatrist	Adult participant mean age not reported. Two-thirds of participants were aged 18 – 25.	100% men	Recidivism (outcome): arrest for a sex offence during the study follow-up period. Study authors reviewed arrest data (including “information pertaining to the disposition of the arrests”) over a 10-year-period.
Langevin 1979/	SA	Assertion therapy (A)	Provera + assertion therapy (AP)	Graduate students with training in	Mean age of drop-outs = 24.2 years (SD 6.08)	100% men	Recidivism outcome: Participants were advised to call investigators first <i>“if they were charged, as this might ease the pressure of the police and court on</i>

Canada (High)		(total n=32 – note that 47% dropped out before intervention completion)		assertion therapy	Mean age of intervention completers = 33.64 years (SD 10.39)		<i>them. We urged them to call us if the behavior was getting out of hand</i>
McConaghy 1988/ Australia (High)	SA	Imaginal desensitization (ID) (n=10)	Medroxyprogesterone (n=10) OR Imaginal desensitization (ID) + medroxyprogesterone (n=10)	ID was administered in an institutional (inpatient) setting;	Mean age=30 years Range 16-50 years	100% men	Measures “anomalous urges” via an author-generated scale: “Do you feel any reduction in general level of tension? Please indicate on the following scale: “0% on the 0-100% scales was labelled “NO reduction” and 100%, “Urge (or tension) completely gone”
Pharmacological intervention							
McConaghy 1988/ Australia (High)	SA	1) Medroxyprogesterone (n=10) OR 2) imaginal desensitization + medroxyprogesterone (n=10)	Imaginal desensitization (n=10)	ID was administered in an institutional (inpatient) setting;	Mean age=30 years Range 16-50 years	100% men	Measures “anomalous urges” via an author-generated scale: “Do you feel any reduction in general level of tension? Please indicate on the following scale: “0% on the 0-100% scales was labelled “NO reduction” and 100%, “Urge (or tension) completely gone”

Appendix IV: Risk of Bias

Author/Year	Sequence Generation	Allocation Concealment	Selective Reporting	Blinding of Participants/ Providers	Blinding of Outcome Assessment	Incomplete Outcomes	Other Bias	Overall	Comments
Kolko, D. J. et al. 1996	L	H	L	H	H	L	L	U	- Control group from different population than intervention groups (Intervention groups can be compared, as both were randomized) - Randomization not centralized, no blinding - Pre-study outcome reporting plans unknown - Dropouts reported for each group, did not differ significantly from comparators in demographic background, clinical experiences, or maltreatment experiences
Chaffin, M. 2009, 2011 (same patient sample)	L	L	L	H	L	L	L	U	- Centralized randomization - Rates of attrition and reasons for attrition did not differ significantly across randomized conditions - Data obtained from database about recurrence/incidences – not reported by investigator
Chaffin 2004	L	H	L	H	L	L	L	U	- Randomization reported but method/allocation not specified - Data collectors blinded to intervention assignment - Missing data/dropouts not reported - Data on the main outcome of interest (i.e., maltreatment reports from administrative databases) were available on all participants regardless of treatment attrition status
Chaffin 2012	L	H	L	H	L	L	L	U	- Randomization assigned at the agency/region level - Data collected by independent research assistants - Recidivism reported - Data pulled from all reports

									- Missing data/dropouts not reported
MacMillan 2005	L	L	L	H	L	L	L	U	- Computerized randomization process used - Assignment to groups concealed in sealed envelopes - Research assistants collecting data were masked to group assignment
Swenson 2010	L	L	L	H	H	L	L	U	- Computerized randomization process used - Number of dropouts/missing data for each intervention not reported. Completion of STEP-TEEN intervention significantly lower than MST-CAN intervention
Jouriles 2010	L	L	L	H	L	L	L	U	- No blinding, random numbers table used, person conducting baseline assessment aware of group assignment but unaware of study hypothesis - Higher drop-out rate in comparison than intervention group – attrition appears to be influenced by intervention - CPS records used - Numbers for re-report given for all families, documented reports used, loss to follow-up happened over time but participants were part of program for most
L (green)=Low risk of bias; U (yellow)=Unclear risk of bias; H (red) =High risk of bias Note: As per write up in the method section, for the risk of bias the first two categories (sequence generation and blinding of participants/patients and providers/personnel) carry the most weight. A study can only be rated as an overall “low risk” of bias, if none of the individual domains are rated as high risk and the first two domains are low risk. A study is rated as an overall “unclear” risk of bias, if most of the domains are “unclear” and the first two domains are not high risk. A study is rated as an overall “high” risk of bias, if most of the domains are “unclear” or “high risk” and the first two domains are high risk as well.									

Author/Year	Sequence Generation	Allocation Concealment	Selective Reporting	Blinding of Participants/ Providers	Blinding of Outcome Assessment	Incomplete Outcomes	Other Bias	Overall	Comments
Borduin 2009	L	L	L	H	L (criminal arrest data) H (self-reported data)	L	L		- Computerized system used for randomization - Following completion of the pre-assessment inventories and self-report instruments, a sealed envelope was opened, and the family was informed of the treatment condition to which they were assigned. - Blinding of outcome assessment: Low risk for criminal arrest data (high risk for self-report)
Marques 2005, 1994	L	H	L	H	L	L	L		- Sexual offenders in prison who volunteered to participate randomly assigned to intervention/control - Subjects were notified of their selection for treatment - Data sources included official records - Reported dropout rates for groups after randomization (and take these into consideration in analyses)
Romero 1983	L	H	L	H	L	L	L		- No mention of missing data or drop outs - Not enough details given about randomization method given - No blinding - Report number of non-completers and assess impact on findings
Langevin 1979	H	H	L	H	H	H	L		- All offenders volunteered to participate in study - No blinding - Significantly more patients from the AP intervention dropped out (vs. A intervention)

McConaghy 1988	H	H	L	H	H	H	L		- Participants sought treatment for uncontrollable sexual urges - If participants showed an inadequate response to one treatment, they would be offered the other - No blinding - Treatment side-effects led to higher drop-out rates in M and M + ID groups than ID group alone. Details not reported

Web Annex 4b: GRADE tables – Interventions for perpetrators to address maltreatment recurrence

Interventions addressing caregivers

SafeCare compared to Usual care for Child Maltreatment

Patient or population: Maltreating parents or caregivers in child protection services

Setting: Outpatient, home based

Intervention: SafeCare (a home-based treatment of parents in CPS for child neglect including structured behavioural skills training programme focusing on concrete caregiving, household management and parenting skills). Implementation may include coaches to improve fidelity to the programme.

Comparison: Usual care

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	No of participants (studies)	Quality of the evidence (GRADE)	Comments
	Risk with Usual care	Risk with SafeCare				
Recidivism at 1 year assessed with: Abuse follow up: mean 6 years	450 per 1000	391 per 1000 (342 to 443)	HR 0.83 (0.70 to 0.98) ^a	2035 (1 RCT) ^b	⊕⊕⊕○ MODERATE ^c	Effects were similar depending on analysis used. However different analyses did not show that adding coaching to SC when implemented resulted in greater reductions in recidivism. In a subpopulation of parents and caregivers of preschool aged children with no untreated substance abuse disorder, showed greater reduction in recidivism (HR 0.74, CI 0.58 to 0.95)

Explanations

a. Effect estimate from study; no raw events data provided.

b. Chaffin, 2012

c. Serious concerns regarding risk of bias.

Home visiting by public health nurse compared to Standard care for Child Maltreatment

Patient or population: 163 families with a history of one index child (younger than 13 years, 50% boys) being exposed to physical abuse or neglect who were referred by one of two local child protection agencies

Setting: Country: Canada. Intervention setting: Home-based

Intervention: Standard care + home visiting by public health nurse every week for 6 months, then every 2 weeks for 6 months, then monthly for 12 months.

Comparison: Standard care (standard services arranged CPS agency, such as routine follow-up by CPS caseworkers whose focus was on assessment of risk of recidivism, provision of education about parenting, and arrangement of referrals to community-based parent education programs)

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	№ of participants (studies)	Quality of the evidence (GRADE)	Comments
	Risk with Standard care	Risk with Home visiting by public health nurse				
Recidivism (Physical Abuse) follow up: mean 12 months	431 per 1,000	330 per 1,000 (205 to 484)	OR 0.65 (0.34 to 1.24)	160 (1 RCT) ^a	⊕⊕○○ LOW ^c	Based on number of events.
Recidivism (Neglect) follow up: mean 12 months	514 per 1,000	467 per 1,000 (317 to 619)	OR 0.83 (0.44 to 1.54)	160 (1 RCT) ^a	⊕⊕○○ LOW ^c	Based on number of events.

*The risk in the intervention group (and its 95% confidence interval) is based on the assumed risk in the comparison group and the **relative effect** of the intervention (and its 95% CI). **CI:** Confidence interval; **MD:** Mean difference; **OR:** Odds ratio

GRADE Working Group grades of evidence

High quality: We are very confident that the true effect lies close to that of the estimate of the effect

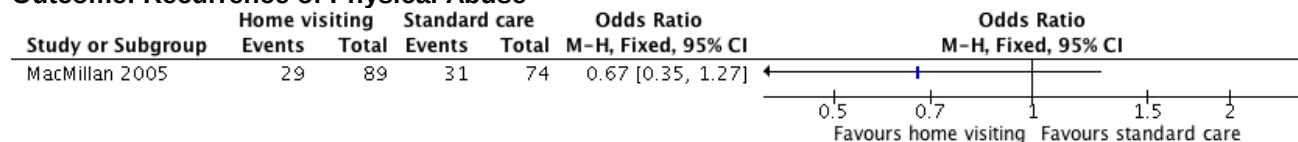
Moderate quality: We are moderately confident in the effect estimate: The true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different

Low quality: Our confidence in the effect estimate is limited: The true effect may be substantially different from the estimate of the effect

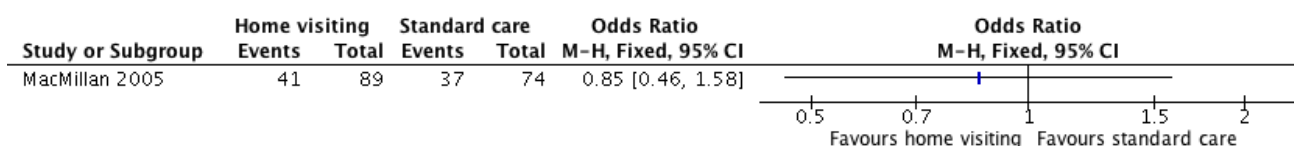
Very low quality: We have very little confidence in the effect estimate: The true effect is likely to be substantially different from the estimate of effect

a. MacMillan, 2005; c. The sample size / number of events are <300 and effect estimate is imprecise.

Outcome: Recurrence of Physical Abuse



Outcome: Recurrence of Neglect



Parent child interaction therapy (PCIT) compared to standard community care for Children Exposed to Child Maltreatment

Patient or population: Chaffin 2004: 110 physical abusive parents and their child (between 4 and 12 years of age) were referred as they entered the child welfare system for a new confirmed physical abuse report. Chaffin 2011: 192 parents stepparents, or primary caregivers referred to the program by child welfare for neglect and/or physical abuse and had at least one child between ages 2.5 and 12 years

Intervention: Parent child interaction therapy (PCIT) (an approach to therapy in which parents are treated with their children, focus is on behavioural skills and parents are coached and practice skills in dyadic parent-child sessions)

Comparison: Community care (Chaffin 2004: standard community based parenting group where parents receive skills about active listening, parenting practices, how their upbringing could influence their decisions, child development, communication strategies, stress management, etc; Chaffin 2011: weekly didactic parenting group in which parents learned about child development and developmentally appropriate expectations, principles of discipline, use of praise, communication strategies, stress management, and the ways in which parental personal problems affect children)

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	№ of participants (studies)	Certainty of the evidence (GRADE)	Comments
	Risk with standard community care	Risk with parent child interaction therapy (PCIT)				
Physical abuse re-report follow up: mean 850 days	486 per 1,000	191 per 1,000 (78 to 395)	OR 0.25 (0.09 to 0.69)	77 (1 RCT) ¹	⊕○○○ VERY LOW ^{a,b}	
Physical abuse re-report – (enhanced PCIT provided) follow up: mean 850 days	486 per 1,000	366 per 1,000 (178 to 602)	OR 0.61 (0.23 to 1.60)	68 (1 RCT) ¹	⊕○○○ VERY LOW ^{a,b}	
Recidivism assessed with: child welfare agency database	373 per 1,000	244 per 1,000 (139 to 394)	OR 0.54 (0.27 to 1.09)	153 (1 RCT) ²	⊕○○○ VERY LOW ^{a,b}	
Recidivism (enhanced PCIT provided) assessed with: child welfare agency database	294 per 1,000	203 per 1,000 (87 to 400)	OR 0.61 (0.23 to 1.60)	76 (1 RCT) ²	⊕○○○ VERY LOW ^{a,b}	

*The risk in the intervention group (and its 95% confidence interval) is based on the assumed risk in the comparison group and the **relative effect** of the intervention (and its 95% CI). **CI:** Confidence interval; **OR:** Odds ratio

Parent child interaction therapy (PCIT) compared to standard community care for Children Exposed to Child Maltreatment

Patient or population: Chaffin 2004: 110 physical abusive parents and their child (between 4 and 12 years of age) were referred as they entered the child welfare system for a new confirmed physical abuse report. Chaffin 2011: 192 parents stepparents, or primary caregivers referred to the program by child welfare for neglect and/or physical abuse and had at least one child between ages 2.5 and 12 years

Intervention: Parent child interaction therapy (PCIT) (an approach to therapy in which parents are treated with their children, focus is on behavioural skills and parents are coached and practice skills in dyadic parent-child sessions)

Comparison: Community care (Chaffin 2004: standard community based parenting group where parents receive skills about active listening, parenting practices, how their upbringing could influence their decisions, child development, communication strategies, stress management, etc; Chaffin 2011: weekly didactic parenting group in which parents learned about child development and developmentally appropriate expectations, principles of discipline, use of praise, communication strategies, stress management, and the ways in which parental personal problems affect children)

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	Nº of participants (studies)	Certainty of the evidence (GRADE)	Comments
	Risk with standard community care	Risk with parent child interaction therapy (PCIT)				

GRADE Working Group grades of evidence

High certainty: We are very confident that the true effect lies close to that of the estimate of the effect

Moderate certainty: We are moderately confident in the effect estimate: The true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different

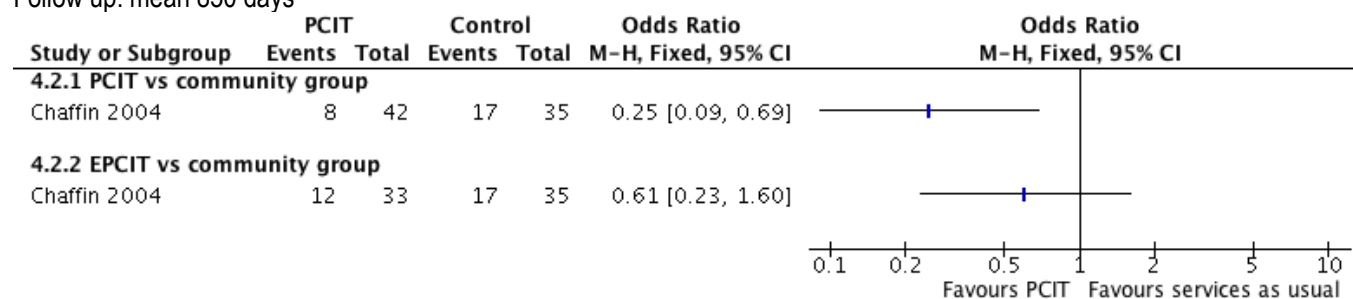
Low certainty: Our confidence in the effect estimate is limited: The true effect may be substantially different from the estimate of the effect

Very low certainty: We have very little confidence in the effect estimate: The true effect is likely to be substantially different from the estimate of effect

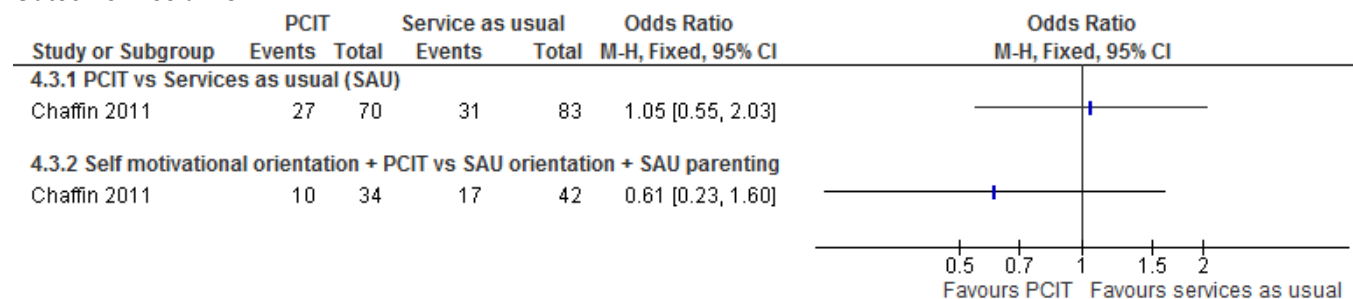
1. Chaffin 2004 (PCIT and enhanced PCIT were provided; enhanced services targeted parental depression, substance abuse and violence problems).
2. Chaffin 2011 (a similar PCIT programme in Chaffin 2004 was used but a motivational orientation was added).
 - a. Serious risk of bias due to lack of blinding.
 - b. Very few people included in the analysis.

Outcome: Physical abuse re-report

Follow up: mean 850 days



Outcome: Recidivism



CBT Individual Therapy compared to Routine Community Services for Children Exposed to Child Maltreatment

Patient or population: 55 physically maltreated children (13 girls, mean age of 8.6 years) and their parents or guardians. Child protection services caseworkers referred 87% of cases following incidents of physical abuse (n=20), physical maltreatment (n=15) or severe/frequent use of physical discipline or force having a high likelihood of physical injury (6).
Intervention: CBT Individual Therapy (Children and parents with separate therapists received parallel protocols designed to address cognitive, affective, and behavioural needs)
Comparison: Routine community services (families were referred to the individually prescribed community services recommend by their caseworkers; services included home visits to provide support and information, family skills specialists who taught homemaking and related skills, and parenting information and support groups. Some treatment plans in this group involved up to 20 hours of home-based service per week for up to 3 months, whereas others involved services delivered on a once or twice per week basis for an indefinite time)

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	No of participants (studies)	Certainty of the evidence (GRADE)	Comments
	Risk with Routine Community Services	Risk with CBT Individual Therapy				
Records from child abuse agency post-intervention	250 per 1,000	80 per 1,000 (13 to 379)	OR 0.26 (0.04 to 1.83)	37 (1 RCT) ¹	⊕○○○ VERY LOW ^a	

*The risk in the intervention group (and its 95% confidence interval) is based on the assumed risk in the comparison group and the **relative effect** of the intervention (and its 95% CI). **CI:** Confidence interval; **OR:** Odds ratio

GRADE Working Group grades of evidence

High certainty: We are very confident that the true effect lies close to that of the estimate of the effect

Moderate certainty: We are moderately confident in the effect estimate: The true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different

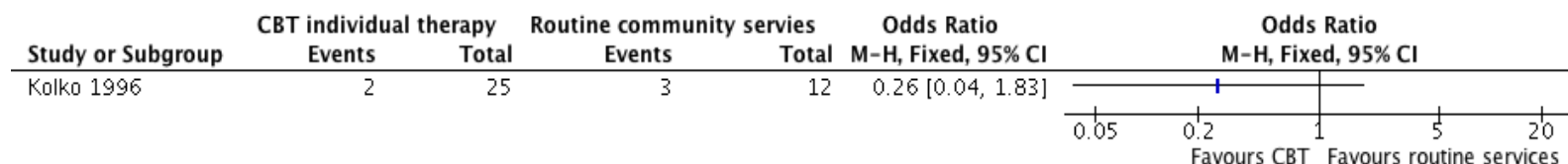
Low certainty: Our confidence in the effect estimate is limited: The true effect may be substantially different from the estimate of the effect

Very low certainty: We have very little confidence in the effect estimate: The true effect is likely to be substantially different from the estimate of effect

1. Kolko 1996.

a. Very few people included in the analysis and risk of bias due to lack of blinding and no allocation concealment.

Outcome: Records from child abuse agency post-intervention



Family Therapy compared to Routine Community Services for Children Exposed to Child Maltreatment

Patient or population: 55 physically maltreated children (13 girls, mean age of 8.6 years) and their parents or guardians. Child protection services caseworkers referred 87% of cases following incidents of physical abuse (n=20), physical maltreatment (n=15) or severe/frequent use of physical discipline or force having a high likelihood of physical injury (6).

Intervention: Family Therapy (Three phases: 1) Therapist assessed structural roles and interactions in family, used reframing to enhance cooperation, discussed effects and physical force and non-violence; 2) Families trained to use specific problem-solving and communication skills; 3) Focus on establishing problem-solving family routines)

Comparison: Routine community services (families were referred to the individually prescribed community services recommend by their caseworkers; services included home visits to provide support and information, family skills specialists who taught homemaking and related skills, and parenting information and support groups. Some treatment plans in this group involved up to 20 hours of home-based service per week for up to 3 months, whereas others involved services delivered on a once or twice per week basis for an indefinite time)

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	No of participants (studies)	Certainty of the evidence (GRADE)	Comments
	Risk with Routine Community Services	Risk with Family Therapy				
Records from child abuse agency post-intervention	250 per 1,000	112 per 1,000 (16 to 472)	OR 0.38 (0.05 to 2.68)	30 (1 RCT) ¹	⊕○○○ VERY LOW _{a,b}	

***The risk in the intervention group** (and its 95% confidence interval) is based on the assumed risk in the comparison group and the **relative effect** of the intervention (and its 95% CI). **CI:** Confidence interval; **OR:** Odds ratio

GRADE Working Group grades of evidence

High certainty: We are very confident that the true effect lies close to that of the estimate of the effect

Moderate certainty: We are moderately confident in the effect estimate: The true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different

Low certainty: Our confidence in the effect estimate is limited: The true effect may be substantially different from the estimate of the effect

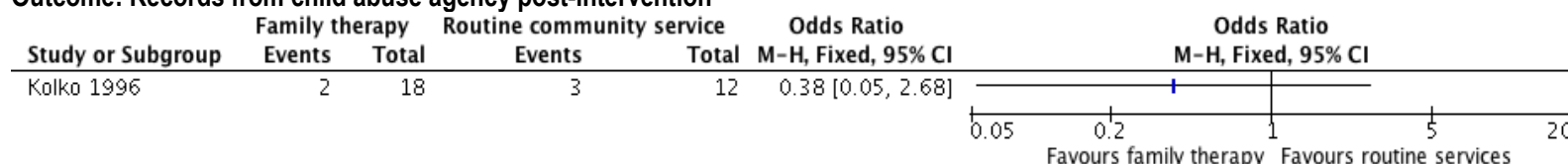
Very low certainty: We have very little confidence in the effect estimate: The true effect is likely to be substantially different from the estimate of effect

1. Kolko1996.

a. Serious risk of bias due to lack of blinding.

b. Very few people included in the analysis.

Outcome: Records from child abuse agency post-intervention



Home Therapy compared to Services as usual for Children Exposed to Child Maltreatment

Patient or population: Swenson: 86 youth (ages 10 to 17 years, 55.8% girls) and the custodial parent who was implicated in the child protection services (CPS) report of physical abuse – all referred by CPS. Jouriles: 35 families in which allegations of physical abuse or neglect of a child (aged 3-8 years) were substantiated by CPS and in which it was determined by CPS that the child and family's interests would be best served by keeping the family intact and requiring the mother (or parents) to participate in services

Intervention: Swenson 2010: Home Therapy (therapist-delivered interventions in the home and community, frequency determined by need (daily to weekly) + on-call service for crisis management 24/7; Jouriles 2010: Home Therapy (therapist-led weekly home sessions for mothers. Sessions were 1-1.5 hours and lasted for 8 months)

Comparison: Services as usual (Swenson: Enhanced outpatient treatment (standard services the Center provided for physically abused youths and their parents as well as enhanced engagement and parent training interventions; Jouriles: services as usual by CPS; Four of the 18 families did not receive any services, according to CPS records. Of the 14 families who received services, all received some type of parenting intervention)

Outcomes	Absolute effects* (95% CI)		Relative effect (95% CI)	No of participants (studies)	Certainty of the evidence (GRADE)	Comments
	Risk with usual services	Risk with Home Therapy				
Subsequent CPS child maltreatment reports - Multi-systemic therapy follow up: 16 months	119 per 1,000	45 per 1,000 (8 to 207)	OR 0.35 (0.06 to 1.93)	86 (1 RCT) ¹	⊕○○○ VERY LOW ^{a,b}	
Subsequent CPS child maltreatment reports - Project Support follow up: 20 months	278 per 1,000	58 per 1,000 (8 to 376)	OR 0.16 (0.02 to 1.57)	35 (1 RCT) ²	⊕○○○ VERY LOW ^{b,c}	

***The risk in the intervention group** (and its 95% confidence interval) is based on the assumed risk in the comparison group and the **relative effect** of the intervention (and its 95% CI). **CI:** Confidence interval; **OR:** Odds ratio

GRADE Working Group grades of evidence

High certainty: We are very confident that the true effect lies close to that of the estimate of the effect

Moderate certainty: We are moderately confident in the effect estimate: The true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different

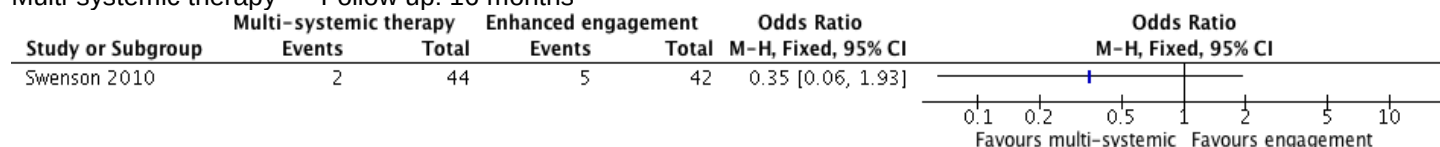
Low certainty: Our confidence in the effect estimate is limited: The true effect may be substantially different from the estimate of the effect

Very low certainty: We have very little confidence in the effect estimate: The true effect is likely to be substantially different from the estimate of effect

1. Swenson 2010. 2. Jouriles 2010. a. Serious risk of bias due to lack of blinding. b. Very few events. c. Serious risk of bias due to lack of blinding and loss to follow-up.

Outcome: Subsequent CPS child maltreatment reports

Multi-systemic therapy Follow up: 16 months



Project support Follow up: 20 months

Interventions addressing non-caregivers

Multi-systemic therapy compared to usual services for non-caregivers who commit maltreatment

Patient or population: 48 juvenile sexual offenders who (a) had been arrested for a serious sexual offense (rape/sexual assault or molestation of younger children) with a subsequent order for outpatient sexual offender counseling, (b) was currently living with at least one parent figure, and (c) showed no evidence of psychosis or serious mental retardation

Setting: Country: U.S. Intervention: Home

Intervention: Multi-systemic therapy (Clinical services provided by a therapist to youth and their family members in the home, school and/or community, services included multiple contacts each week (approx. 3 hours/week), availability of therapist to respond to issue 24 hours/day, 7 days/week).

Comparison: Usual services (cognitive-behavioral group and individual treatment through the local juvenile court)

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	No of participants (studies)	Certainty of the evidence (GRADE)	Comments
	Risk with usual services	Risk with Multi-systemic therapy				
Person-related criminal activity assessed with: End point scores on Self-Reported Delinquency (SRD) scale – number of times behaviour occurred	The mean person-related criminal activity was 7.98	The mean person-related criminal activity was 6.6 lower (10.41 lower to 2.79 lower)	-	48 (1 RCT) ¹	⊕○○○ VERY LOW ^{a,b}	Standard mean difference (SMD) = -0.96 (95% CI = -1.56, -0.36). Insufficient data provided to calculate change scores.
Arrests for sexual crimes assessed with: End point data for number of days arrested follow up: mean 8.9 years	The mean arrests for sexual crimes was 0.79	The mean arrests for sexual crimes was 0.66 lower (1.17 to 0.15 lower)	-	48 (1 RCT) ¹	⊕○○○ VERY LOW ^{a,b}	SMD = -0.85 (95% CI = -1.45, -0.26)
Arrest for sexual crimes assessed with: At least 1 arrest follow up: 8.9 years	458 per 1,000	85 per 1,000 (17 to 322)	OR 0.11 (0.02 to 0.56)	(1 RCT) ¹	⊕○○○ VERY LOW ^{a,b}	
Arrest for non-sexual crimes assessed with: At least 1 arrest follow up: 8.9 years	583 per 1,000	289 per 1,000 (112 to 576)	OR 0.29 (0.09 to 0.97)	48 (1 RCT) ¹	⊕○○○ VERY LOW ^{a,b}	

***The risk in the intervention group** (and its 95% confidence interval) is based on the assumed risk in the comparison group and the **relative effect** of the intervention (and its 95% CI). **CI:** Confidence interval; **MD:** Mean difference

Multi-systemic therapy compared to usual services for non-caregivers who commit maltreatment

Patient or population: 48 juvenile sexual offenders who (a) had been arrested for a serious sexual offense (rape/sexual assault or molestation of younger children) with a subsequent order for outpatient sexual offender counseling, (b) was currently living with at least one parent figure, and (c) showed no evidence of psychosis or serious mental retardation

Setting: Country: U.S. Intervention: Home

Intervention: Multi-systemic therapy (Clinical services provided by a therapist to youth and their family members in the home, school and/or community, services included multiple contacts each week (approx. 3 hours/week), availability of therapist to respond to issue 24 hours/day, 7 days/week).

Comparison: Usual services (cognitive-behavioral group and individual treatment through the local juvenile court)

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	№ of participants (studies)	Certainty of the evidence (GRADE)	Comments
	Risk with usual services	Risk with Multi-systemic therapy				

GRADE Working Group grades of evidence

High certainty: We are very confident that the true effect lies close to that of the estimate of the effect

Moderate certainty: We are moderately confident in the effect estimate: The true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different

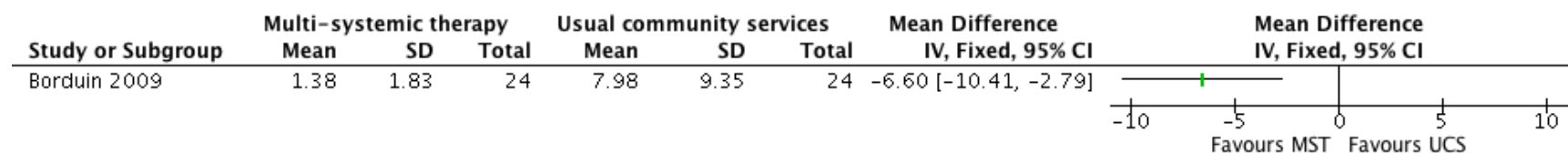
Low certainty: Our confidence in the effect estimate is limited: The true effect may be substantially different from the estimate of the effect

Very low certainty: We have very little confidence in the effect estimate: The true effect is likely to be substantially different from the estimate of effect

1. Borduin 2009. a. Serious concerns regarding risk of bias because of lack of blinding. b. Very few people included in the analysis.

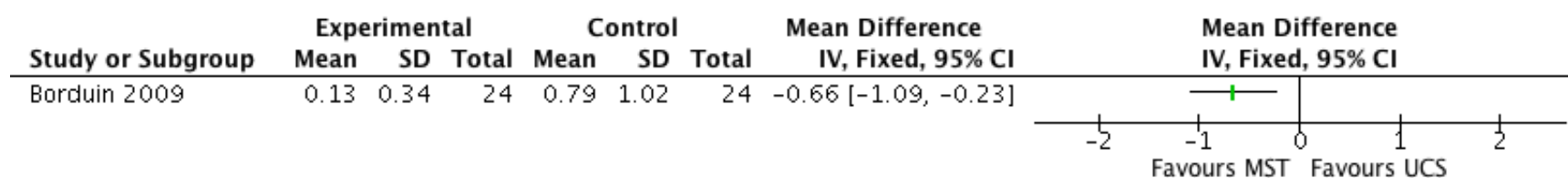
Outcome: Person-related criminal activity at treatment completion

Assessed with: End point scores on Self-Reported Delinquency (SRD) scale



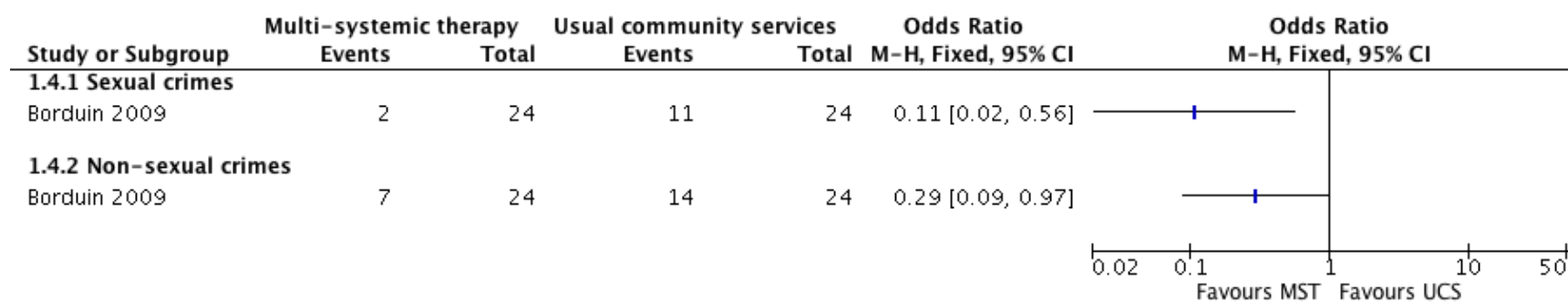
Outcome: Arrests for sexual crimes - number of days

Assessed with: End point data; Follow up: mean 8.9 years



Outcome: Arrest

Assessed with: At least 1 arrest; Follow up: 8.9 years



Adult counselling compared to comparison for non-caregiver who commit maltreatment

Patient or population: Marques 2005: sexual offenders from institutions within the California Department of Corrections who were serving sentences for child molestation or rape. Inmates who had offended in concert (e.g., gang rape) or only against their biological children (incest) were excluded

Setting: Country: U.S. Intervention: Prison (Marques 2005), Clinic (Romero 1983)

Intervention: Marques 2005: Adult counselling (2 year in-hospital intensive treatment program + 1 year aftercare program); Romero 1983: Group psychotherapy with psychiatrist (weekly for 1 hour)

Comparison: Marques: No treatment (remained in prison). Romero: Probation only (routine check-in with probation officer monthly)

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	№ of participants (studies)	Certainty of the evidence (GRADE)	Comments
	Risk with comparison	Risk with Adult counselling				
Sexual re-offence - CBT follow up: 12 years	200 per 1,000	220 per 1,000 (154 to 304)	OR 1.13 (0.73 to 1.75)	484 (1 RCT) ¹	⊕⊕⊕○ MODERATE ^a	
Sexual re-offence (arrests) - Group psychotherapy vs probation follow up: 10 years	72 per 1,000	135 per 1,000 (57 to 289)	OR 2.01 (0.77 to 5.21)	231 (1 RCT) ²	⊕⊕○○ LOW ^{a,b}	

***The risk in the intervention group** (and its 95% confidence interval) is based on the assumed risk in the comparison group and the **relative effect** of the intervention (and its 95% CI). **CI:** Confidence interval; **OR:** Odds ratio

GRADE Working Group grades of evidence

High certainty: We are very confident that the true effect lies close to that of the estimate of the effect

Moderate certainty: We are moderately confident in the effect estimate: The true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different

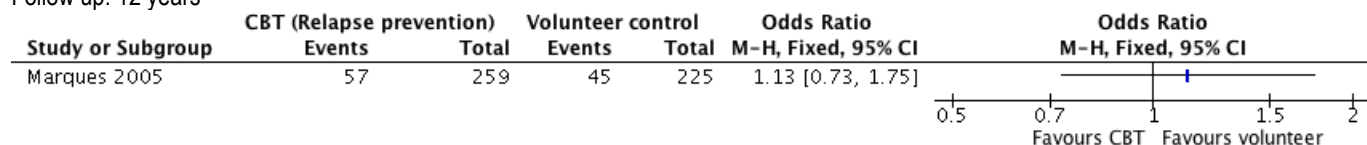
Low certainty: Our confidence in the effect estimate is limited: The true effect may be substantially different from the estimate of the effect

Very low certainty: We have very little confidence in the effect estimate: The true effect is likely to be substantially different from the estimate of effect

1. Marques 2005. 2. Romero 1983. a. Serious risk of bias due to lack of blinding. b. The sample size is <300 and effect estimate is imprecise.

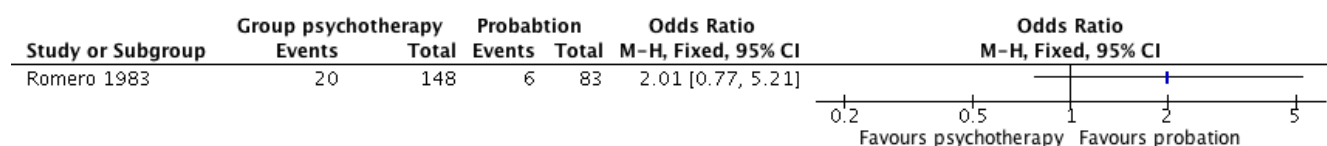
Outcome: Sexual re-offence

Follow up: 12 years



Outcome: Sexual re-offence

Assessed with: Arrests Follow up: 10 years



Counselling (assertion therapy) & pharmacological (Provera) compared to pharmacological (Provera) treatment only for non-caregiver who commit maltreatment

Patient or population: 32 voluntary subjects who had exposed on at least one occasion

Setting: Country: Canada; Intervention setting: Not stated (author from Clarke Institute of Psychiatry)

Intervention: Counselling (assertion therapy) & pharmacological (Provera)

Comparison: pharmacological (Provera) treatment only

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	Nº of participants (studies)	Certainty of the evidence (GRADE)	Comments
	Risk with pharmacological (Provera) treatment only	Risk with Counselling (assertion therapy) & pharmacological (Provera)				
Recidivism (subsequent involvement with court) follow-up: post treatment	353 per 1,000	66 per 1,000 (5 to 405)	OR 0.13 (0.01 to 1.25)	32 (1 RCT) ¹	⊕○○○ VERY LOW ^{a,b}	

***The risk in the intervention group** (and its 95% confidence interval) is based on the assumed risk in the comparison group and the **relative effect** of the intervention (and its 95% CI). **CI:** Confidence interval; **OR:** Odds ratio

GRADE Working Group grades of evidence

High certainty: We are very confident that the true effect lies close to that of the estimate of the effect

Moderate certainty: We are moderately confident in the effect estimate: The true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different

Low certainty: Our confidence in the effect estimate is limited: The true effect may be substantially different from the estimate of the effect

Very low certainty: We have very little confidence in the effect estimate: The true effect is likely to be substantially different from the estimate of effect

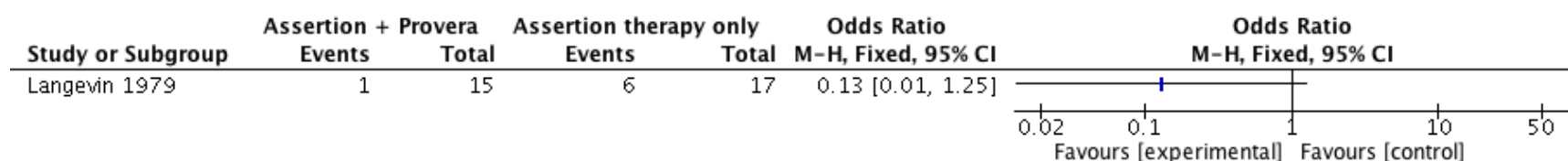
1. Langevin 1979.

a. Serious risk of bias due to lack of blinding and differential loss of data between treatment groups.

b. Very few people included in the analysis.

Outcome: Recidivism (subsequent involvement with court)

Follow-up: post treatment



Imaginal desensitization (ID) compared to medroxyprogesterontherapy (M) for non-caregivers who commit maltreatment

Patient or population: 31 men who sought treatment for anomalous sexual urges

Setting: Country: Australia; Intervention: Clinic

Intervention: Imaginal desensitization (ID) (admission to psychiatric hospital for 5 days for ID therapy, 2 sessions first day, 3 sessions for remaining 4 days)

Comparison: Medroxyprogesteron (M) therapy (150mg injection every 2 weeks for 4 injections, followed by 4 monthly injections)

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	Nº of participants (studies)	Certainty of the evidence (GRADE)	Comments
	Risk with medroxyprogesterone (M)	Risk with Imaginal desensitization (ID)				
Recidivism assessed with: anomalous behaviour follow up: 1 month	100 per 1,000	300 per 1,000 (35 to 835)	OR 3.86 (0.33 to 45.57)	20 (1 RCT) ¹	⊕○○○ VERY LOW _{a,b}	
Recidivism assessed with: anomalous behaviour follow up: 1 years	111 per 1,000	300 per 1,000 (35 to 837)	OR 3.43 (0.29 to 40.95)	19 (1 RCT) ¹	⊕○○○ VERY LOW _{a,b}	
Recidivism assessed with: anomalous behaviour follow up: 2 years	333 per 1,000	399 per 1,000 (91 to 813)	OR 1.33 (0.20 to 8.71)	19 (1 RCT) ¹	⊕○○○ VERY LOW _{a,b}	

*The risk in the intervention group (and its 95% confidence interval) is based on the assumed risk in the comparison group and the **relative effect** of the intervention (and its 95% CI).

CI: Confidence interval; OR: Odds ratio

GRADE Working Group grades of evidence

High certainty: We are very confident that the true effect lies close to that of the estimate of the effect

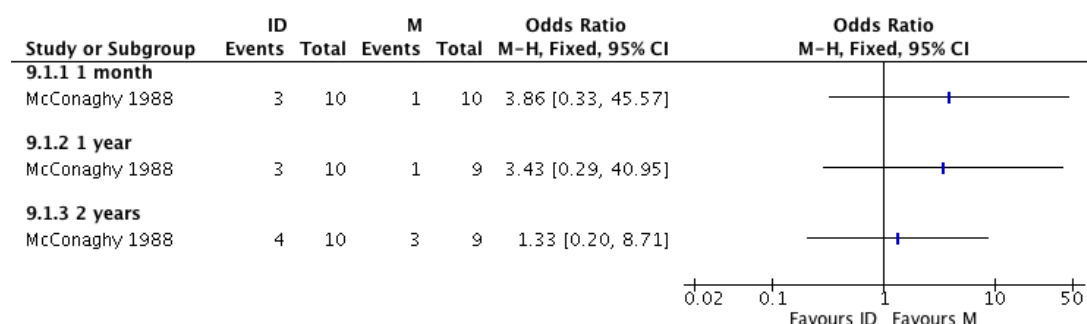
Moderate certainty: We are moderately confident in the effect estimate: The true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different

Low certainty: Our confidence in the effect estimate is limited: The true effect may be substantially different from the estimate of the effect

Very low certainty: We have very little confidence in the effect estimate: The true effect is likely to be substantially different from the estimate of effect

1. McConaghy 1988. a. Very serious risk of bias due to inadequate randomization, lack of blinding and differential dropout rates between groups. b. Very small number of events in analysis.

Outcome: Recidivism (anomalous behaviour)



Medroxyprogesteronetherapy (M) compared to M + imaginal desensitization (ID) for non-caregivers who commit maltreatment

Patient or population: 31 men who sought treatment for anomalous sexual urges

Setting: Country: Australia; Intervention: Clinic

Intervention: Medroxyprogesteronetherapy (M) (150mg injection every 2 weeks for 4 injections, followed by 4 monthly injections)

Comparison: M + imaginal desensitization (ID) (M: 150mg injection every 2 weeks for 4 injections, followed by 4 monthly injections) + ID therapy (admission to psychiatric hospital for 5 days for ID therapy, 2 sessions first day, 3 sessions for remaining 4 days)

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	No of participants (studies)	Certainty of the evidence (GRADE)	Comments
	Risk with M + imaginal desensitization (ID)	Risk with Medroxyprogesteronetherapy (M)				
Recidivism assessed with: anomalous behaviour follow up: 1 months	100 per 1,000	100 per 1,000 (6 to 674)	OR 1.00 (0.05 to 18.57)	20 (1 RCT) ¹	⊕○○○ VERY LOW _{a,b}	
Recidivism assessed with: anomalous behaviour follow up: 1 years	100 per 1,000	333 per 1,000 (39 to 858)	OR 4.50 (0.37 to 54.16)	19 (1 RCT) ¹	⊕○○○ VERY LOW _{a,b}	
Recidivism assessed with: anomalous behaviour follow up: 2 years	100 per 1,000	444 per 1,000 (64 to 903)	OR 7.20 (0.62 to 83.34)	19 (1 RCT) ¹	⊕○○○ VERY LOW _{a,b}	

*The risk in the intervention group (and its 95% confidence interval) is based on the assumed risk in the comparison group and the **relative effect** of the intervention (and its 95% CI).

CI: Confidence interval; OR: Odds ratio

GRADE Working Group grades of evidence

High certainty: We are very confident that the true effect lies close to that of the estimate of the effect

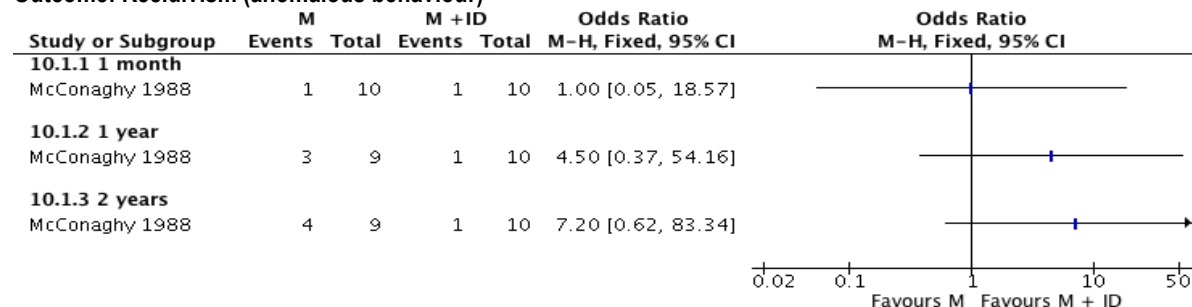
Moderate certainty: We are moderately confident in the effect estimate: The true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different

Low certainty: Our confidence in the effect estimate is limited: The true effect may be substantially different from the estimate of the effect

Very low certainty: We have very little confidence in the effect estimate: The true effect is likely to be substantially different from the estimate of effect

1. McConaghy 1988. a. Serious concerns due to inadequate randomization and lack of blinding. b. Very small number of events included in analysis.

Outcome: Recidivism (anomalous behaviour)



Imaginal desensitization (ID) compared to ID + medroxyprogesteronethrapy (M) for non-caregivers who commit maltreatment

Patient or population: 31 men who sought treatment for anomalous sexual urges

Setting: Country: Australia; Intervention: Clinic

Intervention: imaginal desensitization (ID) (admission to psychiatric hospital for 5 days for ID therapy, 2 sessions first day, 3 sessions for remaining 4 days)

Comparison: ID + medroxyprogesterone therapy (M) (ID therapy - admission to psychiatric hospital for 5 days for ID therapy, 2 sessions first day, 3 sessions for remaining 4 days) + (150mg injection every 2 weeks for 4 injections, followed by 4 monthly injections)

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	Ne of participants (studies)	Certainty of the evidence (GRADE)	Comments
	Risk with ID + medroxy- progesterone therapy (M)	Risk with imaginal desensitization (ID)				
Recidivism assessed with: anomalous behaviour follow up: 1 months	100 per 1,000	300 per 1,000 (35 to 835)	OR 3.86 (0.33 to 45.57)	20 (1 RCT) ¹	⊕○○○ VERY LOW _{a,b}	
Recidivism assessed with: anomalous behaviour follow up: 1 years	100 per 1,000	300 per 1,000 (35 to 835)	OR 3.86 (0.33 to 45.57)	20 (1 RCT) ¹	⊕○○○ VERY LOW _{a,b}	
Recidivism assessed with: anomalous behaviour follow up: 2 years	100 per 1,000	400 per 1,000 (56 to 883)	OR 6.00 (0.53 to 67.65)	20 (1 RCT) ¹	⊕○○○ VERY LOW _{a,b}	

*The risk in the intervention group (and its 95% confidence interval) is based on the assumed risk in the comparison group and the **relative effect** of the intervention (and its 95% CI).

CI: Confidence interval; OR: Odds ratio

GRADE Working Group grades of evidence

High certainty: We are very confident that the true effect lies close to that of the estimate of the effect

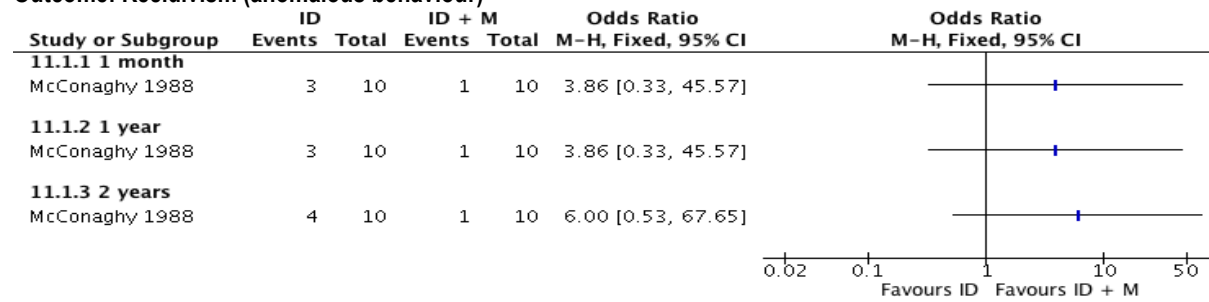
Moderate certainty: We are moderately confident in the effect estimate: The true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different

Low certainty: Our confidence in the effect estimate is limited: The true effect may be substantially different from the estimate of the effect

Very low certainty: We have very little confidence in the effect estimate: The true effect is likely to be substantially different from the estimate of effect

1. McConaghy 1988. a. Very serious concern for risk of bias due to inadequate randomization, lack of blinding and differential dropout between groups. b. Very small number of events in analysis.

Outcome: Recidivism (anomalous behaviour)



Web Annex 4c: EtD table – Interventions for perpetrators to address maltreatment recurrence

WHO Child Maltreatment (CM) Evidence to Decision Framework

Scoping Questions:

- A) For perpetrators of CM (P), does psychosocial intervention A, compared to psychosocial intervention B or no psychosocial intervention (C), result in a reduction of recurrence of CM (O)?
- B) For perpetrators of CM (P), does pharmacological intervention A (I), compared to pharmacological intervention B or no pharmacological intervention (C), result in a reduction of recurrence of CM (O)?

Population: Study participants included adolescents or adults who maltreated children (aged 0-17); forms of maltreatment included physical abuse, sexual abuse, neglect, and emotional abuse.

Intervention: Any psychosocial or pharmacological intervention designed to address maltreatment.

Comparison: Any form of psychosocial/pharmacological intervention or no intervention.

Main outcomes: Reduction in number of subsequent involvements by parent/caregivers and/or children with authorities (i.e., CPS or justice reports); Reported recurrence by non-perpetrating caregiver; Self-reported recurrence by perpetrating caregiver

Setting: Any healthcare or social service setting

Perspective: Global context

Background: Child maltreatment is a major global public health problem, with many physical, emotional, and relationship consequences across the lifespan, such as injury and attachment disorders beginning in infancy, academic failure and poor peer relationships in childhood, substance abuse in adolescence, relationship problems and maltreatment of one's own children in adulthood, and mental health symptoms and disorders across childhood, adolescence, and adulthood.¹⁻⁵

When maltreatment experiences are co-occurring⁶ or recurring⁷, children may face increased risk of impairment.⁸⁻¹⁰ While there is no standard definition of recurrence within the context of research, Fluke and colleagues¹¹ have defined recurrence (aka revictimization and repeated maltreatment) as the “second, third, or subsequent time that a child has been found to be a victim of maltreatment following a prior determination that a child was victimized”. This differs from a *referral/notification* to a child protection service (CPS) agency by, for example, a mandated reporter. The referral may or may not be “screened in” by the CPS intake worker and, correspondingly, a *report* indicates that the referral/notification was screened in for investigation.¹¹

In this summary we try to avoid the label of “perpetrator” to acknowledge the potentially unhelpful nature of this term.

	Criteria	Judgement	Research evidence	Additional considerations								
Problem	Is the problem a priority?	☐ No ☐ Probably no ☐ Probably yes ☒ Yes ☐ Varies ☐ Don't know	Global estimates of child maltreatment indicate that a significant proportion of adults have experienced child maltreatment as a child, including childhood physical abuse (22.6%), emotional abuse (36.3%), neglect (16.3%), and sexual abuse (18% of women and 7.6% of men). ¹²⁻¹⁴									
Values	Is there important uncertainty about or variability in how much people value the main outcomes?	☐ Important uncertainty or variability ☐ Possibly important uncertainty or variability ☒ Probably no important uncertainty or variability ☐ No important uncertainty or variability ☐ No known undesirable outcomes	In June 2016, the WHO Child Maltreatment Guideline Development Group (GDG) ranked outcomes on a scale of 0-9, where 1-3 represent 'unimportant' outcomes; 4-6 represent 'important, but not critical' outcomes and 7-9 represent 'critical' outcomes for decision-making. Below are three outcomes ranked as 'critical'. The relative importance or values of the main outcomes of interest: <table border="1"> <thead> <tr> <th>Outcome</th> <th>WHO relative importance</th> </tr> </thead> <tbody> <tr> <td>1. Reduction in number of subsequent involvements by parent/caregivers and/or children with authorities</td> <td>M: 7.615</td> </tr> <tr> <td>2. Reported recurrence by non-perpetrating caregiver</td> <td>M: 7.07</td> </tr> <tr> <td>3. Self-reported recurrence by perpetrating caregiver</td> <td>M: 7.00</td> </tr> </tbody> </table>	Outcome	WHO relative importance	1. Reduction in number of subsequent involvements by parent/caregivers and/or children with authorities	M: 7.615	2. Reported recurrence by non-perpetrating caregiver	M: 7.07	3. Self-reported recurrence by perpetrating caregiver	M: 7.00	
Outcome	WHO relative importance											
1. Reduction in number of subsequent involvements by parent/caregivers and/or children with authorities	M: 7.615											
2. Reported recurrence by non-perpetrating caregiver	M: 7.07											
3. Self-reported recurrence by perpetrating caregiver	M: 7.00											

Desirable Effects	How substantial are the desirable anticipated effects?	☐ Trivial ☒ Small ☐ Moderate ☐ Large ☐ Varies – ☐ Don't know	Interventions addressed at caregivers who have maltreated children: n=7 RCTs, 2774 participants We have very low certainty in the evidence except for information related to SafeCare, for which we have moderate certainty, and the information related to home visits with a public health nurse, for which we have low certainty. For most therapies and outcomes, there was either only one study or few studies reporting on the effects of different interventions.					
			Certainty	Trial (follow-up period of assessment)	# participants	Measure	Benefits – how much re-report or recurrence rates were reduced per 1000 vs. comparison	
			Moderate	SafeCare (12 mos)	2035	Referrals	59 per 1000	
			Low	Home visiting with nurse (12 mos) - PA	160	Recurrence	101 per 1000	
			Low	Home visiting with nurse (12 mos) - N	160	Recurrence	47 per 1000	
			Very low	PCIT (just over 2 yrs)	77	Re-reports/recurrence	295 per 1000	
			Very low	Individual CBT (~12 mos)	37	Referrals/recurrence	170 per 1000	
Undesirable Effects	How substantial are the undesirable anticipated effects?	☐ Large ☐ Moderate ☐ Small ☐ Trivial ☒ Varies – ☐ Don't know	Very low	Family therapy (~ 12 mos)	30	Referrals/recurrence	138 per 1000	
			Very low	PCIT or PCIT + motivational intervention (just over 2 yrs)	153	Re-reports/recurrence	129 per 1000	

			<table><tr><td>Very low</td><td>Assertion therapy & Provera (vs. Provera)</td><td>32</td><td>Involvement with court</td><td>298 per 1000</td></tr></table>	Very low	Assertion therapy & Provera (vs. Provera)	32	Involvement with court	298 per 1000	
Very low	Assertion therapy & Provera (vs. Provera)	32	Involvement with court	298 per 1000					
			All of the included studies for non-caregivers addressed sexual offenses – one study addressed MST for adolescents and the other 4 studies addressed interventions for adults who had committed sexual crimes. Studies tended to address recurrence rates through assessments of arrests or involvement with court. Outcomes related to one study (McConnaghy 1988¹⁵) are only summarized below as the study involved very few people and measures addressed participants’ self-reports of “anomalous urges”, which can at best be considered a proxy for recurrence. We have very low certainty that MST for youths leads to reductions in recurrence. For sexual re-offences, we have moderate certainty that adult counseling shows no benefit and low certainty that group psychotherapy shows no benefit. We also have very low certainty that assertion therapy & Provera may enable a reduction in court involvement. Harms: • Side effects for Provera excessive weight gain, malaise, migraine headaches, severe leg cramps, elevation of blood pressure, gastrointestinal complaints, gallbladder stones, and diabetes mellitus¹⁶. Men using Provera may also feel “psychologically demasculated”¹⁷ • No other harms were reported across included studies						
Balance of effects	Does the balance between desirable and undesirable effects favor the intervention or the comparison?	☐ Favors the comparison ☐ Probably favors the comparison ☐ Does not favor either the intervention or the comparison ☐ Probably favors the intervention ☐ Favors the intervention X Varies ☐ Don't know	The balance between desirable and undesirable effects probably favours the intervention for youth who commit sexual crimes; and probably favours the comparison for adults who commit sexual crimes.						

Resources required	How large are the resource requirements (costs)?	☒ Large costs ☐ Moderate costs ☐ Negligible costs and savings ☐ Moderate savings ☐ Large savings ☐ Varies ☐ Don't know	<i>Costs of programs for caregivers who maltreat children (excluding sexual abuse):</i> - There is limited evidence for the costs of programs directed at caregivers, including costs for counseling/therapy interventions or parenting interventions delivered in a clinic, community, or home setting. One study evaluating trauma-focused behavioural therapy (TF-CBT) for children exposed to sexual abuse and their non-offending caregivers suggests that – based on 2010-2011 Australian dollars (\$) for a 12-month period – the total cost for non-directive counseling is \$20,740 and for trauma-focused cognitive behavioral therapy (TF-CBT) is \$20,511.¹⁸ Note that this study is not directed at caregivers who have committed sexual abuse. - One study¹⁹ evaluated the cost of parent-child interaction therapy (PCIT) for children with disruptive behaviour disorders (i.e., not assessing children exposed to maltreatment) and their caregivers. It was found that start-up costs of PCIT, including equipment and training were \$14,063.79 in 2007 U.S. dollars and the average cost of providing PCIT from intake to termination was estimated was \$1,000/client for 10-12 sessions of treatment. - No studies evaluating parenting interventions in a home setting were found for children exposed to maltreatment. However, a systematic review of cost-effectiveness studies for home visiting programs that aim to prevent maltreatment (i.e., mostly studies outside of the scope of this review) extracted program components of different home visiting programs and applied Australian 2010 units costs.²⁰ The authors of this systematic review found that program costs varied dramatically depending on the program components and intensity (\$1800-\$30,000 per family in 2010 Australian dollars).²⁰ In addition, there is some data related to multisystemic therapy (MST)²¹ – an intensive intervention that is partially delivered in the home – for chronic, violent or substance abusing juvenile offenders (i.e., not maltreated children), which suggests that the cost of MST may be \$4,743 (in year 2000 U.S. dollars). <i>Costs of programs for people (caregivers & non-caregivers) who have sexually abused children:</i> Psychosocial: Costs of programs for people who sexually abuse children are challenging to determine, as a variety of factors impact program costs, such as incarceration, risk of recurrence, and type of treatment. One cost benefit analysis from 2001²² related to CBT treatment for adults who have sexually abused children (discussed below) suggests that incarceration costs can be \$137,400 (1998 Australian dollars) and tangible costs, such as costs for court proceedings and police involvement, can be \$19,890. Another cost-effectiveness study from 2001²² suggests that tangible costs for offender-related expenses (investigation, trial, incarceration, etc.) would be \$169,000 (1990 U.S. dollars) and \$14,300 for victim-related offences, as well as \$10,000 for in-prison treatment.	

			• Pharmacological: No studies evaluating the cost of pharmacological interventions for non-caregivers who commit sexual abuse were found. However, anecdotal evidence²³ suggests such programs could be costly to implement since persons charged with sexual crimes often do not want to take medication for these behaviours^{16,17,24} and medication compliance may rely upon an unwilling person to take medication or a parole officer (or other personnel) to watch/ensure the person swallow the medicine. Costs for individuals to access this intervention must also be considered (e.g., transportation and child care).	
Certainty of evidence of required resources	What is the certainty of the evidence of resource requirements (costs)?	☐ Very low ☒ Low ☐ Moderate ☐ High ☐ No included studies		

Cost effectiveness	Does the cost-effectiveness of the intervention favor the intervention or the comparison?	☐ Favors the comparison ☐ Probably favors the comparison ☒ Does not favor either the intervention or the comparison ☐ Probably favors the intervention ☐ Favors the intervention ☐ Varies ☐ No included studies	<i>Cost-effectiveness of programs for caregivers who maltreat children (excluding sexual abuse):</i> - One study assessing PCIT for children with disruptive behaviour disorders¹⁹ suggests in order to achieve the smallest measurable change in behaviour, costs ranged from 22.07-100.56 U.S. dollars per child, depending on the assessment used (i.e., Child Behavior Checklist vs. Eyberg Child Behavior Inventory). The authors argue in their discussion that PCIT is a cost effective treatment compared to estimated costs this population incurs without treatment and that the benefits go beyond the financial domain and into decreases undesirable behaviours. - For the systematic review about preventative home-visiting programs, the authors note that “the most cost-effective programs were targeted at higher risk families [which] is not surprising. Home visiting is an expensive service, with some programs reporting that visitors may see only two to four families per day. Such a high cost program is unlikely to represent a worthwhile investment from a societal perspective unless there is commensurate opportunity for a high level of benefit for each family visited”.²⁰ Relatedly, information about MST²¹ suggests that the net benefits (i.e., benefits minus cost) of MST for juvenile offenders was \$31,661 (includes Taxpayer Benefits Only) to \$131,918 (includes Taxpayer and Crime Victim Benefits). For the taxpayer information, the authors consider whether spending a taxpayer dollar now on a program will save more than a taxpayer dollar in the years ahead. For the crime victim information, the authors consider that if a program can reduce rates of future criminal offending, not only will taxpayers receive benefits but there will also be fewer crime victims. <i>Cost-effectiveness of programs for people (caregivers & non-caregivers) who have sexually abused children:</i> Psychosocial. One cost benefit analysis from 2001²² suggests that the net benefit [where net benefit = tangible benefits (i.e., resource savings) + intangible benefits (e.g., health and social effects of sexual abuse on children) – program costs] of CBT programs for adults who have sexually abused children are considerable and range from \$1,100 to \$76,710 (1998 Australian dollars) per re-offense depending on if intangible costs to victims are or are not considered and depending on reduction in recurrence rates afforded by the program. Another cost-effectiveness study from 2001²² suggests the net benefits of treatment for people who are imprisoned for sexual abuse ranges from \$4,545 (1990 U.S. dollars) per victim for a program that is ineffective (2% reduction in recidivism rates) to \$33,573 per victim for a program that is effective (16% reduction in recidivism rates) Pharmacological. No cost-effectiveness studies related to pharmacological interventions for adolescents or adults who sexually abuse children were found.	

Equity	What would be the impact on health equity?	☐ Reduced ☐ Probably reduced ☐ Probably no impact ☐ Probably increased ☐ Increased ☒ Varies ☐ Don't know	5. Stigma. In considering avoidable or unjust differences in access to services for caregivers and non-caregivers who maltreat children, it is important to consider the impact of stigma. Caregivers who maltreat children face considerable stigma and shame about their parenting practices.^{25,26} People who have potentially harmful sexual interests also face extreme stigma, as well as myths about their inability to be treated and myths about the frequency with which they abuse children^{27–30} (For example, there is increasing research about non-offending people with potentially harmful sexual interests.³¹) 6. Prejudice and social injustices. Stigma against caregivers can be compounded by the prejudicial representations of certain groups as “bad parents” and consequently healthcare provider’s tendency to report certain groups to child welfare at a higher frequency.^{32,33} 7. Healthcare provider’s discomfort. A meta-synthesis of qualitative research about mandated reporters suggests that many healthcare providers struggle to remain non-judgemental and respectful towards caregivers who maltreat children.³⁴ Healthcare providers may also not want to provide treatment to people who have sexually offended against children.^{30,35} 8. Reduced access to services. For people who have potentially harmful sexual desires, fear and stigma may decrease their access to services.³⁶ For example, research shows that people with potentially harmful sexual interests very rarely seek help before offence due to “concerns about confidentiality, fears of social and legal consequences, personal shame or confusion about the problem, affordability, and challenges finding competent therapists who were adequately equipped to help them”.³⁷ 9. With this in mind, interventions targeted towards people who maltreat children may increase equity when: a) Delivered in a non-stigmatizing, non-judgemental, and respectful manner and b) When they are provided with equal access and not based on discriminatory or otherwise prejudicial perceptions of parenting	

Acceptability	Is the intervention acceptable to key stakeholders? ☐ No ☐ Probably no ☐ Probably yes ☐ Yes ☒ Varies ☐ Don't know	7. A meta-synthesis of qualitative research about mandated reporters suggests that many healthcare providers struggle to remain non-judgemental and respectful towards caregivers who maltreat children.³⁴ Healthcare providers may also not want to provide treatment to people who have sexually offended against children.^{30,35} 8. Some research from HICs suggests that certain psychosocial interventions may be acceptable to caregivers who have maltreated their children, such as CBT or family therapy³⁸, multisystemic therapy³⁹, SafeCare,⁴⁰ or parent child interaction therapy⁴¹. These interventions, however, may be less acceptable to some high risk groups. For example, Thomas⁴² reported “higher than ideal” attrition rates (42% of participants completed follow-up assessments) for their parent-child interaction therapy trial. There was a higher rate of attrition reported among higher risk families, particularly those referred from a child protective agency. 9. In LMICs specifically, psychosocial interventions may be acceptable if local providers are involved in the selection of appropriate interventions and the modification of these interventions so they are culturally appropriate.^{43,44} 10. There is also some research to suggest people who have potentially harmful sexual interests do not find pharmacological interventions acceptable^{16,17,24} and find some of the psychosocial interventions unacceptable. For example, in the trial reported by Langevin and colleagues¹⁷, the study condition in which participants were administered Provera alone was eliminated as the number of drop outs was too high (and the number of remaining participants too few). Side effects associated with the use of the drug were reported to be weight gain, nausea and feeling emasculated. Even with a court order, the dropout rate for participants assigned to the use of Provera (alone or in combination with therapy) was 67%. Patients expressed reluctance and fear in association with the use of Provera. Similarly, Rooth⁴⁵ reported that self-regulation therapy was not acceptable to participants. Participants were forced to expose themselves in a mirror while listening to a tape-recorded description of the act of exposure. As a result, patients described feeling depressed, ashamed, embarrassed and angry. Marques et al.⁴⁶ also reported problems with attrition for prisoners who have been charged with sexual offences (including sexual offences against children) such that 20% of patients selected for treatment withdrew before they were transferred to the program. When asked why, potential participants cited a change of mind, concerns about transfer, stigma associated with therapy, a lack of incentives, and access to other vocational opportunities.	

Feasibility	Is the intervention feasible to implement?	☐ No ☐ Probably no ☐ Probably yes ☐ Yes ☒ Varies ☐ Don't know	3. Research suggests^{47,48} that major barriers to implementation of psychosocial interventions in LMICs include: a. lacked of skilled personnel to carry out intervention; b. lack of cultural acceptability of components of the intervention; c. cost for families to receive intervention (e.g. time away from work, and financial, in terms cost of traveling to appointment). 4. Aside from these barriers, some of the psychosocial interventions targeted at caregivers are very intensive and would require a significant commitment of resources. For example, multisystemic therapy can involve daily home visits and staff that are available 24/7.³⁹ 5. However it is possible to address these barriers through, for example: a. involving local practitioners in the selection of appropriate and feasible interventions^{43,44}; b. training lay personnel to carry out evidence-based psychosocial interventions may be a feasible solution to lack of skilled personnel^{43,44}; c. modifying existing evidence-based, psychosocial interventions so they are culturally acceptable⁴⁷; d. reducing psychological jargon and delivering interventions in a way that includes considerations of family's beliefs systems and context, legal and social factors	

Should interventions that target perpetrators of child maltreatment be recommended?

Conclusions	Strong recommendation against the intervention	Conditional recommendation against the intervention	Conditional recommendation for either the intervention or the comparison	Conditional recommendation for the intervention	Strong recommendation for the intervention
Type of recommendation	☐	☐	☐	☐	☐
Recommendation	Given the limited evidence that currently exists about interventions for perpetrators of child maltreatment and the potential harmful effects that are associated with some of the interventions, and the high costs associated with all of the interventions, the GDG decided at this point in time to refrain from making any recommendation in favour or against psychosocial or pharmacological interventions for perpetrators.				

Justification	The GDG agrees that: • Overall the study results are mixed. • Some of the interventions (e.g. chemical castration) are associated with considerable harm and require highly skilled health professionals. Based on the very little knowledge about the topic the group did not want to make a recommendation based on expert opinion. • The GDG had very little confidence in the outcome measures used by many of the studies. Many of the interventions measure recurrence through police records or health service records, but these are very unreliable and are often biased, as only a fraction of those who are victimized make themselves known to any authorities. • Many of the studies do only measure proxy variables e.g. reduced urge in engaging in sexual activity with a child, instead of actual recurrence of violence. • All of the interventions are very costly, and the resources that would be required to implement effective interventions for perpetrators might be better spent elsewhere • Once the evidence-based has become stronger, there might be some potential in working with very young perpetrators. It was decided to describe the existing evidence and call for more research in that area. • Some aspects of the PICO question, for example the recurring perpetration of physical and emotional violence by caregivers and in particular the promising evidence from the PCIT intervention, was taken up in recommendation R8.
Subgroup considerations	For very young perpetrators, the intensive MST intervention has shown some positive effects but only for sexual violence perpetration. The intervention however is very costly, and the GDG felt that if it would recommend this information, this could lead to inefficient use of funds in settings in which money should rather be invested in prevention.
Implementation considerations	n/a
Monitoring and evaluation	n/a
Research priorities	Research on pharmacological interventions for perpetrators of violence. More research in low-intensity prevention interventions with young offenders.

Summary of intervention benefits:

Based on the study write-up, it is often unclear if the authors are assessing referral, re-report, or recurrence rates. In order to increase transparency, a summary of their definition of referral, report, or recurrence is listed before the findings. My (Jill's) assessment of whether or not their measure is assessing referral, re-report, or recurrence (based on the definition provided by Fluke et al.{Citation}) is found in brackets after the summary.

Interventions directed at caregivers:

Counseling/therapy:

Individual parent-child CBT vs. routine community services for physical abuse (Kolko 1996³⁸). Measure of referrals/re-report/recurrence assessed by: checking child abuse registry for outcome of children, as well as information about allegations of abuse or neglect (recurrence and referrals). Immediately post-intervention, we have very low certainty that referral/recurrence rates for the routine community services group were 250 per 1000 compared to 80 per 1000 for the individual child and parent CBT group (for a difference of 170).

Family therapy vs. routine community services for physical abuse (Kolko 1996³⁸). Measure of referrals/re-report/recurrence assessed by: checking child abuse registry for outcome of children, as well as information about allegations of abuse or neglect (recurrence and referrals). Immediately post-intervention, we have very low certainty that re-report rates (including substantiated reports) for the routine community services group were 250 per 1000 compared to 112 per 1000 for the family therapy group (for a difference of 138 per 1000).

Parenting, clinic or community:

PCIT and enhanced PCIT (ePCIT) vs. standard community based parenting group for physical abuse (Chaffin, 2004⁴⁹). Measure of referrals/re-report/recurrence assessed by: checking child welfare administrative database for unduplicated physical abuse report not attributable to study surveillance effect; reports that were ruled out or screened out were excluded (re-reports/recurrence). At a mean of 850 days (just over 2 years), we have very low certainty that children in the standard community care group had re-report rates of 486 per 1000 compared to 191 per 1000 in the parent-child interaction therapy group (for a difference of 295). At a mean of 850 days, we have very low certainty that children in the enhanced parent-child interaction therapy group had a re-report rate of 486 per 1000 compared to 366 per 1000 (for a difference of 120 per 1000).

PCIT + motivational intervention vs. PCIT only vs. services as usual + motivational intervention vs. services as usual (Chaffin 2011⁵⁰). Measure of referrals/re-report/recurrence assessed by: checking child welfare administrative database for unduplicated physical abuse report not attributable to study surveillance effect; reports that were ruled out or screened out were excluded (re-reports/recurrence). At a mean of 904 days (just over 2 years), we have very low certainty that children in services as usual group had recurrence rates of 294 per 1000 vs. 203 per 1000 in the PCIT + motivational intervention group (for a difference of 91 per 1000). Note that the PCIT alone vs. SAU with the motivational intervention has the same number of “events” (17 recurrence events in each group). When looking at both PCIT groups together (PCIT alone or PCIT + motivational intervention), we have very low certainty that children had recurrence rates of 373 per 1000 in the services as usual group vs. 244 per 1000 in the PCIT groups (for a difference of 129 per 1000).

Parenting, home-based:

SafeCare (uncoached) vs. SafeCare (coached) vs. Home-based services as usual (coached) vs. Home-based services as usual (uncoached) for child maltreatment (Chaffin 2012⁴⁰): Measure of referrals/re-report/recurrence assessed by: checking statewide child protective services database for any report occurring after study enrollment; as dispositional practices shifted over time, authors opted to include all reports rather than only screened-in or confirmed dispositions (referrals). At 12-month follow-up (mean of 6 years assessed), we have moderate certainty that the services as usual group will experience referrals at a rate of 450 per 1000 compared to 391 per 1000 in the SafeCare group (for a difference of 59 per 1000).

Home visiting by a public health nurse vs. standard care for physical abuse (MacMillan 2005⁵¹). Measure of referrals/re-report/recurrence assessed by: used child protection association reports; two experts in child maltreatment (adjudicators), masked to group assignment, independently assessed the summaries for every incident or visit to determine whether they represented occurrence of physical abuse or neglect (recurrence). At 12-month follow up, we have low certainty that children in the standard care group will experience recurrence of physical abuse at a rate of 431 per 1000 compared to 330 per 1000 for children receiving home visits from a public health nurse (for a difference of 101 per 1000). At 12-month follow-up we have low certainty that children in the standard care group will experience recurrence of neglect at a rate of 514 per 1000 compared to 467 per 1000 for children receiving home visits from a public health nurses (for a difference of 47 per 1000).

Multisystemic therapy vs. enhanced outpatient treatment (Swenson 2010³⁹). Measure of referrals/re-report/recurrence assessed by: new report of abuse of the target child, or abuse of any child by the target parent (re-reports/recurrence). At 16-month follow up, we have very low certainty that the enhanced outpatient treatment group had re-report/recurrence rates of 119 per 1000 compared to the 45 per 1000 in the multisystemic therapy group (for a difference of 74 per 1000).

Project Support vs. treatment as usual (Jouriles 2010⁵²). Measure of referrals/re-report/recurrence assessed by: checking child protective services records to assess whether participating families had been again referred to CPS for child maltreatment during 20 months following their baseline assessment (referrals). At 20 months follow-up, we have very low certainty that referral rates in the treatment as usual group were 278 per 1000 compared to 58 per 1000 in the Project Support intervention (for a difference of 20 per 1000).

Interventions directed at non-caregivers:

Multisystemic therapy vs. usual services (Borduin 2009⁵³). We have very low certainty that multisystemic therapy for adolescent youth (average age of 14, 98% boys) who are “juvenile sexual offenders) may lead to a reduction in self-reported criminal activity. At an average of 8.9 years of follow-up, we have very low certainty that 458 per 1000 of the youth in the usual services group will have at least one arrest for sexual crimes, compared to 85 per 1000 of the multisystemic therapy group (for a difference of 373 per 1000) and

583 per 1000 of the youth in the usual services group will have at least one arrest for non-sexual crimes compared to 289 per 1000 of the youth in the multisystemic therapy group (for a difference of 294 per 1000).

Cognitive behavioural therapy vs. no treatment (Marques 1994⁵⁴). We have very low certainty that at 12-years follow-up, that 200 per 1000 of the no treatment group will have a sexual re-offence vs. 220 per 1000 in the treatment group (where the no treatment group shows a benefit of 20 per 1000).

Group psychotherapy vs. probation only (Romero 1983⁵⁵). We have very low certainty that at 10-years follow-up, that 72 per 1000 of the probation only group will have a sexual re-offence (arrest) compared to 135 per 1000 in the group psychotherapy group (where the probation only group shows a benefit of 63 per 1000).

Assertion therapy vs. Provera & assertion therapy (Langevin 1979¹⁷). At post-treatment, we have very low certainty that 353 per 1000 of the Provera alone group will have a subsequent involvement with court vs. 66 per 1000 of the Provera plus assertion therapy group (for a difference of 287 per 1000).

Medroxyprogesterone (M) vs. imaginal desensitization (ID) (McConaghy 1988¹⁵). At 1-month follow-up, we have very low certainty that 100 per 1000 of the medroxyprogesterone group will have self-reported “anomalous urges” compared to 300 per 1000 in the imaginal desensitization group (for a difference of 200 per 1000), at 1-year follow-up we have very low certainty that 111 per 1000 of the medroxyprogesterone group will have self-reported “anomalous urges” compared to 300 per 1000 in the imaginal desensitization group (for a difference of 189 per 1000), and at 2-years follow-up we have very low certainty that 333 per 1000 of the medroxyprogesterone group will have self-reported “anomalous urges” compared to 399 per 1000 in the imaginal desensitization group (for a difference of 66 per 1000).

M vs. M + ID (McConaghy 1988¹⁵). At 1-month follow up, we have very low certainty that 100 per 1000 of the M + ID group will have anomalous urges compared to 100 per 1000 in the M only group; at 1 year follow-up we have very low certainty that 100 per 1000 of the M + ID will have anomalous urges vs. 333 per 1000 in the M only group (for a difference of 233 per 1000); at 2-year follow-up we have very low certainty that 100 per 1000 of the M + ID group will have anomalous urges vs. 444 per 1000 in the M alone group (for a difference of 344 per 1000).

ID vs. ID + M (McConaghy 1988¹⁵). At 1-month follow-up, we have very low certainty that 100 per 1000 of the ID + M group will have anomalous urges vs. 300 per 1000 in the ID alone group (for a difference of 200 per 1000); at 1-year follow-up we have very low certainty that 100 per 1000 of the ID + M group will have anomalous urges vs. 300 per 1000 in the ID alone group (for a difference of 200 per 1000); at 2-year follow-up we have very low certainty that the 100 per 1000 of the ID + M group will have anomalous urges vs. 400 per 1000 in the ID only group (for a difference of 400 per 1000).

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WHO guidelines for the health sector response to child maltreatment:

A literature review on best practices and preferences for initial health system response to child maltreatment

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ACRONYMS

CAC	Child Advocacy Centre
ES	Evidence Statement
HIC	High-income country
HIV	Human immunodeficiency virus
LMIC	Low- and middle-income country
NICE	National Institute for Health and Care Excellence
STI	Sexually transmitted infection
US	United States of America
UK	United Kingdom
WHO	World Health Organization

GLOSSARY

Definitions of key terms used in this document are provided below. They are based directly on definitions previously established by the WHO (where available), or on definitions from the UK's National Institute for Health and Care Excellence (NICE) Draft Guideline.

Actuarial instruments

Actuarial instruments, as referred to in this document, are structured decision-making processes or tools which assess risk of child maltreatment based on empirically established relationships between individual and family-level risk factors and occurrence of child maltreatment. Actuarial instruments do not allow for subjective judgment by the practitioner (NICE, 2017).

Analysis

Analysis involves organising the information collected during assessment, judging its significance and exploring different perspectives, to identify themes and reach conclusions on what these mean for the child or young person and their family. It should draw on knowledge from research and practice combined with an understanding of the child's needs (NICE, 2017).

Child abuse and maltreatment

"Child abuse or maltreatment constitutes all forms of physical and/or emotional ill-treatment, sexual abuse, neglect or negligent treatment or commercial or other exploitation, resulting in actual or potential harm to the child's health, survival, development or dignity in the context of a relationship of responsibility, trust or power" (WHO Consultation on Child Abuse Prevention, 1999).{ #3995@@hidden}

Consensus-based instruments

Consensus-based instruments, as referred to in this document, are structured decision-making processes or tools which assess risk of child maltreatment based on characteristics that have been deemed relevant through consensus among experts. Consensus-based instruments allow the practitioner to subjectively rate these characteristics (NICE, 2017).

Disabled children

Children who have a physical or mental impairment that has a substantial and long-term negative effect on their ability to do normal daily activities (NICE, 2017).

Emotional abuse

"The failure of a caretaker to provide an appropriate and supportive environment, and included acts that have an adverse effect on the emotional health and development of a child. Such acts include restricting a child's movements, denigration, ridicule, threats and intimidation, discrimination, rejection and other non-physical forms of hostile treatment" (WHO World Report on Violence and Health, 2002).{ #3996@@hidden}

Gillick competent

A child under 16 is said to be Gillick competent if they are judged to have sufficient intelligence and understanding to consent to, or refuse to consent to, medical treatment, which includes the prescription of contraception. Additional consent by a parent or person with parental responsibility is not required (NICE, 2017).

Indicators

Symptoms and signs that may indicate that abuse or neglect is taking place (NICE, 2017).

Infants, children and adolescents

"Infant' means aged under 1 year, 'child' means under 19 years and 'adolescent' means 10 to 19 years (WHO Definitions).

Neglect

The failure of a parent to provide for the development of the child – where the parent is in a position to do so – in one or more of the following areas: health, education, emotional development, nutrition, shelter and safe living conditions. Neglect is thus distinguished from circumstances of poverty in that neglect can occur only in cases where reasonable resources are available to the family or caregiver" (WHO World Report on Violence and Health).

Caregiver

This document uses 'caregiver' rather than 'parent' to acknowledge that people other than a child's parent may be caring for them. 'Caregiver' refers to the mother or father of a child, as well as someone other than a parent who is caring for a child. This could include family members, such as the partner of a parent (NICE, 2017).

Physical abuse

Those acts of commission by a caregiver that cause actual physical harm or have the potential for harm" (WHO World Report on Violence and Health).

Practitioner or Provider

A professional working with children and young people who may have a role in safeguarding them (NICE, 2017).

Risk factor

Situations, behaviours or underlying characteristics of children and their parents or carers that increase the child's vulnerability to abuse or neglect (NICE, 2017).

Sexual abuse

"Those acts where a caregiver uses a child for sexual gratification" (WHO World Report on Violence and Health).

Structured clinical judgment instruments

Structured clinical judgment (SCJ) instruments, as referred to in this document, are structured decision-making processes or tools which assess risk of child maltreatment based on empirically-derived risk factors but also allow the practitioner to subjectively rate these risk factors. SCJ instruments leave the final decision to the practitioner (NICE, 2017).

BACKGROUND

Introduction

Physical, emotional, and sexual abuse and neglect of children is a major global public health problem, with many short- and long-term health effects. To support countries' efforts in responding to the health consequences of such abuse and neglect, WHO will develop clinical guidelines for the health sector response to child maltreatment. The proposed guidelines will provide recommendations for health care providers, primarily from low and middle-income countries. They will address children including adolescents between the ages 0 to 18 years who have or may have experienced abuse and neglect and who have come in contact with the health system.

The guidelines are primarily meant for front line health care providers (e.g. general practitioners, nurses, paediatricians) to provide clinical care to children and adolescents who have experienced child maltreatment. They can also be useful for other cadres of specialist health care providers likely to see children. They will provide recommendations to address the health, including mental health, needs of children and adolescents who have experienced physical, sexual or emotional abuse or neglect. While the guidelines are global in nature, the guidelines are particularly concerned with their applicability in low- and middle-income countries, taking into account the more limited resources available.

In addition to providing evidence-based recommendations for quality clinical care, the guidelines will also formulate good practice considerations based on values and preferences, equity, human rights including legal obligations, gender equality as well as develop implementation considerations for low-resource settings.

To formulate these good practice considerations, we conducted literature reviews of both qualitative and quantitative studies on: (a) Child- and adolescent-centred care and initial response, (b) support to and preferences of children, caregivers and health workers and (c) clinical care in terms of practices to obtain medical history, conduct forensic interviewing, conduct a physical examination, conduct a forensic investigation, and document medical history, physical and forensic examination findings. These literature reviews will be used in conjunction with international human rights norms and standards to formulate guiding principles in relation to: consent, confidentiality, privacy, and evolving capacities of children and adolescents.

Scope of the Review

This literature review aimed to identify best practices for response to child maltreatment by the health sector. As noted above, the types of maltreatment covered in the review were sexual abuse, physical abuse, emotional abuse, and neglect. Other types of maltreatment, such as commercial sexual exploitation and trafficking and forced marriage, were not included. Practices included within the scope were those that could, at least in theory, be implemented by frontline health providers and/or within the health facility setting. Therefore, the components of response to child maltreatment that generally occur outside of a health facility setting (such as actions by social services or legal sectors) were not included in this review. The scope also was limited to practices that should occur after maltreatment is suspected or identified, and therefore the review did not cover maltreatment prevention, identification, or screening.

Review Questions

The review initially included nine questions addressing specific aspects of health sector response to child maltreatment. A tenth question was later added due to its emergence within the literature as a salient component of effective response. Table 1, below, lists each question and describes its specific scope.

Table 1. Review questions and scope of practices covered

Question		Scope
1	What are good clinical practices for conducting a physical examination and forensic investigation in supposed cases of child maltreatment in order to minimize harms/trauma to the child or adolescent who has or may have been exposed to physical abuse or neglect?	Practices that can be implemented by health care workers or within the health facility setting to avoid or reduce harm and trauma, including considerations such as: when and how an exam should be conducted; what should be addressed; ensuring privacy; who should be present or involved.
2	What are best practices for seeking informed consent and assent taking into account the cognitive maturity of the child?	Practices that can be implemented by health care workers related to how, when, and from whom consent and assent should be obtained, as well as what information should be given by the provider to the child/adolescent and/or caregiver.
3	What are child and adolescent-friendly, gender-sensitive and trauma-informed principles and practices to obtain medical history and conduct forensic interviewing?	Practices that can be implemented by health care workers or other interviewers within the health facility setting to avoid or reduce harm and trauma while conducting a medical history and/or forensic interview.
4	What are the good practices for documentation of the medical history findings and forensic examination findings?	Practices that can be implemented by health care workers or within the health facility setting to ensure accurate and effective documentation, taking into account child/adolescent rights and preferences including the right to pursue legal action.
5	What are best practices in assessing the safety of and developing a safety plan for children when child maltreatment is suspected and their non-offending caregivers?	Practices that can be implemented by health care workers or within the health facility setting to assess and promote safety of children/adolescents and/or non-offending caregivers, including: physical safety, emotional safety, and access to follow-up clinical care and/or legal and social services.
6	What are best practices for interacting with caregivers when child maltreatment is suspected, taking into account that caregivers might be perpetrators of abuse or might be aware of the abuse?	Practices that can be implemented by health care workers when interacting with caregivers throughout the response process, taking into account caregiver needs, right, and preferences while prioritizing wellbeing of the child/adolescent.

Question		Scope
7	What are best practices for ensuring the safety of health workers who are dealing with suspected cases of child maltreatment?	Practices that can be implemented by health care workers or within a health facility setting to promote safety of providers, including both physical and emotional safety.
8	How can uptake of services for child maltreatment be facilitated?	Practices that can be implemented by health care workers or within a health facility setting to promote uptake of health services for child maltreatment, including increasing awareness of and demand for services and addressing barriers to service uptake.
9	What instruments to assess the risk of recurrence of child maltreatment do exist and what considerations for their use by frontline health workers should be made?	Instruments identified within the literature as having the potential to assess risk of recurrence of child maltreatment, and factors that should be considered by health care workers related to appropriate and effective use of such tools.
10	What are best practices for ensuring appropriate reporting or referral (in accordance with local laws and policies) of child maltreatment once it is suspected or identified?	Practices that can be implemented by health care workers or within a health facility setting to ensure that providers take correct steps to notify appropriate agencies or authorities following identification or suspicion of child maltreatment.

METHODS

Summary of Pre-Identified Guidance Documents

The literature review team was given a list of nine documents that provided comprehensive best practices guidance on multiple aspects of response to child maltreatment relevant to the review questions. Descriptions of each of these documents appear in Annex 2. Two members of the review team coded all relevant sections of each document by review question using qualitative data analysis software, compiled data by review question, and wrote detailed summaries (see Annex 3).

Literature Search

After assessing the information available for each question, the team then identified gaps in coverage and developed a literature search strategy to address those areas where the information available in current guidance documents was insufficient. The table below describes the coverage for each question and how searches were tailored for each question.

Table 2. Review questions and scope of practices covered

Question		Coverage by Pre-Identified Guidance Documents	Type of Search
1	Conducting physical exam/forensic investigation	Comprehensive for sexual abuse; fairly comprehensive for physical abuse, emotional abuse, and neglect, but with gaps	Targeted: Low- and middle-income country (LMIC) literature, literature from high-income countries (HIC) not included in NICE Guideline ²⁴ review or published after April 2016, focused on physical abuse, emotional abuse, and neglect.
2	Seeking informed consent and assent	Not comprehensive	Full search
3	Obtaining medical history/conducting forensic interview	Comprehensive for sexual abuse; fairly comprehensive for physical abuse, emotional abuse, and neglect, but with gaps	Targeted: LMIC literature, literature from HIC not included in NICE Guideline ¹ review or published after April 2016, focused on physical abuse, emotional abuse, and neglect.
4	Documentation of medical history/exam	Comprehensive for sexual abuse; fairly comprehensive for physical abuse, emotional abuse, and neglect, but with gaps	Targeted: LMIC literature, literature from HIC not included in NICE Guideline ¹ review or published after April 2016, focused on physical abuse, emotional abuse, and neglect.
5	Assessing safety/developing safety plan	Fairly comprehensive for all forms of maltreatment, but with gaps: LMIC literature, literature from HIC not included in NICE Guideline ¹ review or published after April 2016	Targeted: LMIC literature, literature from HIC not included in NICE Guideline ¹ review or published after April 2016
6	Interacting with caregivers	Fairly comprehensive for all forms of maltreatment. Review team instructed to include relevant information obtained via other searches, but not to conduct a search specifically for this question.	No search
7	Ensuring health worker safety	Not comprehensive	Full search

²⁴ UK's National Institute for Health and Care Excellence (NICE) Draft Guideline systematically reviewed studies published in English from 2004 to April 2016 in Europe, Australia, Canada, USA and New Zealand

Question		Coverage by Pre-Identified Guidance Documents	Type of Search
8	Facilitating uptake of services	Not comprehensive	Full search
9	Instruments to assess risk of maltreatment and considerations for their use	Fairly comprehensive, but with gaps	Targeted: LMIC literature, literature from HIC published after 2008
10	Ensuring appropriate reporting/referral	NA: Question added later based on literature obtained via	No search

Searches were conducted using the databases Scopus and PubMed (which includes Medline), as well as the WHO's Global Index Medicus, which includes African Index Medicus (AIM), Latin-American and Caribbean Health Sciences Literature (LILACS), Index Medicus for the Eastern Mediterranean Region (IMEMR), Index Medicus for South-East Asia Region (IMSEAR), and Western Pacific Region Index Medicus (WPRIM). Search syntaxes for Scopus and PubMed were developed by identifying component concepts for each question. Questions 1, 3, and 4 were clustered into a group due to the similarity of concepts covered. Concepts were treated as keyword terms for the Scopus search and as MeSH terms or text words for the PubMed search. Filters were applied to target the searches as noted in the table above. When searching the Global Index Medicus regional databases, all articles with the main subject "child abuse" were retrieved. No language limitations were placed on any searches and all full searches included literature published after the year 2000. Annex 1 provides detailed information about syntaxes and filters used for each database, and numbers of records retrieved.

Records from all searches were exported to the citation management software Endnote (version X7). After removing duplicates, the title, author, year, journal, and abstract for each record were exported to a spreadsheet for screening.

Inclusion and exclusion criteria

Inclusion criteria were:

1. Primary research, expert guidance, or literature reviews on best practices for trauma-informed and child/adolescent-friendly health sector initial responses to children or adolescents who have or may have been sexually abused, physically abused, emotionally abused, or neglected, including: resources on how to obtain informed consent or assent, obtain medical history, conduct forensic interviewing, conduct a physical examination, conduct forensic investigation, document the medical history, physical and forensic examination findings, and assess safety of and develop safety plan for children and non-offending caregivers.
2. Primary research, expert guidance, or literature reviews on child/adolescent, caregiver, or provider values and preferences for health sector initial responses to children or adolescents who have or may have been sexually abused, physically abused, emotionally abused, or neglected, including: how to obtain informed consent or assent, obtain medical history, conduct forensic interviewing, conduct a physical examination, conduct forensic investigation, document the medical history, physical and forensic examination findings, and assess safety of and develop safety plan for children and non-offending caregivers.
3. Primary research, expert guidance, or literature reviews on best practices for provider-caregiver interactions, and ensuring safety of health workers when child maltreatment is suspected.
4. Primary research, expert guidance, or literature reviews on provider or caregiver values and preferences for provider-caregiver interactions, and ensuring safety of health workers when child maltreatment is suspected.
5. Primary research, expert guidance, or literature reviews on uptake of services for child maltreatment, including strategies for facilitating uptake, barriers to uptake, and factors that influence uptake.
6. Primary research, expert guidance, or literature reviews on instruments to assess risk of recurrence of child maltreatment, including which instruments exist and considerations that should be made for their use.

After the tenth review question was developed during the early stages of screening, one more inclusion criterion was added:

7. Primary research, expert guidance, or literature reviews on reporting or referral of suspected child maltreatment by health care providers, including strategies for promoting reporting or referral and barriers to reporting or referral.

Exclusion criteria were:

1. Resources on the prevention of child maltreatment.
2. Resources on the treatment and rehabilitation of child maltreatment perpetrators.
3. Resources focused on adults who were maltreated as children.
4. Resources focusing on the long-term rehabilitation or life experiences of children who have experienced maltreatment.
5. Calls for future research or articles on study design.
6. Resources focusing on types of child maltreatment other than physical abuse, emotional abuse, sexual abuse, or neglect.
7. Studies documenting or assessing the extent of the problem.

8. Medical case reports of individual children or adolescents who have experienced maltreatment.
9. Resources not accessible in softcopy within two weeks of a request from the copyright library.

Screening and selection

Two members of the review team conducted a title and abstract screening of all records, and 10% of all records were double-screened to verify consistency of application of inclusion and exclusion criteria. One member of the review team then conducted a full-text screening of all articles assessed as potentially relevant based on title and abstract, and determined which articles met inclusion criteria and for which questions those articles were relevant. At this point, non-primary research articles were assessed for redundancy with the pre-identified guidance documents. Articles were included that provided information not already included in the guidance document summaries or that met the identified gaps (e.g. literature from countries not included in the review for the NICE Guideline or very recent literature). All primary research articles that met inclusion criteria were included, with one exception. Nine Portuguese-language articles were excluded, as articles describing the same or very similar research were available in English. This decision was made after consulting the WHO team, in order to reduce the amount of translation assistance needed.

Data extraction

Three members of the review team extracted data from the final set of articles. For non-primary research articles, data extracted included the evidence base (e.g.. details of the literature included for reviews, or qualifications of the authors for expert guidance pieces) and specific information corresponding to each relevant review question. For primary research articles, data extracted included methods (study design, methodology, and participant characteristics), study aims, and specific findings corresponding to each relevant review question.

Synthesis

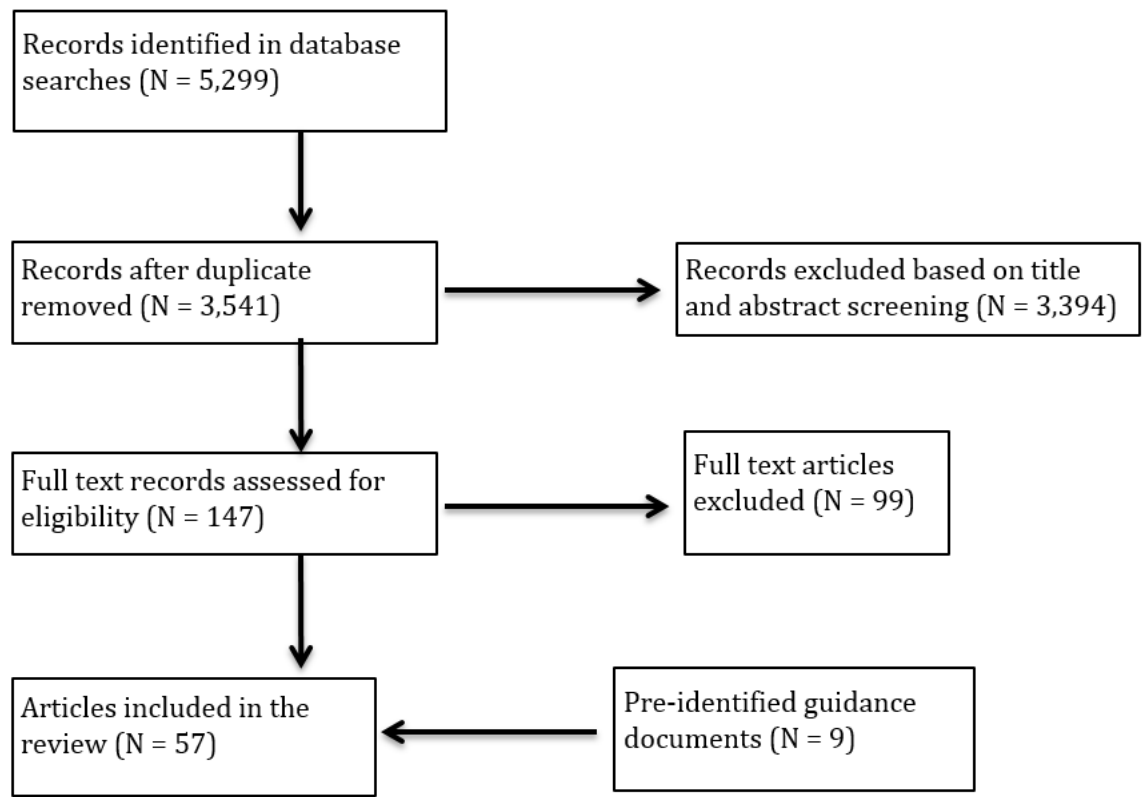
Data were extracted from all primary and non-primary articles and from the pre-identified guidance documents and compiled into tables corresponding to each of the 10 review questions. The research team identified best practices from these data via iterative thematic analysis. This involved first identifying and articulating best practices within the guidance documents and then adding to the list of best practices or refining the articulation of best practices based on the information from each successive article. When discrepancies arose they were either noted in the articulation, or in a few cases when one source was clearly more rigorously evidence-based than others, the information from the more rigorous source was included.

FINDINGS

Literature Identified

A total of 4,842 articles were identified through the five Scopus and five PubMed searches (see Annex X for a breakdown by search). The Global Index Medicus search identified 457 articles. After removing duplicate articles identified by more than one search, the total number of unique potentially relevant articles retrieved was 3,541. After title and abstract screening, 147 articles were considered potentially relevant. Full-text screening resulted in removal of 99, and yielded 48 articles for inclusion in the review, in addition to the nine guidance documents identified by the WHO team (see Figure 1).

Figure 1: Diagram of article selection process



Best Practices Identified

Question 1

What are good clinical practices for conducting a physical examination and forensic investigation in supposed cases of child maltreatment in order to minimize harms/trauma to the child or adolescent who has or may have been exposed to physical abuse or neglect?

Seven of the pre-identified guidance documents informed the best practices described below. The information contained in the guidance documents was very comprehensive, however, two additional expert guidance articles were identified via the literature review that provided perspectives from India and Korea. The WHO Clinical Guidelines for Responding to Children and Adolescents Who Have Been Sexually Abused also describe best practices under good practice statement 3 (GP3) that align closely with those mentioned below.

Table 3. Best practices for Question 1

Best practices	Articulation	Primary sources
<i>Best practices for health workers</i>		

1. Provide timely care	Health workers should provide timely examination both for forensic investigation and to meet the health needs of the child or adolescent.	NICE, 2017 Scott et al., 2017
2. Approach exam as an initial step towards healing	Health workers should approach the exam as an opportunity to assess the child's health holistically and as an initial step towards healing. Particularly in cases of sexual assault, the exam can be an important opportunity to provide reassurance to the child or adolescent.	Scott et al., 2017
3. Maximize the child's control and participation in decision-making	As much as possible, health workers should respect the child's autonomy and give the child control over the exam, including the right to refuse to be examined. Health workers should involve the child in decision-making as much as possible given age and developmental stage and should treat him or her as a partner in the exam. This includes finding out the child's views and wishes. If possible, a child should be allowed to choose the sex of the examiner. A small child can be held by a parent while examined, and a child of any age should be allowed to have a trusted adult in the room. The child should be allowed to choose where the exam is conducted (e.g. on a chair, on a caregiver's lap, on a bed, etc.)	Aggarwal et al., 2009 NICE, 2017 Scott et al., 2017 WHO, 2015
4. Obtain consent	Health workers should obtain consent before conducting the exam. If the child or caregiver does not agree to the examination, the health worker should seek legal advice in accordance with local laws and protocols, unless the need for treatment is immediate. Health workers should keep in mind that the caregiver may be the perpetrator and therefore may be reluctant to provide consent.	NICE, 2017
5. Directly observe and clearly communicate with child	Health workers should base their assessment on direct observations of the child and should speak to the child directly if possible, rather than to caregivers. They should clearly communicate to the child what the exam will entail (including timeframe), using plain language and explaining any technical terms. In particular, health workers should clearly explain how they will touch the child. Lack of such information can contribute to elevated fear and distress or create unrealistic expectations for the child. In addition, all children are more likely to feel valued when the health worker relates to them in a personal way, such as through speaking with them about "everyday" topics.	Lee, 2008 NICE, 2017 Scott et al., 2017
6. Demonstrate trustworthiness	Health workers should always follow through on what they say they are going to do. If this is not possible, they should explain the situation to the child and/or caregiver and offer alternatives as soon as possible.	NICE, 2017

7. Demonstrate sensitivity	Health workers should think through every aspect of their interaction with the child, offer emotional support, and be sensitive to the fact that the experience might be difficult for the child.	Aggarwal et al., 2009 NICE, 2017
8. Address follow-up as needed	Health workers should give the child and/or caregiver clear information on what to expect after the exam, and instructions on any follow-up actions that are recommended. For example, health workers should address what to do if any injuries become more visible over time. In cases of sexual abuse, follow-up should include prophylaxis and/or treatment for HIV and other STIs.	Scott et al., 2017 WHO, 2015
9. In cases of sexual abuse, follow good practices specified in WHO clinical guidelines	Best practices specific to conducting physical examinations in cases of sexual abuse are described under GP3. These include using examination instruments and positions that minimize physical discomfort and psychological distress, basing collection of forensic evidence on the account of abuse and what can be feasibly collected and analysed, not conducting virginity testing, and not routinely using speculums, anoscopes and digital or bimanual examinations of the vagina or rectum of pre-pubertal children unless medically indicated.	Scott et al., 2017 WHO, 2017
<i>Best practices for health facilities</i>		
10. Ensure a safe, private, properly resourced location for exams	Exams should be carried out in a safe, private, quiet, accessible, and clean location. The room should contain an examination table and light (preferably fixed) with access to a toilet or latrine. Clinical guidelines and protocols should be made available in the room, for use by health workers.	WHO, 2009 WHO, 2015
11. Provide adequate training and support to staff	Health workers who carry out exams require extensive training, ongoing support, and provision of adequate resources to provide high-quality examinations.	Aggarwal et al., 2009 Scott et al., 2017

Equity, Feasibility, and Contextual Considerations

Health workers may lack confidence in communicating with disabled children, but should make every effort to communicate with them directly even if an interpreter is used, such as through smiling at and communicating non-verbally with a deaf child (NICE, 2017).

In certain settings, appropriate instruments may not be available to health workers due to lack of resources. Additionally, although well-resourced “one-stop” centers with well-trained staff have been established in some low-income settings, the vast majority of health facilities in such areas lack the means to ensure staff receive such training or to ensure the availability of optimal exam locations (Molyneux et al., 2013).

Question 2

What are best practices for seeking informed consent and assent taking into account the cognitive maturity of the child?

Three pre-identified guidance documents and two expert guidance articles (one from the UK and one from South Africa) identified via the literature reviews informed the best practices identified for question two. No primary research articles were found that addressed this question.

Table 4. Best practices for Question 2

Best practices	Articulation	Primary sources
1. Obtain consent from the child or adolescent if they are above the legal age of consent.	Health workers should obtain consent directly from adolescents who are above the legal age of consent (in accordance with local laws), without requiring consent from a caregiver. In some settings, if a health worker judges a child or adolescent under the legal age of consent to have sufficient intelligence and understanding to consent to, or refuse to consent to, medical treatment, that child is considered to be Gillick competent. In those settings, a Gillick competent child or adolescent may also give consent without consent from a caregiver being required. Decisions on child competence should be child-centered and aimed at protecting children's rights. Consent is a process and may require multiple discussions and conversations. Information can be given to the child through a variety of methods (e.g. drawing, books, toys).	de Zulueta, 2010 NICE, 2017
2. Obtain assent from a child who is below the legal age of consent.	Health workers should obtain assent from a child who is developmentally able to understand but not able to give consent, before conducting an exam or speaking to him or her. In assessing a child's understanding and decision-making ability, the health worker should not make the child's conclusion the main focus, but rather how he or she reasons in reaching that conclusion. Decision-making capacity is based on the child's capacity to understand, keep in mind, and evaluate his or her decision. Health workers should consider a shared decision-making model in which child can take part in decision-making even if not Gillick competent.	de Zulueta, 2010 IRC, 2012 van Bogaert, 2013 WHO, 2015
3. Obtain consent from caregiver when a child cannot provide consent	In the case of a child who is not able to give consent, the health workers should obtain consent from the caregiver. The caregiver and health worker should reach a mutual decision regarding child treatment and a safety plan, and if there is a disagreement, should seek resolution through a conversational, non-adversarial approach. If the health worker feels it is imperative to go against the caretaker's wishes for the child's safety, the health worker should consult with supervisors before making this decision. In considering the child's best interest, the health worker should	de Zulueta, 2010 IRC, 2012

	consider the child's preferences and ability to participate in decision-making, the preference of caretaker(s) including their religious and cultural beliefs, the child's needs, and the risk of harm to the child due to delayed or no intervention.	
4. Explain consent process, including confidentiality, to child and caregiver	Health workers should explain confidentiality, including what information the health worker might need to share, when, and with whom. Information may be shared without explicit permission if the child is at risk of harm (including self-harm) or plans to harm someone else, and the health worker should explain this to the child or caregiver.	NICE, 2017 WHO, 2009
5. Inform child and/or caregiver of mandatory reporting requirements	As part of the informed consent process, health workers must disclose any mandatory reporting requirements to the child and/or caregiver and explain that if the child's safety is at risk, there are limits to confidentiality. The health worker must clearly explain what information is being reported to whom, the consequences of this reporting, and what the child and family's rights are in the process. The health worker should explain that the child and family cannot decide whether this report is made, but can participate in decision-making regarding how the reporting can be done in the safest and most confidential way.	IRC, 2012 WHO, 2015
6. In case of sexual abuse, obtain consent for each procedure individually	In the case of sexual abuse, health workers should inform the child or adolescent, and/or caregiver, of each step of the examination (e.g. physical exam, collection of specimens, photography). The child or caregiver can then make an informed decision about and give consent to each step. The health worker should additionally make sure the child or caregiver understands that he or she can consent to some parts of the exam and not others and can withdraw consent at any time.	WHO, 2015
7. Document consent	Health workers should ensure the consent-giver documents consent with a signature or fingerprint.	WHO, 2015

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The question of when a child or adolescent is able to give informed consent is complex and subjective. It should be aligned with local laws regarding legal age of consent, however in many settings it ultimately relies on health worker judgment. One expert has argued that children are often more competent to give consent than assumed, and that the onus should be on the health worker to prove that the child is not competent rather than on the child to prove competence (de Zulueta, 2010). For a child who is deemed not fully capable to give consent, the health worker should attempt to maximize the child's inclusion in the decision-making process through seeking the child's assent (de Zulueta, 2010; WHO, 2015). Assent empowers children to the extent of their capabilities, and includes gaining the willingness of the child to accept care without deception or coercion (de Zulueta, 2010).

Although not explicitly addressed in the literature identified for review, hearing disabled children and children with cognitive disabilities will likely require additional considerations to ensure effective communication and comprehension during the consent process.

Question 3

What are child and adolescent-friendly, gender-sensitive, and trauma-informed principles and practices to obtain medical history and conduct forensic interviewing?

Six of the pre-identified guidance documents provided comprehensive information that informed the best practices identified below. This information was supplemented with an expert guidance document from India, and a primary research article examining needs specific to hearing disabled children—both identified via the literature review. The WHO Clinical Guidelines for Responding to Children and Adolescents Who Have Been Sexually Abused also describe best practices under good practice statement 2 (GP2) that align closely with those mentioned below.

Table 5. Key themes for Question 3

Best practices	Articulation	Primary sources
<i>Best practices for health workers or interviewers in conducting medical history or forensic interview</i>		
1. Minimize the need for the child to repeatedly provide their medical history	Health workers should minimize the number of times that a child or adolescent needs to tell their story of abuse or provide their medical history, as this can be re-traumatizing.	Scott, 2017 WHO, 2017
2. Address any urgent medical or safety issues before starting interview	The interviewer may need to identify and address urgent medical or safety issues before the child or adolescent feels comfortable disclosing information. The interviewer should verify that the child is comfortable with the environment in which the interview is being held.	Aggarwal et al., 2009 IRC, 2012 NICE, 2017 Sidebotham et al., 2007
3. Maximize the child's control and participation in decision-making	The child or adolescent should be involved in decision-making to the fullest extent possible depending on age and developmental stage, which includes keeping him or her involved and informed at every stage of assessment and decision-making. The child should be allowed to set the pace of the interview and engage in activities during the interview which may be beneficial, such as drawing. The interviewer should not force the child to speak or answer questions, should give the child opportunities to stop the conversation or leave the room, and should follow up if this occurs. The interviewer should emphasize that the child has a right to talk about any abuse or neglect and to seek help.	IRC, 2012 NICE, 2017 WHO, 2015
4. Allow the child to choose who	The child should be given the option of having a trusted adult in the room. No one should be present in the room whom the child does not trust, and anyone suspected of abuse should not be	IRC, 2012

should be in the room	present. If the child hesitates to speak in front of a caregiver or another adult who is in the room, that person should be removed from the room. When interviewing girls, only female interviewers and interpreters should be present. Boys should be given a choice of whether they prefer male or female interviewers.	
5. Clearly explain the interview process, including confidentiality	The interviewer should clearly explain to the child what will happen in the interview and what the interviewer's role is in conducting the interview. The interviewer should not create false expectations, such as regarding the child's security. The interviewer should also explain confidentiality, including when he or she might need to share specific information about the child, and with whom.	NICE, 2017 WHO, 2015
6. Demonstrate sensitivity and empathy	The interviewer should demonstrate sensitivity and empathy, such as through thinking through every aspect of his or her interaction with the child, offering emotional support, being gender-sensitive, and demonstrating sensitivity to the fact that the experience might be difficult for the child, and offering reassurance that the child is not at fault. The interviewer should respect cultural, religious, and ethnic sensitivities, and be aware that the child may feel embarrassment and fear when relating his or her experiences. Even if professional standards of confidentiality are met, the child may feel that disclosing abuse is a "public event". Non-verbal as well as verbal communication is important, and the interviewer should take care to communicate interest in the child and not to inadvertently communicate fear or disapproval. The interviewer should also monitor the child's non-verbal communication and suspend or end the interview if the child appears distressed.	Aggarwal, 2009 Gilligan & Akhtar, 2006 IRC, 2012 NICE, 2017 WHO, 2009 WHO, 2015
7. Communicate equality through body language	The interviewer should sit at the same height as the child and keep his or her eyes aligned with the child to communicate a sense of equality and respect.	IRC, 2012
8. Ask clear questions and practice good listening	The interviewer should ask clear and open-ended questions, avoid repetition, listen actively, and validate the child. The interviewer should additionally check for understanding and explain questions as much as needed, and only repeat questions if the child has not understood. Children prefer to only have to provide information once, and may be distressed by repeated questioning. In addition, children may experience poor recollection. The interviewer should seek to minimize the number of questions asked, but should also ask clear questions about abuse, being persistent if necessary. Any presenting signs of abuse and neglect should be explored in a non-leading way. Abused or neglected adolescents may display anger or other	Aggarwal et al., 2009 Jones et al., 2016 NICE, 2017 Scott et al., 2017 Sidebotham et al., 2007

	challenging behavior, and the interviewer should interpret these as signs of maltreatment rather than the adolescent being difficult or non-cooperative.	
9. Use appropriate language and terminology, and provide a trained interpreter if necessary	The interview should be conducted in the child's language of preference. If an interpreter is required, the interpreter should be well-trained in forensic interviewing, and the interviewer should continue to communicate care using non-verbal techniques such as smiling. The child may feel more comfortable if the interpreter or interviewer is from the child's community. Using caregivers as interpreters should be avoided, as this compromises the confidentiality of the interview and could also allow caregivers to conceal abuse. Deaf children should always be provided with registered interpreters.	IRC, 2012 Jones et al., 2017 Scott et al., 2017 WHO, 2015
10. Build rapport before asking sensitive questions	The interviewer can build rapport with the child prior to asking sensitive questions by asking open-ended questions about the child, neutral events, or the child's viewpoints. Building rapport is particularly important for adolescents, and may increase the likelihood that a child or adolescent will report abuse.	Aggarwal et al., 2009 Hershkowitz et al., 2014 IRC, 2012 NICE, 2017 Scott et al., 2017
11. Tailor interview to child's age and development	The interviewer should tailor the interview length to the child's age and development (e.g. shorter for a younger or developmentally delayed child). Communication may be facilitated by using a range of methods that are appropriate to the child's age, development stage, and communication needs, such as communication aids, drawing, books, and activities. Younger children may not be able to accurately describe abuse, especially sexual abuse, and in such cases non-offending caregivers and other adults should be asked instead.	Aggarwal et al., 2009 IRC, 2012 NICE, 2017
12. Give child options in responding to questions	The child should be allowed to answer questions on his or her own timetable and when he or she is comfortable, and should not be pushed to answer. Children should also be allowed to answer questions in non-verbal ways, such as by writing or drawing.	IRC, 2012 Scott et al., 2017
13. Communicate non-judgment and that child is believed	The interviewer should take seriously any disclosure of neglect or abuse, affirm the child for making the disclosure, listen in a non-judgmental way, never communicate skepticism or disbelief, and never comment on whether sexual contact was consensual. Interviewers should particularly resist blaming survivors of sexual abuse for the abuse, and should recognize that lack of physical evidence of sexual abuse is common and does not in any way negate the possibility that abuse occurred. Similarly, sexually abused children and adolescents often do not	Aggarwal et al., 2009 Scott et al., 2017 WHO, 2009 WHO, 2015

	display strong emotions during forensic interviews, so this should not be taken as a sign that abuse did not occur.	
<i>Best practices for forensic interviews conducted at health facility</i>		
14. Consider appropriateness of forensic interview	Health workers should focus only on details relevant to the provision of medical care. If a child cannot be referred to appropriate services, weigh costs and benefits of forensic interview and whether it is justified given the circumstances. If possible, information about the abuser(s) should be gathered by trained investigators for legal purposes.	WHO, 2015
15. Ensure a safe, private, child-friendly space for interviews	Interviews should be carried out in a room that is safe, private, quiet, and child-friendly. Resources should be allocated to furnish the space with child-friendly materials like toys and comfortable seating.	IRC, 2012 Scott et al., 2017
16. Train interviewers and provide interview guides	Interviewers should have specialized training and experience in working with children before carrying out forensic interviews, and should be provided with interview guides to improve implementation of interviews. Use of a structured interview protocol may improve interview quality.	Hershkowitz et al., 2007 Scott et al., 2017 WHO, 2015
17. Provide trained same-sex interviewer and interpreter, if necessary	The facility should ensure that a trained same-sex interviewer and interpreter are available, if requested by the child.	WHO, 2015

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Special considerations are required for disabled children, who are more likely to experience all forms of abuse and neglect (NICE, 2017). For disabled children, signs of abuse or neglect may be “masked” by characteristics of their disability (NICE, 2017). They may also have many caretakers, which can increase the chance of maltreatment (NICE, 2017). Children with visual or hearing impairment, learning disabilities, or other disabilities may also pose particular communication challenges. Health facilities should ensure that interpreters are available (for example, for deaf children) and that health workers can access a specialist with expertise regarding disabled children (NICE, 2017).

Lack of trained interviewers and lack of resources to provide private and child-friendly interview spaces may post major barriers to the implementation of these best practices in major settings. Additionally, as noted above, if appropriate legal and social services for referral are lacking or insufficient, it may not be appropriate to conduct a forensic interview (WHO, 2015).

Question 4

What are the good practices for documentation of the medical history, physical and forensic examination findings?

Seven of the pre-identified guidance documents informed the best practices for this question. One expert guidance article (from India) and one primary research article (from the US) also provided information relevant to this question.

Table 6. Best practices for Question 4

Best practices	Articulation	Primary sources
<i>Best practices for health workers</i>		
1. Record personal information and details of maltreatment	Health workers should record personal information for the child, adolescent, and/or caregivers, including name, address, telephone number, email address, and how the child or caregiver wishes to be contacted. This information should ideally be supported by official identification papers. Health workers should additionally document relevant details of maltreatment include when (time and date) and where the maltreatment occurred, number of incidents, whether there were witnesses, and whether any photographs or other recordings were made.	Aggarwal et al., 2009 WHO, 2015
2. Record child's statements accurately and comprehensively	Health workers should record the child's statements accurately, comprehensively, and preferably verbatim, and without interpretation, in order to support legal action and prevent false allegations. Records may be captured in handwritten or typed notes or audio recorded using a phone or computer, and should be signed and dated by the health worker. Health workers should record the language of interview and whether an interpreter was used.	Aggarwal et al., 2009 Scott et al., 2017 WHO, 2015 WHO, 2009
3. Record details of physical exam and any treatment offered	Health workers should describe the child's symptoms, physical evidence, presence of old or new injuries, and likely mechanism of injury, in detailed but plain language (i.e. the description should be comprehensible to non-medical professional). Health workers should also document if treatment was offered or initiated, as well as any negative findings or parts of the exam that were not carried out.	Aggarwal et al., 2009 Scott et al., 2017 WHO, 2015
4. Photograph child only with permission, provide explanation of use, and protect identity of child	Documenting abuse with photographs can be valuable for legal purposes, and photographs can also allow other service providers to review the evidence without having to re-examine the child. However, children, adolescents, and caregivers may have concerns regarding having photographs taken and who will view them. Health workers should take photographs only after explaining how they will be used, and after the child, adolescent and/or caregiver has given permission (with the understanding	Scott et al., 2017 WHO, 2015

	that the child, adolescent, and/or caregiver would retrain control over these photos). Particular care should be taken in deciding to photograph breasts and genitalia. Photographs should not allow for direct identification of child; a confidential coding system can be used to allow authorized staff to identify the child. Records should note when photograph was taken.	
5. Label all specimens and specimen transfer	Health workers should carefully label all specimens and document any transfer of specimens (chain of custody), including what, to whom, and when transfer occurred.	WHO, 2015
6. Think critically about cases	Health workers should think critically and analytically about cases and should not let protocols or recording systems (paper or electronic) substitute for this analysis.	NICE, 2017
7. Follow established reporting format	Health workers should follow the guidelines established by the health facility for documentation of abuse or neglect.	Aggarwal et al., 2009 Scott et al., 2017
8. Follow national laws including mandatory reporting	Health workers should be aware of and follow national laws and guidelines, including mandatory reporting requirements. However, the health worker should report only the minimal information required by law within the specified time frame, and should document the information reported.	Aggarwal et al., 2009 IRC, 2012 WHO, 2015
9. Ensure that documentation is adequate for pursuit of justice	In documenting neglect or abuse, the health worker should consider what documentation is needed for the legal proceedings necessary to pursue justice for the child, even if the child (or the caregiver) does not want to pursue prosecution of the abuser.	Scott et al., 2017
10. Share reports with child or adolescent as appropriate	Health workers should share reports with the child in a way that is appropriate to his or her age and understanding and in keeping with his or her preferences, recognizing that the child has the right to refuse to review the report. This could include sharing with the child a written record of the interview and verifying that he or she agrees with the content and feels that his or her words are accurately represented, with both the health worker and child 'co-signing' the record to denote agreement with the contents.	NICE, 2017
11. Preserve confidentiality	Health workers should protect the confidentiality of how information is used, shared, and stored. Health workers should not report any personal details about the child that could be used to identify him or her in any form of surveillance or monitoring.	IRC, 2012 WHO, 2009 WHO, 2015
<i>Best practices for health facilities</i>		
12. Employ a structured protocol and	Having a structured format and protocol for documentation can improve the quality of documentation of the interview, physical exam, and forensic findings. This can in turn reduce the need for	Draus, 2017 Scott et al., 2017

provide ongoing training and supervision of staff	repeated examination. Staff should receive ongoing training and education regarding protocol, and continuous supervision in order to ensure correct documentation. Ensuring appropriate staff training and correct documentation is a particular matter of equity at health facilities accessed by the poor and marginalized.	
13. Keep records safe and confidential	Records containing documentation of abuse should be kept in a safe, confidential environment. Records should be accessible to professionals involved in the case, but not to the child's family members or alleged abuser.	IRC, 2012 WHO, 2009

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Policies governing response to child maltreatment differ across countries and can generally be classified as either a child and family welfare approach or a child-safety approach (Gilbert et al., 2009). Depending upon the approach taken, laws and protocols regarding documentation will differ substantially.

Question 5

What are best practices in assessing the safety of and developing a safety plan for children when child maltreatment is suspected and their non-offending caregivers?

Six pre-identified guidance documents and eight articles identified via the literature review informed the best practices informed below. Of the eight articles identified, one was an expert guidance article from India, and seven reported primary research. The primary research articles described studies from Oman (1), India (1), Hong Kong (1), Japan (1), US (2), and the UK (1).

Table 7. Best practices for Question 5

Best practices	Articulation	Primary sources
<i>Best practices for health workers</i>		
1. Conduct a holistic assessment which carefully considers all evidence	Health workers should conduct a holistic assessment of the child or adolescent's physical and emotional well-being and health care needs and should carefully consider all evidence, considering the negative consequences on the child of a wrong diagnosis. Health workers should never consider a child's account not credible because of the child's history or family background, factors such as the child or adolescent having a criminal record, or because of resistance to the idea that such abuse could happen.	Aggarwal et al., 2009 NICE, 2017 Scott et al., 2017
2. Assess risk of recurrence of maltreatment	Health workers should consider if maltreatment is likely to recur, and when. The typical timeline for recurrence is within a few days of initial incident. Health workers should consider the following questions in carrying out an assessment of the child's safety: ○ Is the child safe from further maltreatment? ○ Can the perpetrator easily access the child? ○ Can caregiver(s) protect the child, and will they?	IRC, 2012

	○ Does the child feel safe to return home? ○ Is the child fearful of any caregivers or family members?	
3. Assess for co-occurrence of other types of maltreatment	Health workers should be aware of the possibility of other types of maltreatment, particularly when sexual abuse has been perpetrated by a close male relative of the child. In such a case, physical abuse and/or serious neglect may also be occurring.	Aggarwal et al., 2009 IRC, 2012
4. Assess suicide risk, especially for adolescents	If the child or adolescent is expressing suicidal thoughts, the health worker should assess if the child or adolescent has the intention to act, and provide care and protection accordingly. Adolescents are especially at risk of suicide.	IRC, 2012
5. Assess whether other children in household are maltreated	Health workers should be alert to the high probability that other children in the household are also experiencing maltreatment, and evaluate these children. The extent of evaluation should be determined based on the type of maltreatment suffered by the index child, as well as other considerations such as the ages of the other children, with very young children being more susceptible to abuse.	Campbell et al., 2006
6. Differentiate between “child in need” and “child in need of protection”	In developing a safety plan, the health worker must differentiate between a “child in need” and a “child in need of protection.” For example, operating under “child in need” procedures when the child is actually in need of protection can result in a lack of attention to issues of protection.	NICE, 2017
7. Involve other agencies, especially if child’s safety is immediately threatened	If a health worker suspects that a child’s safety is immediately threatened, the health worker should take decisive action including working with other agencies such as police or protection agencies. This should be done immediately and before completing other steps such as mandatory reporting. Referral to other agencies is also indicated in cases of emotional abuse and neglect, which do not result in a crisis or in a need for medical care but are nevertheless abusive.	Aggarwal et al., 2009 Davies and Ward, 2012 IRC, 2012 Kobayashi, 2001 Sidebotham et al., 2007
8. Involve child in safety planning as appropriate for age and development, and in a safe space	The child should receive a clear explanation of the role of professionals in the safeguarding process. Children should be given the opportunity to express their ideas and opinions regarding their own safety plans, to the extent possible given age and development. The child’s preferences should be accommodated as much as possible, and if they cannot be honored, the health worker should explain why. The child should also be provided with a safe space to discuss the safety plan, such as at home or in a private location, and should be allowed to request the presence of a caregiver for this discussion. The child should be shown documentation of the safety plan and given an opportunity to give feedback.	IRC, 2012 NICE, 2017

9. Involve non-offending caregivers in safety planning	Caregivers should be involved in safety planning as much as possible, unless they are known or suspected to be perpetrators of neglect or abuse. The health worker should honestly communicate with the family regarding concerns of abuse and neglect, but should take care to not breach confidentiality and to not share information which might place the child at risk of further harm.	Aggarwal et al., 2009 Al-Saadoon et al., 2012 Chung et al., 2002 IRC, 2012 NICE, 2017
10. Prioritize child's interests over caregiver's interests	Safety planning should prioritize the child's needs and rights over the caregiver's needs and rights. While the child's interests should be the focus of assessment, health workers should also address both the strengths and weaknesses of the caregivers (with equal attention to male and female caregivers), and acknowledge that parenting can change and improve over time. Safety plans may also focus on the family as a unit, in order to support both parents and children.	Davies and Ward, 2012 NICE, 2017 WHO, 2009
11. Provide referrals and follow up	In the case of referrals to other agencies or services, health workers should follow up the referral, not relinquish responsibility for the child, and ensure action takes place. Health workers should provide referrals even if they doubt the effectiveness of those services.	Davies and Ward, 2012 NICE, 2017
12. Document safety plan	Health workers should develop and document a safety plan which includes what services and support will be provided to the child and family.	IRC, 2012 NICE, 2017
13. Agree with child or family on follow-up contact including timeline	Health workers should agree with the child, adolescent, and/or caregivers how and when future contact will occur, bearing in mind issues such as whether the perpetrator has access to the child or adolescent's phone. Health workers should agree with the child or adolescent on what will happen if the child or adolescent cannot be reached, such as who will be a designated emergency contact.	IRC, 2012 NICE, 2017
<i>Best practices for health facilities</i>		
14. Consider special training for a core group of staff	A core group of staff might be specially trained to develop safety plans and ensure continuity of care, including timely follow-up.	WHO, 2009
15. Provide specialist to assist if child is disabled	In the case of a disabled child, a specialist with knowledge about that specific impairment is needed to provide an assessment and develop a safety plan.	NICE, 2017

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Safety planning involves difficult decisions and requires distinguishing between a “child in need” and a “child in need of protection”, meaning that not every child in need is in need of an intervention or protection. Conversely, health workers may fail to recognize the need for protection if they are erroneously operating under “child in need” processes (Vincent and Petch, 2012). Health workers must also evaluate the presence and severity of different types of abuse, including being alert to the presence of other types of neglect or abuse beyond the ones initially recognized.

Whereas inter-agency cooperation in safety planning is always advised when possible, the exact protocol for safety planning and protection of maltreated children and adolescents will vary according to the approach taken by national child maltreatment response systems (Gilbert et al., 2009). It will also vary according to the social, legal, and police services available, and the quality of those services. In many low-resource settings such services may be too weak for effective response (Molyneux et al., 2013; Child, 2014). In some settings there may be no legal mechanism for removing children from their family, even if deemed unsafe; in such situations careful follow-up by health workers may be particularly important (Al-Saadoon, 2012).

The child or adolescent (and caregiver(s), if appropriate), should be involved in safety planning as much as possible, and health workers must use their judgment to decide when a child is developmentally able to participate. Disabled children have special needs are at greater risk of recurrent or persistent abuse and neglect, and a specialist with expertise regarding the child’s impairment should be involved in safety planning if at all possible.

Assessing and planning for child safety when neglect is suspected may be complex. Neglect is less “clear cut” than other forms of abuse and may be masked by children’s resilience (NICE, 2017). In addition, what constitutes neglect is not clearly defined, particularly for adolescents (Davies and Ward. 2012). In responding to neglect, health workers should consider that material poverty may produce conditions which are hard to distinguish from neglect (NICE, 2017). Laird (2014) asserts that, “the notions of child neglect articulated in the domestic laws of many sub-Saharan nations derive from essentially Anglo-centric preconceptions of child protection and are particularly misleading given the impoverished circumstances of African populations (p.2).” Health workers should evaluate how caregivers are meeting the child’s needs for food, clothing and shelter, compared to other caregivers in similar circumstances (NICE, 2017)

Question 6

What are best practices for interacting with caregivers when child maltreatment is suspected, taking into account that caregivers might be perpetrators of abuse or might be aware of the abuse?

Three pre-identified guidance documents and six articles identified via literature review informed the best practices described for question six. Of the article from the literature review, two were expert guidance articles from India and Korea. The other four were primary research articles from Jordan (1), Brazil (1), Hong Kong (1), and the UK (1).

Table 8. Best practices for Question 6

Best practices	Articulation	Primary sources
1. Collect and analyze information from significant non-abusing family members, for use in assessment	Health workers should involve in the assessment, as appropriate, significant adults, children and young people in the family, while still maintaining focus on the maltreated child or adolescent. Health workers should take time to understand family relationships and dynamics as well as the views and wishes of various family members. Adults who have perpetrated abuse should not be involved in the assessment, especially if this would alert them that their behavior is under scrutiny, as this could lead to negative consequences for the child or obstruct evidence-gathering needed for a criminal case.	Aggarwal et al., 2009 Lee, 2008 NICE, 2017 Woodman et al., 2013
2. Build good working relationships with caregivers and encourage engagement and participation, but prioritize child's needs	Health workers should cultivate a good working relationship with caregivers through active listening, being open and honest, working in a way that encourages trust while maintaining professional boundaries, and being reliable and available as promised. Health workers should encourage the active engagement and participation of the caregivers, but should keep in mind that the caregiver may be the perpetrator or may have allowed the abuse and should prioritize the child's needs. Providers should speak directly to the child rather than to the caregivers and should remove anyone from the room who the child seems to hesitate in front of. Providers should explain to caregivers that the child's confidentiality and control are of first importance.	Aggarwal et al., 2009 Chung et al., 2002 NICE, 2017
3. Be careful of close personal relationships with caregivers that could cause a failure to see evidence of maltreatment	Some health workers may find themselves having long-term relationships with families and caregivers who have complex medical and social needs, including child maltreatment. The health worker should be careful that a trusting and empathetic relationship with a caregiver does not lead to "disguised compliance" on the part of the caregiver, and the health worker failing to focus on the child's needs or perceive maltreatment.	Woodman et al., 2013
4. Be sensitive regarding stress on caregivers of assessment process	Caregivers may feel significant stress during the assessment process, may feel daunted and unable to present their perspective, and may struggle to understand information if not presented in clear, non-technical terms. Health workers should be sensitive to this stress on caregivers and provide accessible information that caregivers can easily understand.	Ghaffar et al., 2012 (in NICE, 2017)
5. Clearly explain issues, concerns and legal context	Health workers should clearly explain the issues and concerns which have led to their involvement, as well as the legal context in which their interaction with the family is taking place.	NICE, 2017

6. Avoid blame and identify what caregivers are doing well	While health workers do have to exercise their professional judgment, they should never make caregivers feel judged or blamed for their situation even if the caregivers are to blame for the abuse or neglect. Health workers should identify what the caregivers are doing well and build on that, giving equal attention to male and female caregivers.	Abu Moghli, 2005 Amaral et al., 2013 NICE, 2017
7. Avoid stigmatizing caregivers for behaviors such as substance misuse	Health worker should avoid stigmatizing attitudes towards caregivers, particularly for behaviors such as substance misuse, domestic abuse, or mental health issues. Caregivers might conceal such behaviors out of fear of consequences such as the removal of the child.	Ghaffar et al., 2012 (in NICE, 2017)
8. Give caregivers an opportunity to speak about maltreatment	Health workers should give caregivers opportunities to speak openly about the child's abuse or neglect, without the child present. The caregiver should not have to give this information repeatedly.	Aggarwal et al., 2009 IRC, 2012
9. Discuss interventions with caregivers, including caregivers' options and rights	Health worker should ensure that the caregivers understand the potential health consequences of the abuse or neglect, the significance and possible side-effects of any interventions, and what the options and rights he or she has in consenting to or refusing treatment for the child. Caregivers should be given the opportunity to give feedback on interventions offered to the child, including expressing their views and wishes and any worries they have about interventions.	Aggarwal et al., 2009 NICE, 2017 WHO, 2015
10. Maintain confidentiality	While health workers should honestly communicate concerns about maltreatment to caregivers, health workers should carefully consider what information should be shared with whom in order to avoid inappropriately sharing confidential information, which could place the child at risk of further harm.	Gilligan & Akhtar, 2006 (in NICE, 2017) NICE, 2017

Equity, Feasibility, and Context Considerations

In small and tightly knit communities, confidentiality may be quite difficult to ensure. Disclosure of sexual abuse may be of particular concern to caregivers (and children) due to potential stigma. Health workers should recognize that even when professional standards of confidentiality are met, caregivers may feel that discussion of abuse or neglect is a “public event” (Gilligan & Akhtar, 2006 in: NICE, 2017).

Question 7

What are best practices for ensuring the safety of health workers who are dealing with suspected cases of child maltreatment?

Five pre-identified guidance documents informed the best practices described below. Additionally, six primary research articles relevant to question seven were identified via the literature review. These articles describe studies from Brazil (3), Latvia (1), US (1), and the UK (1).

Table 9. Best practices for Question 7

Best practices	Articulation	Primary sources
<i>Best practices for health workers</i>		
1. Discuss care decisions with supervisor	Health workers should share and discuss the care plan and care decisions with a supervisor or colleague.	IRC, 2012 Sidebotham et al., 2007
2. Do not contact perpetrators	Health workers should not contact the disclosed perpetrator of abuse or neglect, even if requested to do so by the child or caregivers, as this could jeopardize the health worker's safety.	WHO, 2009
<i>Best practice for health facilities</i>		
3. Provide support for health workers' emotional needs	Health facilities should provide support for staff to handle the difficult emotions, burn-out, and desensitization that may result from managing cases of abuse and neglect. Such support may be provided through reflective practice and locally feasible and culturally appropriate strategies which allow staff to "work through" difficult emotions. More experienced staff can be encouraged to model positive coping and initiate conversations with less experienced staff. Staff who appear in court and conduct forensic interviewing may particularly require emotional support.	Amaral et al., 2013 Kalnins, 2002 Lewington et al., 2013 NICE, 2017 Scott et al., 2017
4. Provide informational and procedural support	Health facilities should provide informational and procedural support to staff involved in child protection procedures, particularly to those providing testimony to police or in court. Health workers, especially those that are more junior, may lack knowledge, feel intimidated by the child protection process, feel stress from not knowing what to expect, and may fear making mistakes which could result in negative repercussions to them or the child. These concerns can be allayed by shared decision-making, and by more experienced staff members providing support based in their experience.	Amaral et al., 2013 Rowse, 2009
5. Provide protection and support in response to staff concerns of	Health facilities should take seriously staff concerns regarding threats of physical violence, retribution, and/or legal action by families who are under investigation for suspected child maltreatment. Health facilities should inform staff of legal protections and consider measures to keep secret the identity of staff members who report suspected cases of abuse, and protect them from physical violence.	Bannwart & de Faria, 2011 Leite et al., 2016

violence or legal action		

Equity, Feasibility, and Context Considerations

In many settings, health workers may be well known by and live in the same community as the families that they work with professionally. This can exacerbate health worker concerns about reprisal if they report a suspected case of child maltreatment (Leite, 2016).

Question 8

How can uptake of services for child maltreatment be facilitated?

Four pre-identified guidance documents and 10 articles identified via the literature review informed the best practices identified for question eight. Relevant articles identified through the literature review included expert guidance articles regarding child maltreatment response in Hong Kong and Kenya, and primary research articles from the following countries: Saudi Arabia (1), Israel (1), Uganda (1), Palestine (1), Latvia (1), India (1), the UK (1), and the US (1). The WHO Clinical Guidelines for Responding to Children and Adolescents Who Have Been Sexually Abused also describe best practices under good practice statement 8 (GP8) that align closely with those mentioned below.

Table 10. Best practices for Question 8

Key themes	Articulation	Primary sources
<i>Best practices for health workers</i>		
1. Inform patients about sexual abuse risk, indicators, and appropriate response	Open discussion of issues surrounding human sexuality may help to prevent child sexual abuse. Health workers have an opportunity during routine health care visits to inform children and adolescents in their care and their caregivers about normal sexuality, what constitutes sexual abuse, and what to do if sexual abuse occurs. Health workers should consider discussing with caregivers normal behaviours at different stages of sexual development, problematic behaviours that could indicate abuse, and where and how to report suspected or confirmed abuse.	Scott et al., 2017
2. Model consistency, sensitivity, and professionalism to patients and make safeguarding role clear	Health workers should model consistency, sensitivity, and professionalism to their patients. They should make clear their safeguarding role (including their ability to offer practical support), so that their patients perceive health workers positively and are more likely to disclose neglect or abuse in cases of maltreatment. Health workers should practice good communication skills with children and adolescents, such as speaking to them directly. Health workers should not express discomfort when discussing sexual behavior or communicate stigma or blame regarding sexual abuse.	NICE, 2017 Scott et al., 2017 WHO, 2015
3. When possible build trusting,	Health workers may have the opportunity to build trusting, long-term relationships with families, particularly in families with	Kalnins, 2002

long-term relationships with family	complex medical needs. Such relationships can encourage family members to discuss their situation more honestly, and can allow the health worker to more accurately assess children's well-being, coordinate information-sharing and interventions with other practitioners, link families to social and health services, and encourage families to seek help when needed.	Woodman et al., 2013
4. Be sensitive to cultural context and culture-specific perceptions of maltreatment	Health workers should be sensitive to cultural context when dealing with issues of abuse and neglect, including holding appropriate expectations of caregiver perceptions regarding what constitutes maltreatment, and what constitutes acceptable physical punishment. While health workers should not condone or excuse violence, being sensitive to caregiver perceptions will aid them in working with caregivers and families. Health workers should also be alert to their own cultural assumptions and not overlook or excuse child maltreatment (such as physical discipline) because they believe it is normative and acceptable.	Bridgewater, 2016 Child et al., 2014 Halileh, 2009
<i>Best practices for health facilities</i>		
5. Improve public awareness of signs, risk factors, and availability of services for child maltreatment	Health facilities can conduct outreach to improve public awareness of the signs, risk factors, and availability of services for child abuse and neglect. Methods of outreach might include community-based campaigns, outreach to caregivers, media campaigns, and raising awareness in schools. Such outreach can overcome barriers such as low levels of awareness among caregivers of signs and risks, and confusion about the appropriate place to initiate services in the case of confirmed or suspected cases of child abuse and neglect.	Scott et al., 2017 WHO, 2017 (GP8)
6. Offer comprehensive and specialized services	Offering comprehensive, specialized care (such as provision of HIV post-exposure prophylaxis) can increase access to services for children who have experienced abuse and neglect. Offering non-health services or referral to such services at a health center can also increase access to services for abused and neglected children.	Sabale et al., 2004 Scott et al., 2017 WHO, 2017 (GP8)
7. Make waiting room and services welcoming and child-friendly	Health facilities should consider how to make waiting rooms and services more welcoming and child-friendly and dedicate resources towards this purpose.	NICE, 2017
8. Make information available in written form	Health facilities should make information about abuse and neglect available in waiting rooms, including information about services available, location of services, and issues of confidentiality.	NICE, 2017 WHO, 2009
9. Collaborate with community to develop	Health facilities can collaborate with members of the community to develop services that are culturally appropriate and welcoming. Such engagement can result in community dialog and positive changes in community attitudes. Community	Ben-Arieh, 2006 Scott et al., 2017

culturally appropriate and welcoming services	engagement with vulnerable, minority and marginalized communities is particularly important. Where inequities of access or exposure to programs exist because of barriers of geography, language, or technology, specific strategies are needed to overcome these barriers.	WHO, 2017 (GP8)
10. Collaborate with other service providers to increase referrals	Health workers should provide information to children who have been maltreated and their caregivers regarding policing and legal option, and when possible, should provide referrals to social workers or other service providers. Collaboration with service providers such as police can increase referrals from those providers to health services. The goal of such collaboration is a unified approach among service providers, including cooperation and sharing of information focused on providing immediate access to healthcare for children who have suffered abuse or neglect. Health workers should not delay care waiting for police-related action.	Cheung, 2005 Halileh, 2009 NICE et al., 2017 Scott et al., 2017 WHO, 2015 WHO, 2017 (GP8)
11. Provide ongoing training, supervision, and support for staff	Health facilities should provide ongoing training and support to staff involved in recognizing and managing child abuse and neglect, to increase the effectiveness of their work. Possible strategies include self-study course training, continuing professional development, combinations of training and oversight during patient care, and quarterly review supervision. Health workers are often willing but lack confidence, competence, and training, and with experience and training can improve their abilities. Health workers should be trained to understand the dynamics of abuse (including emotional abuse) rather than focusing solely on physical health, and to respond in empathetic and non-judgmental ways.	Child et al., 2014 Scott et al., 2017 NICE, 2017
12. Provide experts to supervise and support staff	Health facilities should make available experts to provide oversight and support non-expert staff. Providers and teams with specialized training in neglect and abuse can lead to improved examinations, management, crisis intervention, and comprehensive medical services.	Scott et al., 2017
13. Provide interpreters and other specialists to assist in care of deaf and disabled children	Health facilities should carefully consider the needs of deaf and disabled children and provide interpreters and other specialists to assist in their assessment and care, whether or not maltreatment is suspected. Research shows that maltreatment of deaf and disabled children is often missed by health workers even when these children are in regular contact with the health system. Relying on caregivers to interpret is not advised, as this might allow caregivers to conceal maltreatment.	Jones et al., 2017
14. Plan for continuity of care	Children, adolescents, and caregivers benefit if they have continuity of care, and are more likely to trust health workers that they have been able to see and build a relationship with	NICE, 2017

	over time. Such trust may be a critical determinant of whether children and adolescents choose to tell health workers about abuse and neglect. Continuity must be addressed in service planning rather than by individual health workers.	
15. Publicize availability of services and conduct advocacy to reduce barriers to service access	Efforts should be made to publicize availability of health services for abused children and adolescents, including media campaigns and community outreach. This is particularly important in marginalized communities. At the same time, health facilities and health system staff should advocate policy-makers to reduce the barriers to accessing services.	Scott, 2017 WHO, 2017 (GP8)

Equity, Feasibility, and Context Considerations

A critical point regarding facilitating uptake of services is that many factors must be addressed at the level of the health facility, rather than by individual health workers. Health workers can model professionalism and build trusting relationships with patients and their families, which may facilitate disclosure of neglect or abuse. However, many barriers to care—particularly for minority, vulnerable, and marginalized populations—must be addressed through institutional action and inter-agency cooperation. For example, providing services to disabled children may require the support of specialists, such as interpreters for deaf children. In low-resource settings, however, such services may not exist, and the costs involved with providing child-friendly spaces, community outreach, ongoing training, and access to experts may be prohibitive.

In many cultures, violence against children (including harsh physical discipline) is widespread and seen as acceptable. This may prevent victims and caregivers, as well as providers, from recognizing abuse. Additionally, in some settings, the treatment of children by their caregivers may be seen as a family matter that outsiders, including medical providers, should not interfere with (Al Eissa, 2010; Bridgewater, 2016; Halileh, 2009).

Question 9

What instruments to assess the risk of recurrence of child maltreatment do exist and what considerations for their use by frontline health workers should be made?

Three pre-identified guidance documents and two articles identified via the literature review (one an expert guidance article and one a literature review) informed the development of the list of instruments and considerations for their use described below. No LMIC literature was found that addressed question nine. Additionally, no instruments were identified that are intended specifically to be used for assessing risk of recurrence.

Table 11. Instruments identified for Question 9

Instrument & Country of origin (if available)	Description	Source

Actuarial instruments: <i>These instruments are based on empirically established relationships between individual and family-level risk factors and occurrence of child maltreatment, and do not allow for subjective judgment by the practitioner.</i>		
1. Actuarial Risk Assessment Instrument Youth (ARIJ)	Actuarial instrument to assess multiple forms of maltreatment.	Van der Put et al. 2016
2. California Family Risk Assessment (CFRA) <i>United States</i>	Actuarial instrument to assess multiple forms of maltreatment.	Dankert & Johnson 2014 Johnson 2011 Johnson et al. 2015 Van der Put et al. 2016
3. Child Abuse Potential Inventory (CAPI)	Actuarial instrument to assess multiple forms of maltreatment.	Ayoub & Milner 1985 Chaffin & Valle 2003 Milner et al. 1984 Ondersma et al. 2005
4. Child Abuse Potential Inventory (Brief CAPI)	Actuarial instrument to assess physical abuse and neglect.	Ondersma et al. 2005
5. Colorado Family Risk Assessment Abuse Scale (original & revised) <i>United States</i>	Actuarial instrument to assess multiple forms of maltreatment.	Coohey et al. 2013
6. Connecticut Risk Assessment <i>United States</i>	Actuarial instrument to assess multiple forms of maltreatment.	Sledjeski et al. 2008
7. Family Psychological Risk Inventory	Actuarial instrument to assess multiple forms of maltreatment.	Hunter et al. 1978
8. Family Stress Checklist	Actuarial instrument to assess multiple forms of maltreatment.	Murphy et al. 1985
9. Instrument for Early Identification of	Actuarial instrument to assess multiple forms of maltreatment.	Van der Put et al. 2017

Parents at Risk for Child Abuse and Neglect (IPARAN)		
10. Maternal History Interview 2 (MHI 2)	Actuarial instrument to assess physical abuse and neglect.	Altemeier et al. 1984 Brayden et al. 1993
11. Michigan Family Risk Assessment <i>United States</i>	Actuarial instrument to assess multiple forms of maltreatment.	Baird & Wagner 2000
12. Minnesota Family Risk Assessment (MFRA) <i>United States</i>	Actuarial instrument to assess multiple forms of maltreatment.	Loman & Siegel 2004
13. National Council on Crime and Delinquency Risk Assessment instruments	Actuarial instrument to assess multiple forms of maltreatment.	Wood 1997
14. Predictive Risk Model	Actuarial instrument to assess multiple forms of maltreatment.	Vaithianathan et al. 2013
15. Screening Checklist for Risk of Referral	Actuarial instrument to assess multiple forms of maltreatment.	Hamilton & Browne 1999
16. Significant Harm of Infants Study (SHIS) <i>United Kingdom</i>	Actuarial instrument developed using an inventory of risk and protective factors associated with risk of maltreatment or recurrence of maltreatment of infants. The instrument produces a 4-level index of the family's ability to provide a nurturing home that predicts the likelihood of infants suffering harm.	Developed for UK Department of Education by H. Ward, R. Brown, D. Westlake, and E.R. Munro
17. Structured Decision Making (SDM) <i>United States</i>	Actuarial instrument based upon statistical association of variables with maltreatment injury, foster care placement, and reinvestigation within two years of initial incident of maltreatment. Families are classified as being at low, medium, or high risk of subsequent maltreatment. Validity has been shown to be good compared to consensus-based instruments.	Developed by Children's Research Center
18. Youth Actuarial Care Needs Assessment instrument for	Actuarial instrument to assess general maltreatment.	Assink et al. 2015

Non-Offenders (Y-ACNAT-NO) <i>Netherlands</i>		
Consensus-based instruments: <i>These instruments are based on characteristics that have been deemed relevant through consensus among experts and allow the practitioner to subjectively rate these characteristics.</i>		
1. California Family Assessment Factor Analysis (CFAFA), or Fresno Model United States	Consensus-based instrument which includes 23 items within 5 domains: precipitating incident, child assessment, caregiver assessment, family assessment, and family-agency interaction. All types of maltreatment are assessed together.	Baird & Wagner 2000
2. Child Abuse and Neglect Tracking System of Illinois (CANTS 17B) United States	Consensus-based instrument to assess multiple forms of maltreatment.	Camasso & Jagannathan 1995
3. Child at Risk Field System (CARF) United States	Consensus-based instrument which focuses on safety as distinct from risk and includes 14 items within 5 domains: child, parent, family, maltreatment, and intervention. Families are classified according to risk level of recurrence of any types of maltreatment rather than by specific type of abuse or neglect.	ACTION for Child Protection
4. Child Emergency Response Assessment Protocol (CERAP) United States	Consensus-based instrument which includes 14 items. One each item the practitioner scores the child as “safe” or “unsafe”. If the child is scored as unsafe on one or more items, a safety plan is developed. All types of maltreatment are assessed together.	Developed by Illinois Department of Child and Family Services, the American Humane Association, the University of Illinois, and experts in the field
5. Ontario Risk Assessment instrument Canada	Consensus-based instrument to assess multiple forms of maltreatment.	Barber et al. 2008

6. Risk Assessment Model of Child Protection Canada	Consensus-based instrument which includes 22 items within 5 domains: caregiver, child, family, intervention, and abuse/neglect. This instrument is used to determine whether a child should be removed from his or her home and placed in foster care. All types of maltreatment are assessed together.	Based on Family Risk Scales and Child Well-Being Scales originally developed by Magura and Moses (1986), but modified by a research team from the University of Toronto in consultation with the Ontario Association of Children's Aid Societies
7. Utah Risk Assessment Scales United States	Consensus-based instrument which includes 32 items within 5 domains: parent, child, family, maltreatment, and intervention. All types of maltreatment are assessed together.	Developed by members of the Utah Department of Social Services and the Utah Child Welfare Training Project; based on Family Risk Scales and Child Well-Being Scales originally developed by Magura and Moses (1986)
8. Washington Risk Assessment Matrix (WRAM) United States	Consensus-based instrument which includes 37 items within 7 domains: child characteristics, severity of abuse/neglect, chronicity of abuse/neglect, caretaker characteristics, caretaker/child relationship, socioeconomic factors, and perpetrator access. Families are classified according to risk level of recurrence of any types of maltreatment rather than by specific type of abuse or neglect.	Baird & Wagner 2000 Camasso & Jagannathan 1995 Developed by Washington State social service agency
Structured clinical judgment (SCJ) instruments: These instruments assess empirically-derived risk factors but also allow the practitioner to subjectively rate these risk factors, and leave the final decision to the practitioner.		

9. California Family Risk Assessment (with possibility to overrule) United States	SCJ instrument to assess multiple forms of maltreatment.	Johnson 2011
10. Check List of Child Safety (CLCS)	SCJ instrument to assess multiple forms of maltreatment.	Bartelink et al. 2015 Van der Put et al. 2016
11. Child Abuse Risk Evaluation (CARE-NL)	SCJ instrument to assess multiple forms of maltreatment.	De Ruiter et al. 2012
12. Maternal History Interview (MHI)	SCJ instrument to assess physical abuse.	Altemeier et al. 1984
13. Structured Problem Analysis of Raising Kids (SPARK)	SJC instrument to assess multiple forms of maltreatment.	Staal et al. 2013

Table 12. Best practices for Question 9

Key themes	Articulation	Primary sources
14. Good clinical skills are required for accurate use of instrument, and instrument is not a substitute for clinical judgment	Good clinical skills are required for the use of any instrument assessing risk of recurrence of maltreatment, as the health worker is required to assign scores on multiple items using his or her clinical judgment. Health workers should feel empowered to override items based on family characteristics or dynamics not covered by the instrument. Similarly, use of an instrument does not substitute for good clinical judgment but only enhances or expands that judgment. However, use of instruments has been found to result in fewer children being returned to environments where they experience recurrence of maltreatment.	D'andrade, 2008
15. A numerical score can be used as a decision-making instrument but may not be reliable and accurate on its own	Researchers disagree over whether a numerical score, particularly one produced by an actuarial instrument, is a reliable and accurate in indicating risk of future maltreatment, or whether it should be subject to the practitioner's judgment on a case-by-case basis. Some researchers argue that each individual case is complex with unique risk factors and details that cannot be reflected in a numerical score and that actuarial instruments should be used only as decision-making instruments.	Davies and Ward, 2012

16. False positives and false negatives should be avoided	False positives (erroneously judging a child to be at risk of recurrence of maltreatment when he or she is not) can result in poor targeting of available resources. False negatives (falsely judging a child to <i>not</i> be at risk of recurrence of maltreatment when he or she is) can be dangerous to the child. Careful assessment is needed to avoid both pitfalls.	D'andrade, 2008
17. Existing instruments do not focus on broader environment	Existing instruments for assessing risk of recurrence of child maltreatment focus on the individual child and family and not the broader environment (such as neighborhood, community, and societal factors) which may influence risk of recurrence of maltreatment.	D'andrade, 2008
18. Provision of services may reduce risk	The provision of services in an intervention may reduce the risk of recurrence of maltreatment, and this factor should be considered when assessing this risk.	D'andrade, 2008
19. Risk may vary over time	A family's risk may vary over time, and it is important to periodically re-assess risk. However, health workers may have difficulty revising their assessment once a judgment has been made, and many instruments focus primarily on static rather than dynamic risk factors.	D'andrade, 2008
20. Reliability, validity, and acceptability of instrument may vary across contexts and populations	For most instruments, available research is very limited (sometimes only a single study) and thus the reliability and validity of the instrument in various contexts is unknown. In addition, for most instruments there is limited research evaluating the quality of the implementation process and acceptance of the instrument by health workers. In addition, an instrument may not be equally valid across racial and ethnic groups.	D'andrade, 2008
21. Existing instruments are better at predicting onset of maltreatment than recurrence	Most instruments have been little researched, but available evidence suggests that existing instruments are better at predicting onset of maltreatment than recurrence of maltreatment.	van der Put, 2017
22. Actuarial instruments are limited in ability to guide case planning	Available evidence suggests that actuarial instruments are better than clinical instruments (consensus-based instruments and structured clinical judgment instruments) at predicting child maltreatment and can guide intervention urgency and intensity. Yet as they are based on static risk factors and do not identify the full range of a child's risk factors relevant to an intervention, they are limited in their ability to guide case planning.	van der Put, 2017

Further Considerations

No instruments were identified which specifically assess risk of recurrence of child maltreatment. A number of instruments were identified which assess future risk of various forms of child abuse and neglect, and so could be used to assess risk of recurrence of child maltreatment. These instruments are described in Table 9. According to Van der Put and colleagues (2017), evidence supports the use of one specific instrument, the California Family Risk Assessment.

Instruments to assess child maltreatment are of three types, and each type has advantages and disadvantages which should be considered before adopting an instrument for use by frontline health workers.

- **Actuarial instruments** are based on empirically established relationships between individual and family-level risk factors and occurrence of child maltreatment, and do not allow for subjective judgment by the practitioner.
- **Consensus-based instruments** are based on characteristics that have been deemed relevant through consensus among experts and allow the practitioner to subjectively rate these characteristics.
- **Structured clinical judgment (SCJ) instruments** assess empirically-derived risk factors but also allow the practitioner to subjectively rate these risk factors, and leave the final decision to the practitioner.

Actuarial instruments are the least subjective of all instrument types as they focus on a small set of characteristics of the child or family which have demonstrated a strong statistical relationship to future maltreatment and do not allow for subjective judgment by the practitioner (D'andrade et al., 2008; Van der Put et al., 2015; Van der Put et al., 2017). These instruments demonstrate high inter-rater reliability and have been found to produce more accurate and reliable predictions than other types of instruments (D'andrade et al., 2008; Van der Put et al., 2015). Actuarial instruments have also been criticized by some researchers for not allowing sufficient consideration of the specific characteristics of an individual case (Davies and Ward, 2012). In the view of some researchers, actuarial instruments do not produce a reliable and accurate measure of future risk and should be considered decision-making instruments of limited scope, to be used in conjunction with other sources of data such as detailed qualitative information about the case (Davies and Ward, 2012). Actuarial instruments are also limited in that they provide only risk assessment (the likelihood of future incidents of maltreatment) and not needs assessment (assessment of service needs) (Van der Put et al., 2015; Van der Put et al., 2017). In other words, an actuarial instrument can assist a health worker in assessing the future risk of an individual child or family but cannot aid in case planning, such as determining where to direct scarce resources, which cases are highest priority, and how to direct interventions.

Consensus-based instruments rely on the subjective clinical judgment of the practitioner which some researchers view as a strength (D'andrade et al., 2008; Davies and Ward, 2012) but other researchers criticize on the grounds that they perform poorly and consistently worse than actuarial instruments (Van der Put et al., 2015). In fact, some consensus-based instruments have not been found to not perform better than chance (Van der Put et al., 2015). Nevertheless, clinical approaches—which include consensus-based instruments, structured clinical judgment instruments, and decision-making without the use of an instrument—remain more common than use of actuarial instruments (Van der Put et al., 2015).

Some researchers view actuarial and consensus-based instruments as having limitations in that they primarily assess static rather than dynamic risk factors and thus cannot assess how risk changes over time, including in response to interventions which may reduce risk (D’andrade et al., 2008; Van der Put et al., 2015). Researchers also argue that there is no intrinsic reason that instruments could not include dynamic risk factors, and that further work is needed to develop more sophisticated assessment instruments which can provide both risk and needs assessment, as has been done in fields such as juvenile justice (Van der Put et al., 2015). Existing instruments primarily focus on individual and family-level factors rather than socio-contextual determinants of risk (neighborhood, community, and societal), which may further limit their validity (D’andrade et al., 2008). Current research on the use of assessment instrument remains limited, with most instruments having been evaluated only a handful of times, rarely with different racial or ethnic groups, and sometimes only once by the researcher(s) who developed the instrument (D’andrade et al., 2008). To our knowledge, no instrument to assess future risk of child maltreatment has yet been evaluated in an LMIC setting.

Neglect and emotional abuse are the most likely to recur or persist of all types of maltreatment, and the following risk factors have been identified for recurring or persistent child abuse and neglect (NICE, 2017). (The bullet points below are derived verbatim from Recommendation 1.2.10 of the NICE guidelines.) These risk factors could be used as criteria to evaluate which of the available instruments are most suitable for assessing recurrence of maltreatment, but to our knowledge this has not yet been done.

- The parent or carer does not engage with services.
- There have been 1 or more previous episodes of abuse or neglect
- The parent or carer has a mental health or substance misuse problem.
- There is chronic parental stress.
- The parent or carer experienced abuse or neglect as a child.

Question 10

What are best practices for ensuring appropriate reporting or referral (in accordance with local laws and policies) of child maltreatment once it is suspected or identified?

Question 10 was added during the literature review due to the emergence of health worker reporting and referral practices as an important topic within the literature on response to child maltreatment. The literature search identified 18 relevant primary research articles from the following countries: Saudi Arabia (1), Kuwait (1), Turkey (1), Jordan (1), Brazil (4), India (1), US (4), UK (2), Sweden (1), Vietnam (1), and the Netherlands (1). The WHO Clinical Guidelines for Responding to Children and Adolescents Who Have Been Sexually Abused also describe best practices under good practice statements seven (GP7) and nine (GP9) that align closely with those mentioned below.

Table 13. Best practices for Question 10

Best practices	Articulation	Primary sources
<i>Best practices for health workers</i>		
1. Recognize and resist psychological	Health workers should recognize psychological barriers that may impede their judgment in deciding whether to report suspected cases of child maltreatment, and should resist clouded judgment.	Bannwart & Faria, 2011

barriers to reporting suspected cases of child maltreatment	Such barriers include assuming that they can accurately identify who is capable of neglect or abuse or that caretakers could not be capable of maltreatment. Health workers may assume caretakers are incapable of maltreatment if they appear caring and friendly, if they are well known to the health worker, or if they come from a similar socioeconomic or cultural background. Long-term, empathetic relationships between health workers and caregivers can also cause health workers to miss evidence of child maltreatment, underestimate its severity, or fail to report it.	Flaherty & Sege, 2005 Flaherty et al., 2014 Jones et al., 2008 Leite et al., 2016 Tiyyagura et al., 2015 Woodman et al., 2013
2. Respond with direct intervention only if a referral system for maltreated children is not available	Health workers should not assume that they can handle suspected cases of maltreatment more effectively through direct intervention, rather than referring cases to social services or police. Health workers may fear that reporting a case will result in the child being removed from the home or the caregivers no longer bringing the child for care at the health facility, and thus rationalize that they can effectively handle the case without reporting. Conversely, health workers may believe other service providers will underestimate the severity of the maltreatment and thus that reporting will not benefit the child. Health workers should directly intervene only if there is no available referral system for maltreated children.	Abu-Moghli, 2005 Al-Saadoon et al., 2012 Bannwart & Faria, 2011 Flaherty & Sege, 2005 Jones et al., 2008 Woodman et al., 2013
3. Treat all forms of maltreatment as significant and deserving of report	Health workers should treat all forms of maltreatment as significant, and should not decide against reporting certain forms of maltreatment (such as emotional abuse and neglect) because they seem less serious than other forms of maltreatment (such as physical or sexual abuse). Health workers have a duty to report suspected or identified cases of maltreatment regardless of local cultural norms, such as viewing child upbringing as a “family matter” or certain forms of maltreatment as normative and acceptable. Health workers also have a duty to report regardless of whether the health worker is a citizen of the country where he or she resides.	Abu-Moghli, 2005 Al-Moosa et al., 2003 Flaherty & Sege, 2005 Jones et al., 2008 Orhon et al., 2006 Woodman et al., 2013
4. Discuss case with colleagues	Health workers should discuss a case of suspected maltreatment with one or more colleagues, particularly more senior colleagues or experts in child maltreatment.	Jones et al., 2008 Sidebotham et al., 2007 Tiyyagura et al., 2015
5. Report suspected maltreatment	Health workers should not only report maltreatment that they feel confident has occurred, but also maltreatment that they have “reasonable cause to suspect”. Health workers should understand	Bannwart & Faria, 2011

even if it remains unproven	that such reporting may result in positive benefits such as families receiving needed services even if the suspicion of maltreatment is not substantiated.	Flaherty & Sege, 2005 Svård, 2017 Tiyyagura et al., 2015 Woodman et al., 2013
<i>Best practices for health facilities</i>		
6. Provide training and support to health workers	Health facilities should provide training and support to health workers who manage cases of child maltreatment, such as through sending staff to training courses, making child abuse experts available to staff, or facilitating meetings among staff to pool experience and knowledge regarding a case of suspected or identified abuse. Staff may require support in evaluating whether evidence has reached the threshold of “reasonable cause to suspect” maltreatment, or in preparing testimony for a court appearance. Staff may also need support regarding the extra time it takes to investigate and report maltreatment or to appear in court, and may require emotional support (such as debriefing with a trained professional) after reporting or testifying in court. If staff have concerns about legal action being taken against them, the health facility should provide information about their rights. Staff who receive adequate support will be more likely to view the experience of reporting suspected maltreatment positively, and more likely to report in the future.	Al-Moosa et al., 2003 Alnasser et al., 2017 Bannwart & Faria, 2011 Deshpande et al., 2015 Flaherty et al., 2004 Flaherty & Sege, 2005 Jones et al., 2008 Konijnendijk et al., 2017 Leite et al., 2006 Leite et al., 2016 Tiyyagura et al., 2015 WHO, 2017 (GP7, GP9)
7. Institute clear and systematic protocols in keeping with national laws and regulations	Health facilities should institute clear and systematic protocols which are aligned with national laws and regulations for management of cases of suspected child abuse and neglect. Such protocols improve thoroughness of response and documentation and increase the likelihood that cases will be reported appropriately. Protocols should be brief, ideally include a single-page flow chart, and outline clear roles and responsibilities including for management of case and following up after referral. If a checklist to help identify maltreatment is included, it should be brief and clearly designated as a memory aid and not as a screening tool.	Abu-Moghli, 2005 Flemington & Fraser, 2016 Scott et al., 2017 Sidebotham et al., 2007 Svård, 2017 Tiyyagura et al., 2015 WHO (GP97, GP9)

8. Form close collaborations with other agencies	Health workers may be reluctant to report suspected cases of child maltreatment due to lack of confidence in other agencies, particularly social and child protection services. Greater collaboration could ease this mistrust, facilitate feedback from other agencies to health workers, and provide evidence of the value of reporting and referral, thus increasing the likelihood that health workers will view reporting and referral as positive and productive and choose to report suspected cases of child maltreatment. Health facilities should collaborate closely with other agencies such as social services, police, and non-governmental organizations providing services to maltreated children. Effective collaboration between agencies is characterized by shared decision-making, clearly defined roles (including individuals designated to be responsible for inter-organization communication), integration of processes and strategies, and joint reflection and learning. One model of such collaboration is multidisciplinary teams (MDT) that manage cases of child maltreatment and can include health workers as well as mental health professionals and police.	Bannwart & Faria, 2011 Elmquist et al., 2015 Flaherty et al., 2004 Leite et al., 2016 Lewis et al., 2015 Sabale et al., 2014 Tiyyagura et al., 2015 WHO, 2017 (GP7, GP9))
9. For hospitals, consider forming child protection teams (CPT)	Hospitals should consider forming multi-disciplinary, in-house child protection teams (CPT) comprised of doctors, nurses, and/or social workers, which can assist health workers in evaluating and managing cases of child abuse and neglect. CPTs can provide services such as consulting on cases, coordinating and filing reports with social services, tracking cases, and providing quality assurance, thus supporting health workers in reporting cases of suspected child maltreatment.	Tien et al., 2002

Equity, Feasibility, and Contextual Considerations

In some cases, health workers may have to use their judgment regarding the mandate to report, if there is a possibility that such reporting would place the child at further risk. Such cases might include fragile health or legal systems that cannot ensure the child's safety, and in which sharing information about a child might place the child at risk of stigma or harm (IRC, 2012).

Multiple sources highlighted the dilemmas that health workers face in trying to decide whether or not to report and refer suspected cases of child abuse and neglect. Health workers experience considerable anxiety that they might make the wrong decision, and either incur negative consequences (such as an investigation) for a family that has not experienced maltreatment, or fail to protect a child that is experiencing maltreatment. Even when health workers strongly suspect that maltreatment is occurring, they may rationalize not reporting the case as they feel they are more equipped to respond to the situation than are child protective services. The literature revealed that in many contexts, health workers deeply mistrust child protective services, and thus in some cases actively avoid referral of cases. Child protective services are widely viewed as being slow and inefficient, offering poor communication and feedback to health workers (which causes health workers to lack confidence that past referrals were

effective), and either under-reacting to suspicions of maltreatment (thus leaving children vulnerable and at risk) or over-reaction to suspicions of maltreatment (thus causing a family grief through an overly-intrusive investigation). Creating mutual trust and confidence between health workers and child protective services seems to be critical to the goal of increased reporting and referral by health workers.

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ANNEXES

Annex 1: Search Details

Table 14. Syntaxes, filters, and records retrieved for database searches

Questions		Scopus Syntax	PubMed Syntax	Filters	Records Retrieved
1	Conducting physical exam/forensic investigation	(TITLE-ABS-KEY (child* OR adolescen* OR youth* OR teen* OR girl? OR boy? OR infant* OR baby OR babies OR toddler* OR "young person" OR "young people" OR minor? OR preteen* OR tween* OR kid? OR preschool* OR pre-school*)) AND (TITLE-ABS-KEY ("emotional* abuse*" OR "physical* abuse*" OR "child abuse*" OR "emotional maltreat*" OR "physical* maltreat*" OR "child maltreat*" OR "physical* assault*" OR "emotional* assault*" OR neglect* OR "battered child*" OR "violence against children")) AND (TITLE-ABS-KEY (best OR prefer* OR appropriate OR "best practice*" OR optimal OR guid* OR principle* OR "good practice*")) AND (TITLE-ABS-KEY (provider* OR physician* OR nurse* OR doctor* OR "health worker*" OR "practitioner*" OR "health auxiliary" OR "frontline health" OR "frontline worker*" OR "health assistant*" OR "health aide*" OR "health assistant*")) OR (TITLE-ABS-KEY ("health facilit*" OR clinic* OR "health post*" OR hospital* OR "emergency room*" OR "emergency department*" OR "health system*" OR "health sector*" OR medical OR medicine OR treatment* OR diagnos* OR exam*)) AND (TITLE-ABS-KEY ("medical history*" OR "health history" OR "medical exam*" OR "health exam*" OR "forensic interview*" OR "physical exam*" OR "forensic invest*" OR "medical document*" OR "medical invest*"))	((((("Child Abuse"[Mesh:NoExp])) AND ((best[tw] OR prefer*[tw] OR appropriate[tw] OR "best practice*" [tw] OR optimal[tw] OR guid*[tw] OR principle*[tw] OR "good practice*" [tw])))) AND ((provider*[tw] OR physician*[tw] OR nurse*[tw] OR doctor*[tw] OR "health worker*" [tw] OR "practitioner*" [tw] OR "health auxiliary" [tw] OR "frontline health" [tw] OR "frontline worker*" [tw] OR "health assistant*" [tw] OR "health aide*" [tw] OR "health assistant*" [tw] OR "health facilit*" [tw] OR clinic*[tw] OR "health post*" [tw] OR hospital*[tw] OR "emergency room*" [tw] OR "emergency department*" [tw] OR "health system*" [tw] OR "health sector*" [tw] OR medical[tw] OR medicine[tw] OR treatment*[tw] OR diagnos*[tw] OR exam*[tw])))) AND ((("medical history*" [tw] OR "health history" [tw] OR "medical exam*" [tw] OR "health exam*" [tw] OR "forensic interview*" [tw] OR "physical exam*" [tw] OR "forensic invest*" [tw] OR "medical document*" [tw] OR "medical invest*" [tw]))))	LMIC literature OR literature from HIC not covered in NICE guideline review OR published after April 2016	Scopus: 132 PubMed: 3
3	Obtaining medical history/conducting forensic interview				
4	Documentation of medical history/exam				
2	Seeking informed consent and assent	(TITLE-ABS-KEY (consent* OR assent* OR permission* OR permit* OR agree* OR approv*)) AND (TITLE-ABS-KEY (best OR prefer* OR appropriate OR "best practice*" OR optimal OR guid* OR principle* OR "good practice")) AND (TITLE-ABS-KEY ("emotional* abuse*" OR "physical* abuse*" OR "sexual* abuse*" OR "child abuse*" OR "emotional maltreat*" OR "physical* maltreat*" OR "sexual* maltreat*" OR "child maltreat*" OR "physical* assault*" OR	((("Child Abuse"[Mesh]) AND ((best[tw] OR prefer*[tw] OR appropriate[tw] OR best practice*[tw] OR optimal[tw] OR guid*[tw] OR principle*[tw] OR good practice[tw])))) AND ((consent*[tw] OR assent*[tw] OR permission*[tw] OR permit*[tw] OR agree*[tw] OR approv*[tw]))	None	Scopus: 589 PubMed: 106

Questions		Scopus Syntax	PubMed Syntax	Filters	Records Retrieved
		"emotional* assault*" OR "sexual* assault*" OR neglect*)) AND (TITLE-ABS-KEY (child* OR adolescen* OR youth* OR teen* OR girl? OR boy? OR infant* OR baby OR babies OR toddler* OR "young person" OR "young people" OR minor? OR preteen* OR tween* OR kid? OR preschool* OR pre-school*)) AND ((PUBYEAR > 2000))			
5	Assessing safety/developing safety plan	((TITLE-ABS-KEY("health facilit*" OR clinic* OR "health post*" OR hospital* OR "emergency room*" OR "emergency department*" OR "health system*" OR "health sector*" OR medical OR medicine OR treatment* OR diagnos* OR exam*)) OR (TITLE-ABS-KEY(provider* OR physician* OR nurse* OR doctor* OR "health worker*" OR "practitioner*" OR "health auxiliary" OR "frontline health" OR "frontline worker*" OR "health assistant*" OR "health aide*" OR "health assistant*")) AND (TITLE-ABS-KEY(best OR prefer* OR appropriate OR "best practice*" OR optimal OR guid* OR principle* OR "good practice")) AND (TITLE-ABS-KEY("emotional* abuse*" OR "physical* abuse*" OR "sexual* abuse*" OR "child abuse*" OR "emotional maltreat*" OR "physical* maltreat*" OR "sexual* maltreat*" OR "child maltreat*" OR "physical* assault*" OR "emotional* assault*" OR "sexual* assault*" OR neglect*)) AND (TITLE-ABS-KEY(child* OR adolescen* OR youth* OR teen* OR girl? OR boy? OR infant* OR baby OR babies OR toddler* OR "young person" OR "young people" OR minor? OR preteen* OR tween* OR kid? OR preschool* OR pre-school*)) AND (TITLE-ABS-KEY (safe* OR protect* OR "risk assess*" OR "risk benefit analysis" OR "risk-benefit analysis" OR "at risk" OR "risk of recur*" OR "in danger" OR "need* assess*" OR welfare OR "wellbeing" OR "well being" OR "well-being" OR "patient care plan*" OR "care plan*"))	((("Child Abuse"[Mesh:NoExp])) AND ((best[tw] OR prefer*[tw] OR appropriate[tw] OR best practice*[tw] OR optimal[tw] OR guid*[tw] OR principle*[tw] OR good practice[tw]))) AND ((provider*[tw] OR physician*[tw] OR nurse*[tw] OR doctor*[tw] OR "health worker*[tw] OR "practitioner*[tw] OR "health auxiliary"[tw] OR "frontline health"[tw] OR "frontline worker*[tw] OR "health assistant*[tw] OR "health aide*[tw] OR "health assistant*[tw] OR "health facilit*[tw] OR clinic*[tw] OR "health post*[tw] OR hospital*[tw] OR "emergency room*[tw] OR "emergency department*[tw] OR "health system*[tw] OR "health sector*[tw] OR medical[tw] OR medicine[tw] OR treatment*[tw] OR diagnos*[tw] OR exam*[tw]))) AND ((safe*[tw] OR protect*[tw] OR "risk assess*[tw] OR "risk benefit analysis"[tw] OR "risk-benefit analysis"[tw] OR "at risk"[tw] OR "risk of recur*[tw] OR "in danger"[tw] OR "need* assess*[tw] OR welfare[tw] OR "wellbeing"[tw] OR "well being"[tw] OR "well-being"[tw] OR "patient care plan*[tw] OR "care plan*[tw]))	LMIC literature OR literature from HIC not covered in NICE guideline review OR published after April 2016	Scopus: 869 PubMed: 50
7	Ensuring health worker safety	((TITLE-ABS-KEY("health facilit*" OR clinic* OR "health post*" OR hospital* OR "emergency room*" OR "emergency department*" OR "health system*" OR "health sector*" OR medical OR medicine OR treatment* OR diagnos* OR exam*)) OR (TITLE-ABS-KEY(provider* OR physician* OR nurse* OR doctor* OR "health worker*" OR	("Child Abuse"[Mesh:NoExp]) AND (best[tw] OR prefer*[tw] OR appropriate[tw] OR best practice*[tw] OR optimal[tw] OR guid*[tw] OR principle*[tw] OR good practice[tw]) AND ((provider*[tw] OR physician*[tw] OR nurse*[tw]	None	Scopus: 384 PubMed: 10

Questions			Scopus Syntax	PubMed Syntax	Filters	Records Retrieved
			"practitioner*" OR "health auxiliary" OR "frontline health" OR "frontline worker*" OR "health assistant*" OR "health aide*" OR "health assistant*")) AND (TITLE-ABS-KEY(best OR prefer* OR appropriate OR "best practice*" OR optimal OR guid* OR principle* OR "good practice")) AND (TITLE-ABS-KEY("emotional* abuse*" OR "physical* abuse*" OR "sexual* abuse*" OR "child abuse*" OR "emotional maltreat*" OR "physical* maltreat*" OR "sexual* maltreat*" OR "child maltreat*" OR "physical* assault*" OR "emotional* assault*" OR "sexual* assault*" OR neglect*)) AND (TITLE-ABS-KEY(child* OR adolescen* OR youth* OR teen* OR girl? OR boy? OR infant* OR baby OR babies OR toddler* OR "young person" OR "young people" OR minor? OR preteen* OR tween* OR kid? OR preschool* OR pre-school*)) AND (TITLE-ABS-KEY ((safe* OR protect* OR risk* OR danger* OR burnout OR burn-out OR "burn* out" OR emotion* OR welfare OR "wellbeing" OR "well being" OR "well-being" OR distress* OR fear* OR worry OR worri*) W/5 (provider* OR physician* OR nurse* OR doctor* OR "health worker*" OR "practitioner*" OR "health auxiliary" OR "frontline health" OR "frontline worker*" OR "health assistant*" OR "health aide*" OR "health assistant*"))	OR doctor*[tw] OR "health worker*"[tw] OR "practitioner*"[tw] OR "health auxiliary"[tw] OR "frontline health"[tw] OR "frontline worker*"[tw] OR "health assistant*"[tw] OR "health aide*"[tw] AND (safe*[tw] OR protect*[tw] OR risk*[tw] OR danger*[tw] OR burnout[tw] OR burn-out[tw] OR "burn* out"[tw] OR emotion*[tw] OR welfare[tw] OR "wellbeing"[tw] OR "well being"[tw] OR "well-being"[tw] OR distress*[tw] OR fear*[tw] OR worry[tw] OR worri*[tw]))		
8	Facilitating uptake of services		((TITLE-ABS-KEY("health facilit*" OR clinic* OR "health post*" OR hospital* OR "emergency room*" OR "emergency department*" OR "health system*" OR "health sector*" OR medical OR medicine OR treatment* OR diagnos* OR exam*)) OR (TITLE-ABS-KEY(provider* OR physician* OR nurse* OR doctor* OR "health worker*" OR "practitioner*" OR "health auxiliary" OR "frontline health" OR "frontline worker*" OR "health assistant*" OR "health aide*" OR "health assistant*")) AND (TITLE-ABS-KEY (best OR prefer* OR appropriate OR "best practice*" OR optimal OR guid* OR principle* OR "good practice")) AND (TITLE-ABS-KEY("emotional* abuse*" OR "physical* abuse*" OR "sexual* abuse*" OR "child abuse*" OR "emotional maltreat*" OR "physical* maltreat*" OR "sexual* maltreat*" OR "child maltreat*" OR "physical* assault*" OR "emotional* assault*" OR "sexual* assault*" OR neglect*)) AND	((("Child Abuse"[Mesh:NoExp])) AND ((best[tw] OR prefer*[tw] OR appropriate[tw] OR best practice*[tw] OR optimal[tw] OR guid*[tw] OR principle*[tw] OR good practice[tw]))) AND ((provider*[tw] OR physician*[tw] OR nurse*[tw] OR doctor*[tw] OR "health worker*"[tw] OR "practitioner*"[tw] OR "health auxiliary"[tw] OR "frontline health"[tw] OR "frontline worker*"[tw] OR "health assistant*"[tw] OR "health aide*"[tw] OR "health assistant*"[tw] OR "health facilit*"[tw] OR clinic*[tw] OR "health post*"[tw] OR hospital*[tw] OR "emergency room*"[tw] OR "emergency department*"[tw] OR "health system*"[tw] OR "health sector*"[tw] OR medical[tw] OR	None	Scopus: 1,896 PubMed: 126

Questions	Scopus Syntax	PubMed Syntax	Filters	Records Retrieved
	(TITLE-ABS-KEY(child* OR adolescen* OR youth* OR teen* OR girl? OR boy? OR infant* OR baby OR babies OR toddler* OR "young person" OR "young people" OR minor? OR preteen* OR tween* OR kid? OR preschool* OR pre-school*)) AND (TITLE-ABS-KEY ((access* OR seek* OR use* OR using OR engag* OR visit* OR attend* OR uptake) AND (health OR emergency OR medical OR therap*) AND (service* OR care OR treat*))) AND ((PUBYEAR > 2000)))	medicine[tw] OR treatment*[tw] OR diagnos*[tw] OR exam*[tw])) AND (((access*[tw] OR seek*[tw] OR use*[tw] OR using[tw] OR engag*[tw] OR visit*[tw] OR attend*[tw] OR uptake[tw]) AND (health[tw] OR emergency[tw] OR medical[tw] OR therap*) AND (service*[tw] OR care[tw] OR treat*[tw]))))		
9 Instruments to assess risk of maltreatment and considerations for their use	(TITLE-ABS-KEY("emotional* abuse*" OR "physical* abuse*" OR "sexual* abuse*" OR "child abuse*" OR "emotional maltreat*" OR "physical* maltreat*" OR "sexual* maltreat*" OR "child maltreat*" OR "physical* assault*" OR "emotional* assault*" OR "sexual* assault*" OR neglect*)) AND (TITLE-ABS-KEY(child* OR adolescen* OR youth* OR teen* OR girl? OR boy? OR infant* OR baby OR babies OR toddler* OR "young person" OR "young people" OR minor? OR preteen* OR tween* OR kid? OR preschool* OR pre-school*)) AND (TITLE-ABS-KEY ((risk OR recur* OR safe* OR danger OR violence OR harm) AND (screen* OR assess* OR measure* OR predict*) AND (tool* OR instrument* OR scale* OR index* OR indices)))	("Child Abuse"[Mesh]) AND (((risk[tw] OR recur*[tw] OR safe*[tw] OR danger[tw] OR violence[tw] OR harm [tw]) AND (screen*[tw] OR assess*[tw] OR measure*[tw] OR predict*[tw]) AND (tool*[tw] OR instrument*[tw] OR scale*[tw] OR index*[tw] OR indices [tw])))	LMIC literature, OR published after 2008	Scopus: 538 PubMed: 112
Total records retrieved from Scopus and Pubmed searches: 4,842				
Records retrieved from Global Index Medicus regional database search (syntax: <i>mj:{"Child Abuse"}): 457</i>				
Total records retrieved: 5,299				

Table 15. LMIC filters used

Database	Filter Syntax
Scopus	(TITLE-ABS-KEY (Africa OR Asia OR Caribbean OR "West Indies" OR "South America" OR "Latin America" OR "Central America")) OR (TITLE-ABS-KEY (Afghanistan OR Albania OR Algeria OR Angola OR Antigua OR Barbuda OR Argentina OR Armenia OR Armenian OR Aruba OR Azerbaijan OR Bahrain OR Bangladesh OR Barbados OR Benin OR Byelarus OR Byelorussian OR Belarus OR Belorussian OR Belorussia OR Belize OR Bhutan OR Bolivia OR Bosnia OR Herzegovina OR Hercegovina OR Botswana OR Brasil OR Brazil OR Bulgaria OR "Burkina Faso" OR

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Annex 2: Literature Included in Review

Table 16: Pre-identified guidance documents

Author, Year	Title	Description and Evidence Base	Relevant Questions
IRC, 2012	Caring for Child Survivors of Sexual Abuse: Guidelines for health and psychosocial service providers in humanitarian settings	Detailed expert guidance on response to child sexual abuse in conflict and other humanitarian settings. Focuses on actions to be taken by service providers and case workers in consideration of the needs of children and their caregivers. Focuses on children as well as adolescents. Many recommendations aimed at social services case workers but principles are applicable to health providers as well. States that recommendations are based on a literature review and field practice experience. No details are provided regarding how the review was conducted or about which literature informs which recommendations.	Q1, Q2, Q3, Q4, Q5, Q6
Davies and Ward, 2012	Safeguarding Children Across Services: Messages from research	Expert guidance to inform professionals and policymakers involved in the safeguarding of children from neglect and abuse. Based on a review of 15 government-funded research projects from England and Wales. Also included commentary from practitioners, clinicians, and policymakers on those 15 research projects.	Q5, Q9
NICE, 2017	Child abuse and neglect: recognising, assessing and responding to abuse and neglect of children and young people.	Draft guideline from the UK's National Institute for Health and Care Excellence (NICE). Provides recommendations, best practices, and evidence statements based on a systematic review of empirical research studies published in English from 2004 to April 2016 in Europe, Australia, Canada, USA, and New Zealand. For some review questions, only UK studies were included, however evidence statements were developed from all literature. Recommendations were also informed by expert guidance from a young people's expert reference group and the NICE guideline committee.	Q1, Q2, Q3, Q4, Q5, Q6, Q7, Q8
Scott et al., 2017	A literature review on best practices and preferences for initial health system	Report describing detailed findings of literature review conducted to answer six questions informing good practice statements for the WHO clinical guidelines for responding to sexual abuse of children and adolescents. Review included 111 qualitative and quantitative articles from high- as well as low- and middle-income countries published in English between 1995 and July 2016.	Q1, Q3, Q4, Q7, Q8
WHO, 2009	Expert meeting on health-sector responses to violence against women	Expert guidance to inform health professionals in caring for women exposed to violence in resource-poor settings. Provides a summary of evidence of effectiveness of health-sector interventions and framework for recommendations for health-sector responses to violence against women. Based on a literature review and case studies presented at a meeting of experts from various countries.	Q1, Q2, Q3, Q4, Q5, Q7, Q8

WHO, 2015	Background paper for medico-legal toolkit	Background paper on importance of establishing effective systems for collecting and documenting medico-legal evidence in response to cases of sexual violence in conflict settings. Published by bilateral (UN) group that leads action against sexual violence. Based on review of primary research literature and literature from international criminal justice agencies.	Q1, Q3, Q7, Q8
WHO, 2015	Medico-legal policy note	Brief expert guidance regarding the need to develop effective medico-legal evidence systems, particularly in conflict-affected settings. Published by bilateral (UN) group that leads action against sexual violence. References United Nations Security Council Resolution 1820 but no primary research.	Q1
WHO, 2015	Strengthening the medico-legal response to sexual violence (medico-legal toolkit)	Expert guidance for health and other service providers caring for victims of sexual violence in resource-poor settings. Provides best practices guidance on medico-legal response, specifically for resource-poor settings. Published by bilateral (UN) group that leads action against sexual violence. Based on review of primary research literature and literature from international criminal justice agencies.	Q1, Q2, Q3, Q4, Q5
D'andrade et al., 2008	Risk and safety assessment in child welfare	Expert guidance for child welfare practitioners regarding actuarial and consensus-based instruments available to assess risk of recurrence of child maltreatment. Summarizes reliability, validity, outcomes, and use with children and families of color of various instruments available in the United States. Based on a literature review, but no details regarding review methods mentioned.	Q5, Q9

Table 17: Articles identified via literature review

Author, Year	Country	Title	Methodology or Evidence Base	Relevant Questions
Abu-Moghli, 2005	Jordan	Jordanian nurses perception of their role regarding child maltreatment	Quantitative: A questionnaire administered to nurses (approached N=400; Respondents: n=264; 25.07% female; n=89; 74.36% male) working in health care centers, pediatric, and emergency units understanding perception of their role regarding suspected or diagnosed child maltreatment and factors influencing perception.	Q6, Q10
Aggarwal, 2009	India	Recommendations on Recognition and Response to Child Abuse and Neglect in the Indian Setting	Expert Guidance: Recommendations based on task force of the Indian Academy of Pediatrics' Child Rights and Protection Program and Indian pediatricians from all over the country	Q1, Q3, Q4, Q5, Q6

Al Eissa, 2010	Saudi Arabia	Child Abuse and Neglect in Saudi Arabia: Journey of recognition to implementation of national prevention strategies	Quantitative: Retrospectively collected data on all children evaluated by the Suspected Child Abuse and Neglect (SCAN) team in hospital (n=1) from 2000 to 2008. The cases were further divided into 3 subgroups corresponding to the years 2000–2004, 2005–2006, and 2007–2008 parallel to the stages of development of the national child protection system.	Q8
Al-Moosa, 2003	Kuwait	Pediatricians' knowledge, attitudes and experience regarding child maltreatment in Kuwait	Quantitative: Survey using structured self-completed questionnaire administered to pediatricians (N=170, Respondents: n=71; 60.7% male; n=46; 39.3% female) currently working in medical wards and in casualty departments in the six public hospitals evaluating the awareness and actual professional experience of pediatricians regarding child maltreatment.	Q10
Al-Saadoon, 2012	Oman	Child maltreatment types and effects: Series of six cases from a University hospital in Oman	Qualitative: Case (n=6; 1st : new born baby; 2nd : 12yr old girl; 3rd : 22 month old girl; 4th : 12 yr old girl; 5th : 3yr old boy; and 6th: 7 month old boy) presenting different types and severity of CM.	Q5
Alnasser, 2017	Saudi Arabia	Child maltreatment between knowledge, attitude and beliefs among Saudi pediatricians, pediatric residency trainees and medical students	Quantitative: A self-reported questionnaire administered to physicians and medical students (N=150; n=66; 52% male; n=61; 48% female); Respondents: medical students (n=52; 40.9%), Interns (n=22; 17.3%), Residency trainees (n=25; 19.7%), senior physicians (n=28; 22%) assessing their knowledge, attitude and beliefs toward child maltreatment.	Q10
Amaral, 2013	Brazil	Significado do cuidado às crianças vítimas de violência na ótica dos profissionais de saúde	Qualitative: Semi-structured interviews conducted with female medical providers (n=14) working in an emergency pediatric unit about their experiences caring for children who had experienced maltreatment.	Q6, Q7
Bannwart, 2011	Brazil	Dificuldades enfrentadas para identificar e notificar casos de maus-tratos contra crianças e/ou adolescentes sob a ótica de médicos pediatras	Qualitative: Open-ended questionnaire administered to pediatricians (n=8; 50% female) about their approach to managing situations of child abuse.	Q7, Q10
Ben-Arieh, 2006	Israel	The "geography" of child maltreatment in Israel: Findings from a national data set of cases reported to the social services	Quantitative: Questionnaire administered to director or chief CPO of the social services in all localities (n=276) i.e. municipalities and regional councils measuring number and rate of reported cases of child maltreatment by various characteristics (n=6) of localities.	Q8

Bridgewater, 2016	Kenya	Physical and sexual violence against children in Kenya within a cultural context	Literature Review: Review of literature regarding maltreatment of children in Kenya, and personal experience of author (a Kenyan woman) while working with MSF and UNICEF in Kenya	
Campbell, 2006	US	The other children: A survey of child abuse physicians on the medical evaluation of children living with a physically abused child	Quantitative: Survey (self) administered to physicians (N=153); respondents: (n=93); female (n=48; 52%); sees > 50 physical abuse cases annually (n=42, 45%) exploring practice, perception and medical evaluation recommended in the field of child abuse.	Q5
Cheung, 2005	Hong Kong	Management update of child physical abuse in primary care	Expert Guidance: Recommendations based on author's personal experience and Hong Kong law.	Q8
Child, 2014	Uganda	Responding to abuse: Children's experiences of child protection in a central district, Uganda	Quantitative: Survey administered to Ugandan primary school children (n=3,706) and four-month follow-up of those that disclosed experiencing violence (n=529) and were referred to local child protection services. Follow-up consisted of determining whether action was taken based on a referral, and if so, whether the response was adequate.	Q6
Chung, 2002	Hong Kong	A review on multi-disciplinary intervention by child protection professionals in child sexual abuse cases in Hong Kong	Both: Interviews (n=74, gender not specified) with Professionals, Victims and parents in identified cases (n=16); Survey on case files (n=73); participants' observation (n=2) in multidisciplinary conferences on child abuse.	Q5
Deshpande, 2015	India	Knowledge and attitude in regards to physical child abuse amongst medical and dental residents of central Gujarat: A cross-sectional survey	Quantitative: Cross sectional survey conducted using self-administered questionnaire in medical residents (n=89, gender not specified) and dental residents (n=41, gender not specified) assessing their level of knowledge and attitudes with regards to physical child abuse.	Q10
De Zulueta, 2010	UK	Choosing for and with children: consent, assent and working with children in the primary care setting	Expert Guidance: International and national laws and conventions, legal cases in the UK, ethical reasoning, review of literature, particularly: Alderson P and Montgomery J. Health Care Choices: making decisions with children. London: Institute of Public Policy Research, 1996. British Medical Association. Consent, Rights and Choices in Health Care for Children and Young People. London: BMJ Books, 2001, p.4.	Q2

Draus, 2017	US	A multidisciplinary child protection team improves the care of nonaccidental trauma patients	Quantitative: Retrospectively reviewed minutes of CPT meetings; tracked attendance, cases reviewed, process improvement projects, and corrective action plans. Suspected NAT patients (N=141); reviewed during CPT meetings (n=96; 68.1%); trauma registry (n=87); children who were either admitted to the pediatric hospitalist service or discharged from the emergency room (n=54). Defined suspected NAT victims as pediatric trauma patients (age <15 years) for whom a CPS referral was made due to the circumstances of their injuries.	Q4
Elmqvist, 2015	US	Review of Children's Advocacy Centers' (CACs) response to cases of child maltreatment in the United States	Literature Review: Review of literature on CAC's in the United States.	Q10
Flaherty, 2008	US	Telling their stories: Primary care practitioners' experience evaluating and reporting injuries caused by child abuse	Qualitative: Focus group (n=6); Hispanic (n=2), and White non-Hispanic (n=4) conducted with primary care physicians about their experiences in identifying and reporting injuries caused by physical abuse.	Q10
Flaherty & Sage 2005	US	Barriers to physician identification and reporting of child abuse	Expert Guidance: Recommendations based on author experience and previous research.	Q10
Flemington, 2016	Vietnam	Building workforce capacity to detect and respond to child abuse and neglect cases: A training intervention for staff working in emergency settings in Vietnam	Quantitative: Survey administered to total (n=116); females (n=88, 76%), males (n=24, 20.6%); nurses (n=61, 52.5%), doctors (n=29, 25%), and healthcare assistants (n= 21, 18.1%) before and after the training programme at 0 weeks, 6 weeks, and repeated at 6 months.	Q10
Gilbert et al., 2009	Multiple high-income countries	Recognising and responding to child maltreatment	Expert Guidance: Recommendations based on a literature review and policy recommendations. Includes comparison and discussion of different child maltreatment response systems and policies across several HIC.	Feasibility, Equity, and Context
Halileh, 2009	Palestine	Child abuse and neglect services in the occupied Palestinian territory	Quantitative: Telephone interviews were conducted with institutions (n=62) from the government, non-profit and private sectors that dealt with child abuse and neglect, to investigate the services available for abused and neglected children. Common types of abuse seen at these institutions were physical, psychological and sexual abuse.	Q8
Ho, 2015	US	Pediatric nurses' differentiations between acceptable and	Both: A descriptive cross-sectional study using Q methodology administered to pediatric nurses (n=48); females (n=45, 93.75%) from one urban medical center sorted statements (n=71) related	Q10

		unacceptable parent discipline behaviors: A Q-study	to the behavior or outcome of punishing a child via the Internet application FlashQ exploring what they view as acceptable and unacceptable parent discipline behaviors.	
Jones, 2008	US	Clinicians' description of factors influencing their reporting of suspected child abuse: Report of the child abuse reporting experience study research group	Both: A written survey (3 weeks after the patient's visit) and a telephone interview (6 weeks after the visit) conducted with pediatric primary care clinicians (N=434; selected n=81; completed n=75; gender not specified) who participated in the Child Abuse Reporting Experience Study and who indicated they had provided care for a child with an injury they perceived as suspicious.	Q10
Jones, 2017	US	Enablers of help-seeking for deaf and disabled children following abuse and barriers to protection: a qualitative study	Qualitative: Semi-structured interviews conducted with deaf and disabled people (n=10; n=3; males; n=7; females) about their experiences regarding help-seeking following maltreatment.; participants were children aged 12 or 13 (n=3); between 18 and 25 (n=2); over 25 (n=5); experienced sexual abuse (n=7), physical abuse (n=6), emotional abuse (n=5), neglect (n=5).	Q8
Kalnins, 2002	Latvia	Latvian community nurses practising in a time of turmoil: A thin line of defence for children at risk	Qualitative: Interviews conducted individually (n=17) and as a group (n=5) with community nurses (n=17) from different types of agencies- (n=1) primary care clinic, (n=2) traditional childrens' polyclinics, and (n=2) church sponsored community health and social centres. Also, observed field visits with nurse (n=13) visiting families (n= 1 or 2, to up to 7 per nurse)	Q7, Q8
Kobayashi, 2001	Japan	Infant abuse in Osaka: Health center activities from 1988 to 1999	Quantitative: Surveys performed on abused children under 18 years of age in 1996 (n=130), and in 1999 (n=215) about their activity of Health Center, including help, means of involvement by health visitors.	Q5
Konijnendijk, 2017	The Netherlands	In-house consultation to support professionals' responses to child abuse and neglect: Determinants of professionals' use and the association with guideline adherence	Quantitative: Survey questionnaire administered with professionals (n=154; female, 95.5%); physicians (42.2%) specialized in public preventive health care for children (0–19 years old) measuring in-house consultation practices. Participants (57.8%) worked with children younger than 4 years of age, (28.1% worked with children of 4 years of age and older and (13.7%) provided services to children of all ages.	Q10
Laird, 2016	Five sub-Saharan countries in Africa	Protecting children from nutritional and medical neglect in sub-Saharan Africa: A five-country study	Expert Guidance: Recommendations based on review and discussion of child neglect legislation and policy in five countries in sub-Saharan Africa.	Feasibility, Equity, and Context
Lee, 2008	Korea	Diagnostic Evaluation of Physical Abuse in Children	Expert Guidance: Recommendations based on author's clinical experience.	Q1, Q6

Leite, 2006	Brazil	Notificação de maus-tratos infantis: necessidade de educação médica continuada	Quantitative: Review of number of notifications to the Hospital Child Protection Service on the Rights of the Child by first- and second-year pediatric physician residents (n=25; gender not specified) before, during, and after taking a professional qualification course on diagnosis and reporting of child maltreatment cases.	Q10
Leite, 2016	Brazil	Coping with domestic violence against children and adolescents from the perspective of primary care nurses	Qualitative: Semi-structured interviews conducted with female primary care nurses (n=5) at five different family health centers in Sao Paulo about their experiences working with child and adolescent victims of domestic violence.	Q7, Q10
Lewington, 2013	US	The experience of paediatric residents participating in a child protection rotation: A qualitative study	Qualitative: Open-ended, semi-structured interviews conducted with pediatric residents (n=8, gender not specified) following their CPT rotation about their experience.	Q7
Lewis, 2015	UK	Working together to identify child maltreatment: Social work and acute healthcare	Both: Online survey administered with senior practitioners (n=38) in acute trusts and social work services, and Semi-structured interviews (n=29; by telephone, n=27; face-to-face, n=2) conducted with LA staff (n=12), mostly social work team managers, services managers or Heads of Safeguarding; and acute trust staff (n=17): most were Named Nurses, with some Named Midwives and Doctors, and staff in other safeguarding roles.; developing case studies (n=12); involving LA and acute trust (n=10);acute trust only(n=2) about joint working.	Q5
Molyneux, et al., 2013	Malawi	Sexual abuse of children in low-income settings: Time for action	Expert Guidance: Recommendations based on literature review regarding child sexual abuse in sub-Saharan Africa, and a case study of a “one-stop center” in Malawi.	Feasibility, Equity, and Context
Orhon, 2006	Turkey	Attitudes of Turkish parents, pediatric residents, and medical students toward child disciplinary practices	Quantitative: Survey administered to pediatric residents (n=39; 80% female), medical students (n=106; 48% female), and parents of children ages 1-5 (n=65; 37% female) measuring attitudes towards childhood disciplinary methods (including some which should be reported as abuse) and abusive childhood experiences.	Q10
Rowse, 2009	UK	Support needs of children's nurses involved in child protection cases	Qualitative: Semi-structured interviews conducted with nurses (n=15) working in a hospital paediatric department, who had direct involvement in child protection cases, about their support needs.	Q7
Sabale, 2014	India	Comprehensive care for victims of child abuse-multi disciplinary child	Qualitative: Observed the (n=61) cases of child abuse (n=61) and (n=511) cases of age verification of children who were rescued from exploitative conditions such as prostitution and child labour,	Q5, Q8

		protection center (MCPC) in Mumbai, India	handled by MCPC during the period of 3 years (2006-2009) assessing the multi system approach providing comprehensive care for victims.	
Sidebotham, 2007	UK	Child protection procedures in emergency departments	Qualitative: Questionnaire administered with lead nurse/consultant of EDs (n=81) in England and (n=20) in Northern Ireland about their procedures for child protection.	Q10
Svärd, 2017	Sweden	“Why don’t they Report?” Hospital Personnel Working with Children at Risk	Quantitative: Questionnaire administered to physicians (n=72), nurses (n=119), nurse assistant (n=70), hospital social workers (n=34) working in inpatient wards at four largest children's university hospital about their reporting experience. (Gender not specified)	Q10
Tien, 2002	US	What is the system of care for abused and neglected children in children's institutions?	Quantitative: Survey administered child abuse contact representatives (N=157; excluded n=12). The response rate was 84% (122/145); eligible institutions (n=122); identified by NACHRI. NACHRI is a not-for-profit organization of children’s hospitals, large pediatric units of medical centers, and related health systems.	Q10
Tiyyagura, 2015	US	Barriers and facilitators to detecting child abuse and neglect in general emergency departments	Qualitative: Semi structured interviews with medical providers (N=29, gender not specified); emergency physicians (n=9), ED nurses(n=16), and ED physician assistants (n=4) at 3 general EDs, exploring experiences with child abuse and neglect.	Q10
Van Bogaert, 2013	South Africa	Ethics and medicine: revisiting the Children’s Act and the implications for healthcare practitioners	Expert Guidance: Information on and discussion of South Africa’s Children’s Act of (enacted in 2010), ethical reasoning	Q2
van der Put, 2015	Multiple High-income	Predictive validity of various types of assessment tools for child maltreatment	Literature Review: Review of literature on various assessment tools for child maltreatment [data taken from Introduction/ Literature review only]	Q9
van der Put, 2017	Multiple High-income	Predicting child maltreatment: A meta-analysis of the predictive validity of risk assessment instruments	Literature Review (meta-analysis): 27 instruments (30 studies) used in child protection from all high-income countries; examined predictive validity of risk assessment instruments for child maltreatment	Q9
Vitale, 2010	US	Evaluation of the siblings of physically abused children: A comparison of child protective services caseworkers and child abuse physicians	Quantitative: Survey administered to CPS case workers (N=112); respondents (n=96); females (75%), and CAP (N=153); respondents (n=93); females (52%) comparing their beliefs and practices on the evaluation and medical management of CC. Work experience: CPS case workers 2-10 yrs (44%), evaluated 11 and 50 cases of physical abuse in the past year (40%); CAP at least 10 yrs (68%), evaluated more than 50 cases of physical abuse annually (45%).	Q5

Wirtz, 2016	Latin American and Caribbean countries	Violence against children in Latin America and Caribbean countries: a comprehensive review of national health sector efforts in prevention and response	Literature Review: Review of national health sector protocols and literature from Latin American and Caribbean countries	Feasibility, Equity, and Context
Woodman, 2013	UK	Responses to concerns about child maltreatment: A qualitative study of GPs in England	Qualitative: In-depth, face to face interviews conducted with GPs (n=14), practice nurses (n=2) and health visitors (n=2) from GP practices (n=4) with at least 1 'expert' GP (expertise in child safeguarding/protection) about their responses to concerns related to child maltreatment.	Q6, Q8, Q10

Annex 3: Document and Article Information Summaries by Question

Table 18: Findings from literature relevant to Q1

Article	Key Findings
<i>Pre-Identified Literature</i>	
IRC, 2012	Both child and caregivers must be informed of available health services and given a choice to receive services.
NICE, 2017 (Expert guidance from young people's expert reference group & NICE guideline committee)	- some young people do not want to be touched; HCWs who need to touch YP should explain the process and obtain consent (if YP > 16 or Gillick competent) (<i>Rec 1.1.5</i>) - if YP does not agree, HCW should seek legal advice unless need for treatment is immediate - in all other cases, respect YP's request to not touch them - HCWs should involve YP in decision-making "to the fullest extent possible depending on their age and developmental stage" (<i>Rec 1.1.1</i>) - Importance of trust - HCW should always do what they say they are going to do, and if this isn't possible, explain why and offer alternatives as soon as possible (<i>Rec 1.1.8</i>) HCW should always explain to YP how they will work together (including timeframe) and ensure YP doesn't have unrealistic expectations (<i>Rec 1.1.9</i>)
NICE, 2017	HCWs should directly speak to and observe children and young people in assessing child abuse and neglect

(ES127)	
NICE, 2017 (ES154)	HCWs should be sensitive to how difficult the experience is for YP and think through every aspect of their interaction.
Scott et al., 2017	● Importance of conducting a holistic assessment of the child's physical and emotional wellbeing and healthcare needs ○ Exam should be viewed as an opportunity for reassurance and initial step towards healing ○ Providers should be aware that the majority of physical exam findings following sexual abuse are normal, and that this does not indicate that the alleged abuse did not occur ○ Unmet health needs may be as, if not more, common as forensic findings for alleged survivors of sexual abuse ● Importance of timely examination ○ There is strong evidence for a timely exam for both health needs and forensic findings ○ Some documentation that caregivers were concerned about long delays ○ Exam serves as a reassurance an initial step towards healing ● Importance of taking steps to minimize patients' and caregivers' fear and distress, including respecting patient autonomy ○ Child and adolescent sexual assault survivors value feeling informed about the exam and about what to expect ○ Lack of knowledge can contribute to elevated fear and distress ● Importance that survivors are able to exercise choice, feel control ○ Adolescents valued when nurse examiner spoke with them about "everyday" topics ● Importance of using appropriate examination instrumentation and examination positions ○ Use of colposcope was not a source of pain or distress for children ○ Limited literature on patient comfort levels or preferences regarding other instrumentation or positions ● Importance of collecting DNA evidence from clothes and bedding, and from body only if appropriate

	- o Collecting DNA evidence on children's bodies very unlikely if they have bathed, are under 10, or if they are being examined more than 24 hours after the assault - o Forensic evidence can often be obtained from clothing and bed linens even up to several days after an assault. - o Forensic swabbing of the genital area could increase children's distress levels - o Should be avoided if the likelihood of obtaining identifiable DNA is low • There is evidence from low-income settings indicating that health care workers require extensive training, ongoing support, and improved provision of resources to provide high quality examinations
WHO, 2009	The space where physical examination and forensic screening will take place should have supportive environment in terms of confidentiality, and availability of clinical guidelines and protocols
WHO, 2015 (Medico-legal policy note)	The type of forensic evidence that will be collected depends on time that has passed since the incident, specifics of the incident, and the capacity of the system to collect, store, analyse, and use the evidence. Therefore, HW should only collect what is appropriate and possible in that particular setting.
WHO, 2015 (Background paper for medico-legal toolkit)	• The type of forensic evidence that will be collected depends on time that has passed since the incident, specifics of the incident, and the capacity of the system to collect, store, analyse, and use the evidence. Therefore, HW should only collect what is appropriate and possible in that particular setting. • Health workers' role is not to determine if sexual violence has occurred or not • The safety of survivor must be given utmost importance, even over forensic evidence collection. • Respect the wishes of the survivor • Collection of forensic evidence for sexual violence must be conducted in a safe and private space for both survivor and collector. • A shared understanding of what counts as a forensic evidence to be presented at the court or tribunal will help FLWs to understand what to collect. • A place of safe and systematized storage of forensic evidence should be arranged before collecting forensic evidence.
WHO, 2015 (Strengthening the medico-legal)	• Victim has the right to choose the sex of the forensic examiner and other professional providing services. • Victim has the right to choose what care he/she receives

response to sexual violence)	• Understand the importance of prioritizing the well-being and safety of the victim over anything else, including collection of medico-legal evidence. • Make sure that the immediate environment is secure and private. • Offer emotional and social support during the process. • A child should never be examined against his or her will unless the examination is essential for the provision of health care. • A small child can be examined on her or his mother's lap. • Older children should be offered a choice (sitting on a chair, on mother's lap, on bed). • Health workers (and others) should not conduct virginity examinations or hymenal reconstruction for suspected cases of sexual violence. • Do not use speculum to examine pre-pubertal girls. It is painful and may cause injury. • Do not carry out a digital examination on a child to assess anal sphincter tone - this assessment has no validity. • Do not collect forensic evidence unless it can be stored securely and there are systems accessible for their analysis. • Examination room should be private, quiet, accessible, clean, examination table, and light (preferably fixed) with access to toilet or latrine. • Before commencing the examination: ○ Ensure that the examination room is clear and secure. ○ All the relevant equipment is accessible. • Address any HIV and other sexually transmitted infections. Recommend prophylaxis and subsequent reviews. • Provide sensitive and specific explanation and consent before any genital or anal examination. • Inform what to do if any injuries will become more visible after some days. • Health worker should not make any comment if the sexual violence being examined was consensual or otherwise. • The account of the sexual assault dictates whether and what specimen are collected.
<i>Identified Via Literature Search</i>	
Aggarwal et al., 2009	Paediatrician's response should be child-centered and child-friendly, with safety of child being paramount. A child-friendly environment is one that is sensitive to the needs of the child and in which the child feels comfortable, relaxed, and able to express him/herself. Exam should follow same basic principles as any medical exam, but requires special expertise (derived from training and regular updating of skills). Consent of parent and/or child required before exam. Child may choose

	to be examined by doctor of same sex, and to have a trustworthy adult present. Physician should record any resistance to the exam by the child and the general demeanor of child. All injuries should be marked on anatomical diagrams. The risk of STIs should be addressed.
Lee, 2008	When a child presents with injuries, ask the child for an explanation before asking parents, if the child can speak. If the parents are suspected of being abusers, obtain their permission to interview the child separately. While assessing child, carefully observe parents' behavior and family interrelationships, which can aid in detecting abuse.

Table 19: Findings from literature relevant to Q2

Article	Key Findings
<i>Pre-Identified Literature</i>	
IRC, 2012	• Obtain assent from children above 7 for permission to speak with them. • Inform about the mandatory reporting policies and laws in place and practiced to the child and caregiver while obtaining informed consent. ○ Explain what information is being reported to which agency and the consequences of report and child's and family's rights in the process. • Before sharing the information with another service provider, discuss the timeline with the child and family and mutually agree on timeline and process, as long as the timeline and process requested by the child and/or family do not hinder the investigation or place the child at risk. ○ Discuss the scope of information that can be shared with various referral agencies and providers with the child and caregiver. • Learn about specific circumstances when confidentiality and informed consent might need to be violated such as when caring for children and adolescents at-risk for suicide. • If the caregiver is suspected to be perpetrator, find another responsible and safe adult who can provide information about the child. This person could be someone who brought the child to receive care. • If the person who brought the child is not caregiver, and locate the caregiver and obtain their consent before starting the assessment. • Caregiver and the provider should agree on a mutual decision regarding child treatment and safety plan; however, if the service provider feels caregiver's decision is against child's safety, then consult with supervisors before intervening against caregiver's wishes.
NICE, 2017	In all conversations with children and young people:

(Expert guidance from young people's expert reference group)	• explain confidentiality and when you might need to share specific information, and with whom - • be sensitive and empathetic • listen actively and use open questions • find out their views and wishes • use plain language and explain any technical terms • work at the child or young person's pace • give them opportunities to stop the conversation or leave the room, and follow up if this does happen • explain what will happen next and when.
NICE, 2017 (ES154)	HCWs should be sensitive to how difficult the experience is for YP and think through every aspect of their interaction.
NICE, 2017 (Rec.'s for using Gillick compet. & 1.1.1 based on consensus of guideline committee, not specific research)	• NICE guidelines recommend Gillick competency (although not clear where derived from?): "A child under 16 is said to be Gillick competent if they are judged to have sufficient intelligence and understanding to consent to, or refuse to consent to, medical treatment, which includes the prescription of contraception. Additional consent by a parent or person with parental responsibility is not required." • Consistent with <i>Rec 1.1.1</i>: "Take a child-centred approach to all work with children and young people; involve them in decision-making to the fullest extent possible depending on their age and developmental stage."
WHO, 2009	• Maintain absolute confidentiality; information should be shared with another professional only if there is a real risk of life of a child being maltreated or the child discloses that he or she intends to harm or kill someone else. • While obtaining consent is always preferable, sometimes it may be necessary to report without person's consent if someone's life is in danger. • Child should always be informed what information is being shared, with whom and why.
WHO, 2015	• Victims should be informed of every step of medical process (examination, collection of specimen or photography), so they can consent each part, and are prepared to make informed decisions.

(Strengthening the Medico-legal Response to Sexual Violence)	• Victim’s wishes and rights must be respected. Victim must be informed of his/her options and be able to exercise her/his autonomy to make informed choices. • If there are mandatory reporting requirement in the settings, this information must be disclosed to parent/guardian and child during the informed consent process. [verbatim] • Informed consent must be provided by a parent or guardian unless local laws state otherwise. Children who are developmentally able to understand the nature of the medico-legal process should be provided with information and given the opportunity to provide their informed assent. • Determine provision of local laws, culture, and security of the context to obtain consent from adolescent. • Obtain consent for each procedure (and particularly genital examination), release of findings and specimens, and photography separately. - o Allow the victim to consent to some aspects and not others, and withdraw consent at any time. • Consent should be documented by signature or fingerprint.
<i>Identified Via Literature Search</i>	
de Zulueta, 2010	Empirical evidence suggests children are often more competent than assumed. Argues for shared decision-making with parents and family-centered rather than adversarial legalistic approach. Capacity is defined as being able to (consistent with Gillick competency): • Understand and retain info relevant to the decision • Use or “weigh up” the information • Communication the decision Gillick competent minor is entitled to same rights as adult in terms of consent and confidentiality. However, confidentiality may be over-riden by professional if disclosure is against the public interest, necessary to protect child from harm (including maltreatment) or death, or if child is at risk of behaviors that could put him/herself or others at risk. In addition, definition of competence is subjective and not clear. Practitioner decisions on child’s Gillick competence often focus on protecting doctors rather than being child-centered and protecting child’s rights. Author argues for a shared decision-making model in which children can take part in decision-making even if not Gillick competent, rather than having an all-or-nothing view of decision-making. Children can be helped to develop competence by involving them from an early stage in decision-making. Alderson & Montgomery (1996): Argue children should be presumed competent for some procedures from age of 5, and recommend children be given info through a variety of methods (drawing, books, toys). Propose that onus should be on adult to prove that child is not competent, rather than child having to prove competence, in order to prevent professionals from “following their instincts” without evidence.

	Consent is a process and may require multiple discussions and conversations. Assent empowers children to the extent of their capacity and includes: • Helping child to achieve developmentally appropriate awareness of what to expect in health care setting • Evaluating child’s understanding and factors which may be influencing him/her • Gaining willingness of child to accept care “without deception or coercion” “Best interest” is particularly relevant as a threshold for intervention in cases of abuse and neglect when parental choices endanger a child, and to determine an acceptable standard of parenting. British Medical Association sets out points to consider when deciding on best interests [verbatim]: • patient’s ability to participate in decision making • physical and psychological needs • risks of harm to family • views of parents and (no) treatment • implications for family or cultural background • patient’s religious or effectiveness of treatments • evidence of patient’s future opportunities • maximising patient’s future opportunities • risks from delayed treatment or non-treatment. If there is disagreement between doctors and parents, a conversational, non-adversarial approach is favored, with legal measures only as last resort.
van Bogaert, D	Capacity of a child to make decisions is based on his or her ability to understand, keep in mind, and evaluate his or her decision. Thus the health worker should not make the child’s conclusion about a treatment or procedure the primary focus, but should view the child’s reasoning in reaching this conclusion as key to understanding his or her mental capacity.

Table 20: Findings from literature relevant to Q3

Article	Key Findings

Pre-Identified Literature

IRC, 2012	● Ensuring the child’s understanding and obtaining permission ○ Obtain “assent” from children above the age of seven before speaking. ○ Interviewers should explain who they are and why they want to speak to the child ○ Interviewers should explain the purpose of the interview, what will be asked, and what is happening at each step of the process ○ Interviewers should explain to children what their rights are and obtain permission from the child and caregivers prior to talking about sexual abuse ● Being reassuring, supportive, and building rapport ○ Interviewers should indicate that they believe the child, reassure them that they are not at fault, and encourage them to share their experiences ○ Interviewers should monitor their own non-verbal communication to ensure that they are expressing interest in the child and not inadvertently communicating fear or disapproval ○ Interviewers should sit at the same height as the child and keep their eyes aligned with the child to maintain a sense of equality and respect ○ Particularly for adolescents, building rapport and trust is important for promoting communication ● Not forcing the child to speak or repeat themselves multiple times ○ Interviewers should not force the child to speak or to answer questions that they are not ready to answer ○ Interviewers should monitor children’s non-verbal communication and take a break or end the interview if the child appears distressed ● Adapting the interview length and questions to the child’s age ○ Interviews should be kept shorter for younger children ○ Very young children (below 6) should not be asked directly about abuse, instead non-offending caregivers and other adults in the child’s life should be asked for information ● Using a safe and child-friendly location ○ Interviews should be conducted in a space that is private and quiet ○ Interviews should be conducted away from the person suspected of abuse, and anyone the child does not trust ○ Interviews should be conducted in space with child-friendly materials like toys and comfortable seating

	- o Interviewers may need to identify and address urgent medical or safety issues before the child feels safe to disclose information about the abuse. ● Involving appropriate people based on child's wishes - o Only female providers and interpreters should be present when interviewing girls; boys should be given a choice of whether they would prefer to speak with a male or a female. - o Children, especially young children and children who are afraid of the service provider, should always be given the option of having a trusted adult (not an expected perpetrator) present during the interview as long as the child request that adult to be present. - o If a child hesitates to speak in front of a parent or a guardian, please the parent or guardian to leave. - o If a child hesitates to speak with the interviewer, find out what is causing the discomfort and provide option to choose another interviewer if possible. ● Children from 10-18 years old can be interviewed directly by the service provider. ● Open-ended questions can produce important information about sexual assault. ● Children with physical or mental disabilities (for example, deaf and mute) who are suspected or confirmed to have been sexually abuse will not benefit from verbal interview. - o Identify and obtain information from the child's caregiver (a person that the child seems to know and trust). - o Communicate care and comfort to the child using non-verbal communication techniques (for example, smiling). - o Use dolls, toys and other art materials to allow the child to communicate freely if available.
NICE, 2017 (Cossar 2011 +; Rees 2010 +; Richardson-Foster 2012 +; Stanley 2009)- <i>[statement from all studies unless noted]</i>	HCWs should: ● be knowledgeable about child development and impact of abuse and maltreatment ● have good communication skills, listen, and validate YP ● acknowledge, with sensitivity, the difficulty of the YP's experience ● share and discuss reports or assessment with the YP (Cossar 2011) ● make their role clear (Rees 2010) HCWs should NOT: ● require YP to repeat their story

	• give “false expectations about what might happen” or fail to keep promises
NICE, 2017 (Expert guidance from young people’s expert reference group)	<i>[Recommendation 1.1.3 verbatim; codes given in bold caps are my additions]</i> In all conversations with children and young people: • explain confidentiality and when you might need to share specific information, and with whom • be sensitive and empathetic • listen actively and use open questions • find out their views and wishes • use plain language and explain any technical terms • work at the child or young person’s pace • give them opportunities to stop the conversation or leave the room, and follow up if this does happen • explain what will happen next and when.
NICE, 2017 (Expert guidance from young people’s expert reference group & NICE guideline committee, ES140)	Ensure YP is comfortable with the environment in which interview is held and ensure privacy (<i>Rec 1.1.4</i>) <u>ES140:</u> • HCWs should build a supportive relationship with YP • HCW should ask YP about abuse, being persistent if needed • A “safe space” should be provided (in which YP is protected from abuser), should be “comfortable surroundings”
NICE, 2017 (ES127)	When assessing a YP for abuse and neglect, HCWs should: <i>[Rec 1.3.3]</i> • observe the child or young person • communicate directly with them • explore in a non-leading way any presenting signs of child abuse and neglect. • not rely solely on information from the parent or carer in an assessment
NICE, 2017	When assessing a YP for abuse and neglect, HCWs should also: <i>[Rec 1.3.4]</i>

(YP expert reference group, ES127)	• keep them involved and informed at every stage of assessment and decision-making • tailor communication to their specific needs • reinforce that they have a right to talk about any abuse or neglect and to seek help
NICE, 2017 (ES136 & ES137)	Two poor-quality Israeli studies gave evidence that 1) use of a structured interviewing protocol in cases of suspected sexual abuse led to more accurate identification of ‘plausible’ and ‘implausible’ accounts (Hershkowitz et al. 2007; ES136) and 2) a revised protocol with greater emphasis on rapport building and non-suggestive support was associated with higher frequency of allegations by YP who had experienced sexual or physical abuse (Hershkowitz et al. 2014; ES137). Due to poor quality of evidence, these studies/ES’s did not produce Recommendations.
NICE, 2017 (ES162 [addresses disabled children], expert witness, guideline committee consensus)	<i>Rec. 1.1.2:</i> Interviewer should use range of methods (including drawing, books, activities) and tailor interview to: • YP’s age and development stage • any disabilities, if present • communication needs, including using communication aids and an interpreter (not a family member) if necessary
NICE, 2017 (Giligan & Akhtar, 2006)	In Asian communities, even if professional standards of confidentiality are met, victims and non-abusing parents may feel that the disclosure of sexual abuse is a public event.
NICE, 2017 (Tucker 2011)	HCWs should not allow the following factors to influence their perception of the YP’s account and treat it as not credible: • history of YP, factors such as YP having criminal record • YP’s family background • HCW’s reluctance to believe YP, “practising defensively” • perception that abuser could not have acted in that way due to relationship with YP
Scott et al., 2017	• Importance of building rapport ○ Providers should build rapport with children and adolescents prior to asking sensitive questions ○ Asking open-ended questions about the child/adolescent and about neutral events can be helpful for building rapport • Importance of taking a supportive and non-judgemental approach

- Supportive statements made by interviewer highly valued by survivors
 - Adolescent survivors valued that interviewers were non-judgemental and did not blame them
 - Sexually abused children and adolescents often do not display strong emotions during forensic interviews
- Importance of asking clear, open-ended questions and avoiding repetition
 - Ask clearly worded, open-ended questions
 - Check for understanding and explain questions as much as needed
 - Only repeat questions if necessary due to lack of understanding
 - Survivors prefer to only have to answer questions and provide information once.
 - Repeated questioning can be distressing
- Importance of using appropriate language and terminology, and training of interpreters if used
 - Interviews should be conducted in child or adolescent's language of preference
 - Interpreters must be well-trained on forensic interviewing
 - Giving choices about how to answer questions
 - Child and adolescent survivors prefer not be pushed to answer questions until they are comfortable
 - Children and adolescents appreciated being able to answer questions in non-verbal ways, such as by writing
- Creating a child-friendly environment
 - Allowing children or adolescents to engage in drawing during an interview was found to be beneficial
- Language and marginalization: translators or interviewers from the same community enables marginalized communities to access services
- Minimizing questioning must account for differential needs of forensic interview (legal requirements) and obtaining medical history
- Health workers need support and training to conduct interviews that promote well-being
- Creation of child-friendly spaces requires some resource inputs
- Interview guides to improve implementation

WHO, 2009	• Health workers should be prepared to provide emotional support during forensic interviewing by recognizing patient's resilience and expectation, and listening in non-judgemental way. • It is important to believe what is being reported by the patient, empathize, and not belittle person's experiences.
WHO, 2015 (Background paper for medico legal toolkit)	HCW should be able to conduct gender-sensitive interview to both male and female victims of sexual violence.
WHO, 2015 (Strengthening the Medico-legal Response to Sexual Violence)	• Health workers interacting with victims must be careful not to make promises and misrepresentation (particularly regarding security) that cannot be guaranteed. [Verbatim] • Victims should not be discriminated on any basis, including religion, race, sex, gender identity, age, ethnic group, profession, socioeconomic level, political affiliation or sexual orientation. ○ Health worker needs to respond to different needs and concerns of victims from different background. • If someone is willing to talk about what happened and is comfortable with the person hearing their account, it suggest that they trust the health worker with the information. It is essential for the health worker to respect and maintain that trust. • Provide a trained interpreter if needed and with the consent of the victim/survivor. [verbatim] • Ensure that victims have access to and choice of a same-sex interviewer. [verbatim] • Acknowledge the difficulty in telling the account, which will include embarrassment, fear and patchy recollections; and respect cultural, religious and ethnic sensitivities. [verbatim] • Ensure that the victim is comfortable speaking and is not doing so under coercion. [verbatim] ○ Allow the victim to tell her/his account when and how he/she wishes. ○ Respect her/his choice if she/he wishes to stop at any time. [Verbatim] • Offer emotional and social support during the process. [verbatim] • Communicate with victim in a non-judgemental and empathetic way.

	• Understand and respect the choices that a victim makes. • Interact with the victim in ways that minimizes further traumatization and harm. • Listen with empathy and allow a free narrative. • Only those who have specialized training and experience in working with children (e.g. child friendly communication) should conduct medico-legal interviewing to children. • Medico-legal evaluations should only be conducted on children if child-specific health and other services are accessible for referral.
<i>Identified Via Literature Search</i>	
Aggarwal et al., 2009	In taking medical history, health worker should interview child alone (apart from caregivers) if possible, tailor interview to child's development level, reduce repetition in interview, and in cases of severe abuse inform police of suspected diagnosis before informing parents. Health workers should seek detailed, verbatim account of incident from both caregiver and child, separately. Building rapport and interviewing skills are critical. Health worker should observe and record non-verbal communication such as mood, eye contact, etc. Interview should include family and social history, including state of relationships and conflict within family. Health worker should treat child with dignity and respect, listen carefully to all fears and concerns, display a sensitive and empathetic attitude, emphasize that child is believed, reassure the child and absolve feelings of blame or guilt. Health workers should explain to the child the existence of a medical, family, and social support system and teach "coping and assertive skills". Child's best interest is paramount. Short terms goals after ensuring child's safety are to provide emotional counseling and social support.
Jones, 2017	These data provided evidence that in some cases of abuse of deaf and/or disabled children, abuse was not detected by service providers because caregivers were relied on as interpreters and thus were able to conceal abuse. In the case of deaf and/or disabled children suspected to be victims of maltreatment, it is critical to provide a registered interpreter and not rely on caregivers to interpret.

Table 21: Findings from literature relevant to Q4

Article	Key Findings
<i>Pre-Identified Literature</i>	
IRC, 2012	• Injuries must be documented in detail. • Inform about the mandatory reporting policies and laws in place and practiced to the child and caregiver while obtaining informed consent.

	○ Explain what information is being reported to which agency and the consequences of report and child's and family's rights in the process. ○ Families and child cannot decide if reporting is made; but can participate in deciding how and when the reporting is done in the safest and most confidential way. ○ If child's safety is at risk, there are limits to confidentiality. ● Information collected from children should be used, shared, and stored in a confidential manner. ● Report only the minimal information required by the law within the specified time frame and document what is reported. ● Report cases of child sexual abuse as per the established protocol of reporting.
NICE, 2017 (Expert guidance from young people's expert reference group, ES153)	<i>Rec 1.1.6</i> Produce a written record of conversations with children and young people and check that they agree with these (this could include both of you signing the record). Ensure their words are accurately represented, using their actual words if possible. <i>Rec 1.1.7</i> Share reports and plans with the child or young person in a way that is appropriate to their age and understanding. The young people said that they would like to see documents about them, but also gave examples of occasions when they had found out information through reading reports which they had not previously known, or were not ready to hear. They talked about the importance of being able to see written records and reports that are about them. They also suggested that it might be helpful for young people and professionals to 'co-sign' reports to show that they both agree with the content. The guideline committee also acknowledged the importance of young people being able to see that they have been listened to.
NICE, 2017 (NICE guideline committee, ES179)	<i>Rec 1.1.14</i> Think critically and analytically about cases and do not rely solely on protocols, proformas and electronic recording systems to support your professional thinking and planning. The committee talked about the importance of critical and analytical thinking, but that this is not always supported or encouraged by the format of paper and electronic recording systems professionals are given to use.
Scott et al., 2017	● Importance of using a structured format for recording findings ○ Having a structured record format and providing staff with ongoing education and training on its use can improve the quality of document of interview, physical exam, and forensic findings and reduce the need for repeated examination ● Importance of taking photographs only after explaining how they will be used and requesting permission ○ Using photography can be valuable for legal purposes, peer review, and avoidance of repeat examinations ○ However, children, adolescents, and caregivers expressed concern over having photographs taken and who would view them ● Importance of recording child's statements verbatim

	○ Valuable for recording statements accurately in terms of preventing false allegations and supporting case outcomes ● Importance of including detailed descriptions of the child's symptoms and likely mechanism of injury ○ Complete medical records must be comprehensible to non-medical professionals ● Equity and human rights considerations: control over photographs of one's body; considering the importance of documentation for legal proceedings; recognizing that survivors have the right to justice (even if not all of them want or can achieve prosecution of perpetrators) ensuring correct documentation of the interview and exam and training for providers working at facilities accessed by the poor or marginalized is an issue of equity ● There are well-documented and successful efforts to improve documentation through provision of forms, and many forms exist that are available ● Ensuring correct documentation requires training and continuous supervision
WHO, 2009	● Health workers need to understand that accurate and meticulous documentation of abuse increase the likelihood that a perpetrator is brought to justice. ● Records containing documentation of abuse should be kept in a confidential environment, but easily accessible to professionals involved in survivor's care. ○ Unsafe records of abuse can create unintended harmful outcomes. ○ Medical records should not be accessible to the perpetrator or family members. ● Health worker should maintain proper documentation of disclosure, and referral. ● Health worker should document exact account of what is said and what is observed without interpreting what is said. ● Health worker should not report personal details that can help to identify him/her for any form of surveillance or monitoring.
WHO, 2015 (Background paper for medico legal toolkit)	Documentation needs may vary depending upon national laws of each country. It is essential for all national and international actors working in conflict-affected settings to be aware of national laws.
WHO, 2015 (Strengthening the Medico-legal Response to Sexual Violence)	● Understand that a victim has the right to decide who has access to her/his information ● Know the relevant principles, policies and laws that regulate confidentiality of consultations and records, including any mandatory reporting requirements. [Verbatim] ● Seek the victim's informed consent to document (in writing, photographs/videos, recording devices) the details she/he tells you and to hold this information securely until a later date.

- Explain why the information is being documented, how the information may be used and any limits to confidentiality.
- Stress the importance of being truthful and of the value of his/her account.
- It is not the role of health worker to make legal determinations. [verbatim]
- Allegations of sexual violence made by individuals (victims, family members or witness) should be documented at the time of allegation is made.
- The documentation should be hand written, typed or recorded (e.g. phone or computer) and signed and dated by the person doing it and by the victim. [verbatim]
- Try to capture the words/language used by the individual as comprehensively as possible.
- Clearly indicate the language used for the interview and whether an interpreter was used.
- Document all examination findings and any treatment initiated.
- If possible, photograph any injuries while ensuring confidentiality. Photographs of the breast(s) and genitalia should not be undertaken. [verbatim]
 - Ensure that the photographs do not allow direct identification of the individual.
 - Note when photograph was taken.
 - Use confidential code system to allow authorized staff to identify the individual.
- All the documents and evidence collected should be held securely with access to only authorized personnel.
- What to document?
 - Personal information (ideally supported by official identification papers) - name, address, telephone number, email address. How does the victim wish to be contacted?
 - Is she/he a victim or witness? Is she/he recounting the details of what happened to her/her or to another person (if the latter, then details of that other person should also be recorded)?
 - Setting of the assault - when, where, what time and date, how many times, were there any other witnesses (and if so, who), were any photographs or other recordings made?
 - Details of the assault - health worker should only focus on details relevant to the provision of medical care.
 - Specific information about perpetrators for the purpose of legal processes should be gathered by trained investigators.
 - As many details as possible about what happened before, during and after the assault.

	○ All recent and old injuries should be recorded and described in detail. ○ Document negative finding whenever indicated. ○ Sites examined and not examined should be documented. ● All the specimen collected should be carefully labelled. ● Document transfer of specimens (chain of custody): what, to whom and when transfer occurred.
<i>Identified Via Literature Search</i>	
Aggarwal et al., 2009	Documentation should be “impeccable” to avoid professional litigation. Exam(s) should be documented in special forms, and repeated interviews avoided. Documentation should include handwritten notes with diagrams and body charts, and photographic documentation should be included if possible. Documentation should be “accurate, impartial, objective, and scientific.”
Draus, 2017	Creation of an interdisciplinary child protection team and enactment of documentation protocols (as well as monitoring and enforcement) improved documentation practices for child maltreatment cases in a hospital in Kentucky.

Table 22: Findings from literature relevant to Q5

Article	Key Findings
<i>Pre-Identified Literature</i>	
D’andrade, 2008	● Safety plan should involve consideration of when the subsequent maltreatment is likely to re-occur after the initial incident. ○ Maltreatment is likely to re-occur within few days of initial incidence than after several weeks.
Davies, 2012	● Scope of health workers role in safety plan might be different according to the design of the health system. ○ Health worker might find it difficult to determine in a safety plan on when to take action for cases of emotional abuse and neglect which do not result in the situation of crisis, but are clearly abusive. ○ Health workers might find themselves just as referral agents. ○ Health workers who are involved in the assessment of maltreatment might find themselves disengaged from the safety planning after the initial assessment and medical treatment.

	○ Health workers should link/refer the child to designated services even though they are not confident about their effectiveness as such services are a step towards protecting the child and safeguarding the welfare of the child and family. ● Safety plan should give importance to the interest of the child than protecting parents' rights. ● Removing a (male) perpetrator is the best practice if maltreatment is linked with gender based violence.
IRC, 2012	● The most important questions to consider while developing the safety plan: ○ Is the child is safe from further maltreatment? Can the perpetrator access the child easily? ○ Can caregivers or will caregivers protect the child? ○ Does the child feel safe to return home? Is he/she fearful of any family members? ● People involvement in safety planning: ○ Children should always be given the opportunity to express their ideas and opinions regarding their own safety plan as per their level of maturity. Their wishes should be accommodated as much as possible in the safety plan. In cases, their wishes cannot be accommodated, children should be provided with reasons. ○ For cases of sexual abuse, child should be given opportunity to express his/her safety concerns at home in privacy or in presence of a selected parent/caregiver. ○ Parent, legal guardians, or non-offending caregivers should be involved in making safety plan for children as much as possible, unless the health worker suspects that they are among the perpetrators. ● If a health worker detects imminent threat of child's security, necessary arrangement should be made to secure child's safety immediately through involvement other agencies such as police, protection agencies, etc. before completing other necessary steps of mandatory reporting. ● Assess for co-occurrence of other kinds of maltreatment (domestic violence, physical abuse and/or serious neglect) in cases of child sexual abuse by a close male relative. Place safety plans accordingly if other types of maltreatment are also suspected. ● If the child, especially adolescent, is expressing suicidal thoughts, assess if he/she has the intention to act and provide necessary care. ● Document agreed upon safety plan. ● Safety plan should include follow-up time.
NICE, 2017	Confusion among practitioners between 'child in need' procedures and 'child protection' procedures as a continuum, leading to a substantial gulf in practitioners' approaches (Brandon et al. 2013 +). This can lead to a lack of attention to issues of protection when operating under child in need processes (Vincent and Petch 2012 +).

(Brandon et al. 2013+; Vincent & Petch 2012+)	
NICE, 2017 (Cossar et al. 2013+) (‘It takes a lot to build trust’ - Recognition and Telling: Developing earlier routes to help for children and young people.’)	This qualitative study investigated UK YP’s perceptions of abuse and neglect and of getting help. Relevant to Q5 is that children felt it was important they be listened to, that their words not be twisted, that they see reports and assessments about themselves (including child protection plans) and have the opportunity to give feedback, and not be asked questions in front of their parents.
NICE, 2017 (Children and young people’s expert reference group, ES153)	<i>Rec 1.1.7</i> Share reports and plans with the child or young person in a way that is appropriate to their age and understanding. <i>Rec 1.1.11</i> Agree with the child or young person how and when you will contact them, bearing in mind safety issues such as whether a perpetrator of abuse may have access to a young person’s phone. Agree what will happen if you contact them and they do not respond, for example following up with their nominated emergency contact. [The YP expert reference group felt that services must be aware of the role of technology in young people’s lives and now much of the abuse they experience also takes place via technology. Service providers should not assume that it will be safe to contact someone via phone/text/email.]
NICE, 2017 (ES181)	<i>Rec 1.5.1</i> After making a child protection referral: • do not relinquish responsibility for the referral • follow up the referral • ensure action takes place.
NICE, 2017 (NICE guideline committee & following ES’s: <i>Rec 1.3.7:</i> ES128, ES132 <i>Rec 1.3.8:</i> ES129	<i>Rec 1.3.7</i> Communicate concerns honestly to families about child abuse and neglect, taking into account confidentiality. Think about what information should be shared, and with whom, to avoiding placing the child at risk of further harm. [The guideline committee also thought it was important to balance being honest about concerns with issues of confidentiality, and also working with parents who may conceal aspects of their behaviour.] <i>Rec 1.3.8</i> During assessment, focus primarily on the child’s needs but also remember to: ○ address both the strengths and weaknesses of parents and carers and acknowledge that parenting can change over time ○ focus attention equally on male and female parents and carers.

<i>Rec 1.3.9: ES130</i> <i>Rec 1.3.10: ES165)</i>	<i>Rec 1.3.9</i> Analyse the information collected during assessment and use it to develop a plan describing what services and support will be provided. This should be agreed with the child and their family (also see recommendation 1.1.6). Analysis should include evaluating the impact of any risk factors. [<i>Rec 1.3.9</i> supported by committee’s experience of practical challenges in relation to analysis of information gathered during assessment] <i>Rec 1.3.10</i> Organisations should ensure that practitioners conducting assessment in relation to abuse or neglect of disabled children or young people can access a specialist with knowledge about those children and young people’s specific needs and impairments.
NICE, 2017 (Rees et al. 2010+ (Safeguarding young people: Responding to young people 11 to 17 who are maltreated.)	This qualitative study of YP emphasized that the role of professionals in the safeguarding process should clearly be explained to YP.
WHO, 2009	• Safety plan can focus on the family as a unit to support parents and children at the same time. • A core group of health and social care professionals within the facility can be specially trained to develop safety plan and ensure continuity of care through timely follow-up. • While making safety plan for a child, health worker should always listen carefully to the details being report, and assess the risks and support available.
WHO, 2015 (Strengthening the medico-legal responses to sexual violence)	• National laws should be considered and respected for pregnancy prevention and management. • Address any HIV and other sexually transmitted infections. Recommend prophylaxis and subsequent reviews.
<i>Identified Via Literature Search</i>	
Aggarwal et al., 2009	In cases of severe abuse health worker should inform police of suspected diagnosis before informing parents. All abuse, especially sexual abuse, needs to be reported to the police. The health worker’s immediate goal should always be to ensure the child’s safety and provide emergency care if needed. Health worker should screen for co-occurrence of other types of maltreatment, and should also follow up after 2 weeks or earlier if necessary to reassess child and evaluate for recurrence of abuse.
Al-Saadoon, 2012	Given that there is no foster care system in Oman, it is particularly important to engage parents as part of the solution for safety after the child returns home, and for pediatricians to follow children closely after they return home.

Campbell, 2006	U.S. physicians unanimously endorsed medical evaluation of “contact children” (other children living in household with physically abused child), as they are also at high risk of abuse. Physicians disagreed about what evaluative measures and diagnostic tests were appropriate for contact children. Many physicians recalled abused contact children “missed” during initial evaluation of abused index child, or disagreements about child protective workers about need for medical examination of contact children.
Chung, 2002	Parents appreciated being involved in discussions involving planning for their child's safety. Results indicated the potential to promote more involvement of parents and to treat them as partners in safety planning. Non-offending parents should be permitted to attend safety planning conferences.
Kobayashi, 2001	Effective response to child abuse requires treatment of the child’s physical and psychological health, mental care for parents and tangible support for the demands of parenting, all undertaken in a concerted way.
Lewis, 2015	Health care providers and social workers emphasized the importance of close collaboration between medical and social work organizations in order to effectively respond to child maltreatment cases. Effective collaboration was characterized by the following: sharing decision-making about safeguarding of children; clearly defined roles for staff within each organization, including individuals designated to lead inter-organization communication about safeguarding; integration of processes and strategies and joint reflection and learning.
Sabale, 2014	Establishment of a Multi-disciplinary Child Protection Center (MDCP) in Mumbai created strong linkages between the health sector, child welfare department, the police, non-governmental organizations, and numerous other agencies relevant to child protection. This facilitates protection planning, and helps to ensure that abused and neglected children and adolescents receive the services and follow-up needed after initial medical care is provided. The article also notes that in India, cases of child abuse and neglect and cases of trafficking often overlap. Children and adolescents that have experienced sex-trafficking often cannot return to their homes, and therefore finding accommodations and linking adolescents with vocational training are important actions taken by the MDCP for protection.
Vitale, 2010	Caseworkers and physicians disagreed on the need for medical evaluations for the siblings of children who may have been mistreated, also referred to as contact children (CC). In most cases caseworkers felt that the home visit was more important for assessing risk to CC than a medical evaluation, while physicians indicated the need for medical evaluation in most cases. Both case workers and physicians recognized that CC were at greater risk for abuse. Decisions about evaluating CC are complex. Medical evaluation is essential in cases of unequivocal physical abuse, when the CC is a twin, or when the CC is very young. In other cases, for example in situations of neglect, a home visit may be much more important for assessing risk to CC.

Table 23: Findings from literature relevant to Q6

Article	Key Findings
<i>Pre-Identified Literature</i>	
IRC, 2012	Caregivers should be given an opportunity to speak openly (not in front of the child) about what they think about their child’s sexual abuse and how it will affect them.

NICE, 2017 (ES126, ES164)	<i>Rec 1.3.2</i> As part of the assessment, collect and analyse information about all significant people in the child's care environment. The assessment should include each person's: family, personal, social and health history, and experiences of being parented.
NICE, 2017 (ES128, ES132)	<i>Rec 1.3.7</i> Communicate concerns honestly to families about child abuse and neglect, taking into account confidentiality. Think about what information should be shared, and with whom, to avoid placing the child at risk of further harm. [The guideline committee also thought it was important to balance being honest about concerns with issues of confidentiality, and also working with parents who may conceal aspects of their behaviour.]
NICE, 2017 (ES129)	<i>Rec 1.3.8</i> During assessment, focus primarily on the child's needs but also remember to: address both the strengths and weaknesses of parents and carers and acknowledge that parenting can change over time focus attention equally on male and female parents and carers. [The committee also noted that assessments can sometimes be 'side-tracked' by a focus on parental difficulties and lose focus on the child.]
NICE, 2017 (ES130)	<i>Rec 1.3.9</i> Analyse the information collected during assessment and use it to develop a plan describing what services and support will be provided. This should be agreed with the child and their family (also see recommendation 1.1.6). Analysis should include evaluating the impact of any risk factors.
NICE, 2017 (Ghaffar (2012++)) <i>[Rec 1.1.12 was largely built on this article; additional themes in the article are highlighted here]</i>	Parents reported negative experiences when a professional held a stigmatising attitude towards them. The examples were generally directed towards social workers for making them feel stigmatised if they had a history of substance misuse. Most parents felt that social workers did not acknowledge the level of stress experienced during the assessment process. Families stated they concealed information from professionals for fear of consequences such as domestic abuse, mental health issues or drug taking, which might impact on the removal of their children. Parents were asked about their experiences of being part of case conference and child protection plan process. Many found the experience daunting and felt unable to present their perspective. Parents and caregivers have a varied experience of child protection procedures. Parents have a negative experience if the practitioner does not acknowledge the level of stress caused, and does not provide accessible information that parents understand.
NICE, 2017 (Gilligan & Akhtar (2006-))	In Asian communities, even if professional standards of confidentiality are met, victims and non-abusing parents may feel that the disclosure of sexual abuse is a public event
NICE, 2017 (NICE guidelines committee, ES19, ES20, ES128, ES132, ES158, ES160, ES161)	<i>Rec 1.1.12</i> Aim to build good working relationships with parents and carers to encourage their engagement and continued participation. This should involve: ● actively listening to them ● being open and honest

	• avoiding blame, even if parents may be responsible for the abuse or neglect • inviting, recognising and discussing any worries they have about specific interventions they will be offered • identifying what parents are currently doing well, and building on this • working in a way that enables trust to develop while maintaining professional boundaries • being reliable, and available as promised • keeping them informed, including explaining what information has been shared, and with whom • being clear about the issues and concerns that have led to your involvement • being clear about the legal context in which your involvement with them is taking place. [The NICE guidelines committee emphasized that professional judgement does need to be exercised - but families should not be made to feel 'judged' for their situation; thus rather than recommending a "non-judgmental" approach, the committee recommended not "blaming" parents.]
NICE, 2017 (NICE Guideline committee, ES128)	<i>Rec 1.3.1</i> Practitioners leading the assessment should ensure that all significant adults, children and young people in the family are involved. This means: finding out their views and wishes taking time to understand family relationships and dynamics. [The guideline committee noted that this would not be appropriate for some forms of abuse, as involving significant adults may mean involving the abuser, and alert them that their behaviour is under scrutiny. This could lead to negative consequences for the young person, or could obstruct evidence-gathering as part of bringing a criminal prosecution.]
NICE, 2017 (YP expert reference group, ES153, ES158)	<i>Rec 1.1.13</i> Coordinate your work with practitioners in other agencies so that children, young people, parents and carers do not need to give the same information repeatedly.
WHO, 2015 (Strengthening the medico-legal responses to sexual violence)	• Make sure that the guardian-support person understands the potential health consequences of the assault, the significance and possible side-effects of any interventions, and his/her options and rights to consent any treatment decisions.
Identified Via Literature Search	

Abu-Moghli, 2005	Nurses should always use a neutral approach when dealing with the family and avoid making accusations or judgmental statements even when he/she detects the parents/caregivers to be perpetrators. Nurses should be involved in direct interventions and counseling modalities with perpetrators individually or as members of an interdisciplinary health team.
Aggarwal et al., 2009	Health worker should maintain professional approach with family, explain reporting process and what parents can expect to happen, and use non-accusatory statements. Pediatrician's response to child abuse should be supportive of family as strengthening the family environment is usually the best option for child's long-term welfare (rather than removing child from home). Health worker should treat child and parents with dignity and respect, not make accusations, listen carefully, and display a sensitive and empathetic attitude. Questions should be open-ended and non-leading. Health worker should discuss current and future plan of action with non-offending caregiver, and should emphasize need for breaking contact between child and abuser.
Amaral, 2013	Health professionals expressed feelings of outrage toward the perpetrators of child maltreatment and an inability to understand how parents and other family members could harm children that depended on them for protection. The article notes the importance of health professionals understanding the social, economic, and cultural contextual factors that underlie abuse, and taking into consideration the reality in which families are embedded.
Chung, 2002	Findings indicated the need to clearly inform parents of their roles, rights, and responsibilities during each stage in the response to child maltreatment. Non-offending parents should be engaged as partners during the investigation and planning processes.
Lee, 2008	If the parents are suspected of being abusers, obtain their permission to interview the child separately. While assessing child, carefully observe parents' behavior and family interrelationships, which can aid in detecting abuse.
Woodman, 2013	In cases of neglect and/or emotional abuse which GPs did not feel met the threshold for social services involvement, GP frequently saw role as "coaching" caregivers through investing time in developing trust, carrying out motivational interviewing to achieve behavior change (frequently attempted and rarely achieved), and becoming a "trusted ally". GPs also recognized the danger of a possible negative effect of a trusting relationship with parents, if empathy for parents and "disguised compliance" by parents led the GP to overlook child maltreatment and the child's needs due to a focus on parental needs. Often GP intervention with parent focused on parents' risky choices, such as drug and alcohol use. GPs tended to intervene directly with parents when they perceived parents as incompetent and beset by multiple social and medical problems, rather than malicious. GPs sometimes leveraged influence through offering parents things that they wanted, such as help obtaining housing or other benefits.

Table 24: Findings from literature relevant to Q7

Article	Key Findings

Pre-Identified Literature	
IRC, 2012	Always share and discuss the care plan and care decisions with supervisor or someone from the team when caring for young people who are at heightened risk for suicide and suicidal behaviour
NICE, 2017 (NICE guideline committee, ES182)	<i>Rec 1.7.8</i> Organisations should support staff working with children and families at risk of or experiencing abuse, and ensure they have access to good quality supervision. This should include: ● case management ● reflective practice ● emotional support ● continuing professional development.
Scott et al., 2017	● Importance of training and ongoing support in the recognition and management of child sexual abuse for health workers ○ Providers were willing but lacked confidence, competence, and training ○ More experienced providers had improved abilities and training improved abilities ○ Effective strategies included self-study course training, continuing medical education, combinations of training and oversight during patient care, and quarterly review supervision ○ Providers needed ongoing support ● Importance of availability of sexual abuse medical evaluation experts ○ Providers/teams with specialized training in child sexual abuse care led to improved examinations, management, crisis intervention, and comprehensive medical services ○ Expert oversight to support non-experts in low-income settings ● Importance of adequate staff, supplies, and financing for health facilities ○ Major challenges in low-income countries included lack of financing, dependency on foreign funding, lack of human resources, and lack of supplies ● Importance of clear and systematic protocols for management of child and adolescent sexual abuse cases ○ Protocols improved thoroughness of response and documentation ● Importance of providing support for staff who manage child sexual assault

	- o Issues included burn-out or desensitization - o Support particularly needed for those who appear in court and who conduct forensic interviewing - o Desire expressed by health workers to work through difficult emotions involved ● It may be difficult to add training and resources needed to public healthcare facilities in low resource settings ● Emotional support needs of health workers may be met with locally feasible and culturally appropriate strategies
WHO, 2009	Health worker should not contact the disclosed perpetrator of violence (intimate partner) even if requested by the client as it might jeopardize the safety of health professional.
WHO, 2015 (Background paper for medico legal toolkit)	A safe and private space should be available to both survivor and collector while collecting forensic evidence for sexual violence.
<i>Identified Via Literature Search</i>	
Amaral, 2013	Health professionals working in the pediatric emergency unit experienced "intense emotional loads" and subsequent emotional distress as a result of their involvement in care for maltreated children. The article asserts that this distress could be alleviated by a work environment more conducive to the sharing of ideas and feelings, and by inter-disciplinary teams which share their experiences and engage in collective decision-making.
Bannwart, 2011	Pediatricians reported fearing physical and legal retribution from families if they reported abuse. Article notes the need for legal protections and greater professional secrecy to protect pediatricians who report abuse.
Kalnins, 2002	Latvian community nurses described experiencing emotional burnout due to witnessing children's suffering and feeling helpless to change the factors that placed children at risk of neglect. They noted that their relationships with colleagues were a crucial source of support when dealing with the emotional stresses of their work.
Leite, 2016	The Brazilian nurses interviewed in this study described experiencing emotional distress as a result of encountering child maltreatment cases, as well as fearing for their safety and that of their family if they reported cases to child protective services. Given that nurses lived in the same communities as the families they worked with, they were well known and knew they would be recognized if they filed a report as their name would appear on it.

Lewington, 2013	Medical residents doing a rotation in a hospital Child Protection Unit (where they daily dealt with cases of child abuse and neglect) reported coping strategies such as debriefing with co-workers, friends, or family members. More senior health workers may be able to model positive coping strategies by acknowledging residents' anger and sadness and initiating discussions about channeling these emotions towards positive outcomes.
Rowse, 2009	Nurses directly involved in child protection cases are deeply effected and need various forms of support. They expressed a need for informational support in making decisions, to help them understand the child protection process (thus alleviating the stress of not knowing what to expect), and to avoid mistakes which could result in negative repercussions to themselves or the child. Nurses especially needed "procedural support" in knowing what to expect when giving police testimony and appearing in court. Junior nurses are especially in need of support, both because they are inexperienced and because they have not had time to build trusting relationships with more senior staff that they can approach for information and support.

Table 25: Findings from literature relevant to Q8

Article	Key Findings
<i>Pre-Identified Literature</i>	
NICE, 2017 (ES18)	Rec 1.2.47 Ensure all practitioners working in primary care can recognise and respond to child abuse and neglect. Ways to achieve this include: <i>[obviously the "respond to" most applicable to our study]</i> • training newly qualified doctors in risk factors for abuse and neglect, such as parental mental health problems, alcohol and substance misuse (and providing top-up training sessions every 6 months) • giving information to parents and newly qualified practitioners, for example about local resources such as children's centres and parenting groups • completing a standardised questionnaire to screen for risk factors • providing access to a social worker where possible.
NICE, 2017 (NICE 8: 1. Brandon (2008+) 2. Cleaver (2004-) 3. Devaney (2013+) 4. Horwath (2005+)	Most closely related to Q8 are the following two NICE questions: • NICE 8. What aspects of professional practice support and hinder <u>effective assessment of risk and need</u> in relation to child abuse and neglect? • NICE 20. What aspects of professional practice and ways of working support and hinder <u>effective response</u> to children and young people who are experiencing, or have experienced, child abuse and neglect? 12 studies from the UK were found which addressed NICE 20; they contained the following themes: • continuity of professional involvement – where children and young people found a variation in the consistency of professional support

5. Ofsted (2014-) 6. Platt (2008-) 7. Robertson (2014-) 8. Selbie (2009+) 9. Vincent (2012+) <u>NICE 20:</u> 1. Beckett (2013++) 2. Children's Commissioner (2015-) 3. Cossar (2011+) 4. Franklin (2013+) 5. Harper (2005+) 6. Izzidien (2008-) 7. McGee (2002+) 8. Rees (2010+) 9. Richardson-Foster (2012+) 10. Smeaton (2013-) 11. Skinner (2009+) 12. Stanley (2010-)	- professionals' attitude towards children and young people – when negative professional–child relationship impacts on effective response - understanding of safeguarding role – young people expressed confusion over the professional role Effective professional response includes: - forming relationships with YP, being knowledgeable about child development and impact of maltreatment - good skills in communicating with YP, including speaking directly to YP - offering practical support to YP - acknowledge with sensitivity the difficult experience for the child McGee et al. (2002+) found that 11% of adult survivors of child abuse felt that medical professionals had made them feel 'responsible for their experience of sexual violence'.
NICE, 2017	Recommendations from YP expert reference group: Waiting rooms and services to be more welcoming and child friendly with relevant information about abuse/neglect.

(YP expert reference group)	2) The need for health practitioners to understand the dynamics of abuse (including emotional abuse and coercive control) rather than just focusing on physical health. 3) The crucial need for specific training for all professionals working with children to be better able to identify and respond to abuse and/or neglect and to be able to respond in a non-judgemental and empathic manner. 4) The overall importance of a trusting relationship in order to feel safe to tell people about abuse or neglect.
NICE, 2017 (YP reference group, ES140, ES152)	<i>Rec 1.7.1</i> Plan services in a way that enables children, young people, parents and carers to work with the same professionals over time where possible. [The YP reference group highlighted the issue of trust, and being able to see the same professional over time. The guideline committee highlighted that continuity of relationships is something that would need to be addressed in service planning rather than by individual practitioners.]
Scott et al., 2017	● Importance of improving public awareness of signs, risk and availability of services including community-based campaigns, outreach to parents, media campaigns, raising awareness in schools ○ Low levels of awareness among caregivers of signs and risks ○ Low rates of paediatrician involvement in informing caregivers, children and adolescents on normal sexuality and sexual abuse prevention ○ Lack of clarity about appropriate place to initiate services ● Importance of comprehensive care models ○ Specialized care (including provision of PEP) was associated with increased access to services in two low resource settings ● Importance of collaborating with communities, especially minority and marginalized ones, to develop culturally appropriate and welcoming services ○ Studies mentioned positive changes in attitudes and community dialogue ● Importance of reducing barriers to provision of care such as working with police to improve referral pathways to health workers ○ Healthcare providers may delay care waiting for police-related action first ○ Access to healthcare must be streamlined by having a unified approach among service providers and focusing on immediate access to healthcare ● Develop strategies to overcome inequities in access or exposure to programs, such as geographic, linguistic, or technological ● Equity promoted by provision of free PEP and other services

	Targeted, culturally appropriate engagement required with specific vulnerable populations
WHO, 2009	- Children living in households where domestic violence is occurring are not necessarily themselves abused Reporting all children in such households as being suspected cases of maltreatment might discourage people from disclosing violence intimate partner violence. Each case must be assessed individually in order to make a judgement. - Advocacy materials for family members including information on services available, location of the service, and issues of confidentiality could increase uptake of services. - Health worker should not take actions that will stigmatize a person suffering from violence.
WHO, 2015 (Strengthening the Medico-legal Response to Sexual Violence)	- Ensure that any medical, psychological and safety issues have been addressed. - Examination room should be private, quiet, accessible, clean, examination table, and light (preferably fixed) with access to toilet or latrine. - Refer the victim to other centres/services when more specialized interventions are required.
<i>Identified Via Literature Search</i>	
Al Eissa, 2010	Recognition and care-seeking for child abuse and neglect has increased dramatically in Saudi Arabia over the last two decades. This increase is likely due to sustained country-wide efforts to increase awareness of child abuse and neglect among the general public and among health professionals. These efforts include media campaigns that increased public attention towards children's rights, and the establishment of child protection centers within health centers throughout the country.
Ben-Arieh, 2006	Findings indicated differences in rates of child maltreatment cases in Israel between Jewish and Arab communities, with rates in Jewish communities significantly higher. However, this is likely due to lower service utilization/reporting in Arab communities due to less availability of social services in those areas, and lower investment in health and social services which results in them being lower quality and therefore less frequently used. The conservative and traditional nature of the Arab and ultraorthodox Jewish communities in Israel also likely plays a role, as these communities may be hesitant to involved "outsiders" in such issues. Study findings indicate the need for service providers to reach out to these minority communities in order to build trust and thereby increase service uptake.
Bridgewater, 2016	Argues that practitioners need to understand cultural context when dealing with issues of abuse and neglect and hold appropriate expectations of parents' perceptions of what constitutes maltreatment. In Kenya, sexual and physical violence against women and children are widespread and seen as acceptable by many women and men. Patriarchy and traditional values create a cultural system in which children are harshly physically disciplined by mothers and fathers, and a "culture of silence" regarding abuse, reinforced by the fact that children are not seen as reliable sources of information when it comes to reporting abuse. Author recommends educations programs and anti-oppressive practice (?) to overcome these negative cultural factors.
Cheung, 2005	Management of child abuse requires multidisciplinary action and sharing of information between social welfare, schools, police, and medical professionals. Health workers should contact government social welfare department or NGOs which deal with child abuse for advice about how to handle cases.

Child, 2014	In Uganda, 4 government systems are involved in child protection: justice, welfare, education, and health. This study found extremely low adequate follow-up to children's reports of physical and sexual violence; 20% of cases had some follow-up, but only 3.8% had adequate follow-up. Anecdotal, poor follow-up was due to economic factors, poor training, and competing caseloads, or that physical punishment (beatings) is seen as socially acceptable.
Halileh, 2009	Building awareness and professional capacity building of service providers to deal with sociocultural attitudes and practices that perpetrate child maltreatment or hinder services providers from taking actions that do not break the family system Establishing a platform of child abuse and neglect services and prevention activities under suitable government body that assists to prevent, identify, manage, and monitor child maltreatment will encourage service providers to take action.
Jones, 2017	These data provided evidence that in some cases of abuse of deaf and/or disabled children, abuse was not detected by service providers because caregivers were relied on as interpreters and thus were able to conceal abuse. In the case of deaf and/or disabled children suspected to be victims of maltreatment, it is critical to provide a registered interpreter and not rely on caregivers to interpret.
Kalnins, 2002	Latvian community nurses noted the importance of building trusting relationship with the families they worked with, particularly in cases where they were concerned that child neglect may be occurring. They explained how such relationships facilitated monitoring the wellbeing of children, and allowed them to link families with health and social services and encourage families to seek health services when the child's wellbeing was in danger.
Sabale, 2014	Establishment of a Multi-disciplinary Child Protection Center at a hospital in Mumbai increased access to the multiple types of service and care needed by abused and neglected children by housing them all in one location. The center was also able to serve as a place of referral for law enforcement agencies, non-governmental organizations, and other groups that encountered cases of child abuse and neglect.
Woodman, 2013	GPs sought to become "trusted allies" of parents and to use medical visits to meet broader needs (such as preventive or routine care for children at a visit for an adult's medical needs) and to assess the family's situation, including whether a referral to social services was warranted. GPs often had long-term relationships with families, and shared information with other practitioners in order to monitor families and situation of children. GPs most often referred families to pediatricians and social workers, but often mistrusted social services for either under-reacting (not properly assessing risk to children) or over-reacting (being heavy-handed and punitive), and reported lack of communication and appropriate feedback from social services.

Table 26: Findings from literature relevant to Q9

Article	Key Findings
<i>Pre-Identified Literature</i>	

Davies, 2012	● Current evidence base does not allow a reliable and accurate use of numerical scoring of relative risk (including risk of recurrence of abuse) using actuarial instruments. ● Individual cases of maltreatment are complex with unique risk factors and details that cannot be reflected in a numerical score or simple actuarial table; therefore, will be limited in their scope to evaluate individual cases. ● Actuarial instrument can be useful as a decision-making tool to develop valid estimate of future harm. ● It is important to explore qualitative information about each child's case before making decision based on mathematical score derived from actuarial instruments. ● An instrument to assess risk to infants was developed by the Significant Harm of Infants Study ○ Four-level index that predicts the likelihood of the babies suffering from harm ○ Developed utilizing inventory of risk and protective factors that have been associated with a greater or lesser likelihood of maltreatment or its recurrence ○ Classifies family at various risk category to predict their ability to provide a nurturing home within a child's timescale
D'andrade, 2008	● Consideration of use of both actuarial and consensus-based instruments: ○ The value of risk assessment only exists if it identified the likelihood of re-abuse given specific interventions since the provision of services may reduce risk. ○ Assessment instruments only focus on interpersonal factors of parents and rarely upon neighbourhood, community or societal factors that may be associated with maltreatment [VERBATIM] ○ Available research is very limited. ■ For any particular instrument, only a few studies available and sometime only a single study is available. ■ Research is often conducted by the researcher who developed the instrument, not independent researchers. ■ Current evidence base is more for the validity of instrument used for the initial investigation rather than for other case time points. ■ There is limited research that evaluates the quality and nature of the implementation process, and workers acceptance or resistance to the use of instruments.

- o Family's risk may change over time, it is important that risk be periodically reassessed. [VERBATIM]
 - Caseworkers have difficulty revising their assessment of families once they have been made.
 - Using the same instrument to assess risk at different case points may not accurately predict recurrence of maltreatment, as risk factors for maltreatment may change over time. [This seems to imply that instruments evaluate static risk factors which cannot change over time rather than dynamic risk factors, and per Van der Put et al. 2015 existing actuarial instruments do mainly assess static risk factors although there is no intrinsic reason they could not include dynamic risk factors.]
- o It is important to carefully assess each case as false negative can be dangerous to the child and false positives can result in poor targeting of available resources. [VERBATIM]
- o It is important to consider if the same instrument is valid for people of different racial/ethnic groups.
- o Providers should carefully consider what time period to use in measuring maltreatment recurrence (e.g. 30 days, 60 days, 6 months, or 12 months or longer).
- o There is a distinction between risk assessment and family assessment.
 - Risk assessment - estimate the likelihood of future incidents of maltreatment
 - Family assessment - identify and explore, in considerable depth, the unique complex of developmental and ecological factors in each family and their environment that may contribute to or mitigate maltreatment
- o Good clinical skills are required to use any instruments.
 - Numerous items of instruments need to be assigned a score using clinical judgement.
 - Clinicians can also override items based on family characteristics or dynamics not included on the actuarial instrument.
- o Instruments do not facilitate the clinical judgement of skilled health worker.
 - It only expands or enhances clinical judgement.
- o Studies have found that the use of both consensus- and actuarial- based instruments have resulted in fewer high risk children left at home to be re-abused.

- Features of Actuarial instruments in general:

- o Actuarial instruments are developed studying a sample of population, usually of a state or a county. For wider use of instrument outside of the geographic area where it was developed, It is important to consider if the sample used to develop the instrument represent the characteristics of typical population.
 - o Practitioners have the ability to override the risk rating by one level if required
- Examples of actuarial instruments utilized in the US:
 - o Structured Decision Making (SDM) developed by the Children’s Research Center (CRC)
 - Instruments are based upon the statistical association of variables with substantiated maltreatment injury, foster care placement, and reinvestigation within two years in each location
 - Categories families as low, medium, and high levels of risk of subsequent maltreatment
 - A number of studies have proved CRC risk assessment instruments to be of good predictive validity than consensus-based instrument
- Comparison of actuarial and consensus-based instruments:
 - o A study comparing several instruments at the same time found consensus-based instruments performed less effectively than the CRC actuarial instrument
- Consensus-based instruments
 - o Some instruments requires coders to use their judgment to assign the level of risk related to broad area of previous maltreatment
 - o Items on one instrument are often combined with items from another instrument, creating hybrid instruments that vary according to the needs or beliefs of the user. Sometimes factors are assessed numerically and families categorized by their total score. [Verbatim]
 - o Worker considers the area identified and codes it high, moderate or low risk based upon his or her judgment [verbatim]
 - o Very subjective in nature; requires coders to use their own judgement
 - o Variables are inconsistently used; same variables used to predict all kinds of maltreatment
 - o Studies have found consensus-based instruments to have variable or high inter-rater reliability.
- Examples of consensus-based instruments utilized in the US:
 - o CARF (Child At Risk Field System) system (Doueck et al., 1993)
 - Developed by ACTION for Child Protection

- This consensus-based instrument can be used throughout the life of a case.
 - It includes fourteen items within the following five domains: (1) child; (2) parent; (3) family; (4) maltreatment; and (5) intervention.
 - Four “qualifiers” are also to be considered: (1) duration of a negative influence; (2) pervasiveness of a negative influence; (3) acknowledgement by parents of a negative influence; and (4) control of the negative influence.
 - All types of maltreatment are considered together.
 - Each item or qualifier is rated on a four point scale; the average of the 14 items plus the average of the four qualifiers is summed and divided by 2 to arrive at a final risk score.
 - The family is then categorized into no risk, low risk, moderate risk, significant risk, or high risk groups.
- o WRAM (Washington Risk Assessment Matrix) (Camasso & Jagannathan, 1995)
- Developed by Washington State social service agency in 1986
 - Includes 37 items based on seven major domains: (1) child characteristics, (2) severity of abuse/neglect, (3) chronicity of abuse/neglect, (4) caretaker characteristics, (5) caretaker/child relationship, (6) socio-economic factors, and (7) perpetrator access
 - Workers assess and rate the level of risk that they perceive for each item on a five point scale.
 - Based on these ratings, families are categorized into risk levels.
 - Assesses risk of maltreatment in general rather than considering the risks for each kind of abuse (e.g., neglect, abuse, sexual abuse, etc.)
 - Used at the initial investigation stage
- o CFAFA (California Family Assessment Factor Analysis) or the “Fresno Model,” (Baird & Wagner, 2000)
- Derived from an instrument originally developed by the state of Illinois (the Child Abuse and Neglect Tracking System or CANTS 17B)
 - 23 items that fit within five theoretical domains: (1) precipitating incident, (2) child assessment, (3) caregiver assessment, (4) family assessment, and (5) family-agency interaction.
 - All types of maltreatment are considered together.
 - A social worker rates each item as low, moderate or high risk and sums the number of items coded at each risk level in order to determine the overall level of risk for families.
- o CERAP (Child Emergency Response Assessment Protocol) (Garnier & Nieto, 2002)

	■ Developed as a “safety assessment” by Illinois Department of Child and Family Services, the American Humane Association, the University of Illinois, and experts in the field ■ All types of maltreatment are considered together. ■ Includes fourteen items where and can be used throughout the life of the case. ■ Worker notes the presence or absence of each item; if any of the items are present, the worker decides whether the child is “safe” or “unsafe.” If the worker decides the child is unsafe, a safety plan is developed. ■ The training for using the instrument includes a rigorous testing and certification process o Risk Assessment Model of Child Protection (Ontario) (Leschied, et al., 2003) ■ Based upon scales originally developed by Magura and Moses (1986) and later modified by a research team from the University of Toronto in consultation with the Ontario Association of Children’s Aid Societies. ■ Twenty-two items within five domains (caregiver, child, family, intervention, and abuse/neglect) are assessed by means of a 4-point Likert-type scale scoring system. ■ The child welfare worker determines a total overall assessment of risk (low to high) and the cumulative risk score (the total of the ratings from the five domains). ■ The instrument is used to decide whether or not a child should be removed and placed into foster care. ■ All types of maltreatment are considered together. o Utah Risk Assessment Scales (Nasuti, 1998) ■ Based upon Family Risk Scales and Child Well-Being Scales originally developed by Magura and Moses (1986) along with additional scale items developed by members of the Utah Department of Social Services and the Utah Child Welfare Training Project. ■ Likert-type instrument is composed of 32 items within five domains: parent, child, family, maltreatment, and intervention. ▪ The instrument was designed for all types of maltreatment and can be used by child welfare intake and investigative workers.
NICE, 2017 (NICE guideline committee, ES107,	<i>Rec 1.2.10</i> Recognise the following as risk factors for recurring or persistent child abuse and neglect: ● The parent or carer does not engage with services.

ES113, ES116, ES118, ES120, ES122, ES123)	• There have been 1 or more previous episodes of abuse or neglect • The parent or carer has a mental health or substance misuse problem. • There is chronic parental stress. • The parent or carer experienced abuse or neglect as a child. • Recognise that neglect and emotional abuse are more likely to recur or persist than other forms of abuse.
<i>Identified Via Literature Search</i>	
Van der Put et al., 2015	Clinical approaches to assessment of child maltreatment are most common in child protection practice, despite evidence that actuarial instruments perform better than clinical instruments or approaches. (Clinical approaches include unaided decision-making, consensus-based instruments, and structured clinical judgment tools). Actuarial methods are effective in predicting future child maltreatment (risk assessment), which would include recurrence of maltreatment. They have not shown validity in facilitating case planning through identifying targets for intervention (needs assessment). In addition, actuarial instruments consist mainly of static risk factors and so cannot assess variations in risk over time, although there is no intrinsic reason actuarial instruments could not include dynamic risk factors.
van der Put, 2017	• Available instruments are better at predicting onset of maltreatment than recurrence of maltreatment. • Actuarial instruments perform better than clinical instruments (consensus-based instruments and structured clinical judgement instrument) in terms of predictive ability and inter-rater reliability. • Actuarial instruments are based on empirically established relationships between risk factors and child maltreatment. • In consensus-based instruments, clinicians rate characteristics that are deemed relevant because of consensus among experts. • Structured clinical judgement instrument involves assessment of risk factors that are derived empirically, but also allows the practitioner to subjectively weight these risk factors, and the final decision is left to the practitioner • Available instruments do not discriminate between risk assessment (risk of recurrence of maltreatment for a specific child or family) and needs assessment (identifying which children and families are most in need of intervention). • Risk assessment tools can be useful tools in determining the risk of child maltreatment because unstructured clinical judgement is widely recognized to be flawed, due to lower transparency, reliability, and predictive validity. [verbatim]

- Actuarial instruments in their current form are limited in their ability to guide case planning (needs assessment) because they do not identify the full range of risk factors necessary for adequate intervention planning. [verbatim]
- Current actuarial instruments are mainly based on static risk factors and therefore, are suitable for predicting future child maltreatment to determine intervention urgency and intensity, not for case planning.
- Evidence supports the use of one specific tool - the California Family Risk Assessment

Actuarial instruments which have been evaluated:

- Actuarial Risk Assessment Instrument Youth (ARIJ) - multiple forms of maltreatment (Van der Put et al. 2016)
- California Family Risk Assessment (CFRA) - multiple forms of maltreatment (Dankert & Johnson 2014; Johnson 2011; Johnson et al. 2015; Van der Put et al. 2016)
- Child Abuse Potential Inventory (CAPI) - multiple forms of maltreatment (Ayoub & Milner 1985; Chaffin & Valle 2003; Milner et al. 1984; Ondersma et al. 2005)
- Child Abuse Potential Inventory (Brief CAPI) - physical abuse, neglect (Ondersma et al. 2005)
- Colorado Family Risk Assessment Abuse Scale - multiple forms of maltreatment (Coohey et al. 2013)
- Colorado Family Risk Assessment Abuse Scale (Revised) - multiple forms of maltreatment (Coohey et al. 2013)
- Connecticut Risk Assessment - multiple forms of maltreatment (Sledjeski et al. 2008)
- Family Psychological Risk Inventory - multiple forms of maltreatment (Hunter et al. 1978)
- Family Stress Checklist - multiple forms of maltreatment (Murphy et al. 1985)
- Instrument for Early Identification of Parents at Risk for Child Abuse and Neglect (IPARAN) - multiple forms of maltreatment (Van der Put et al. 2017)
- Maternal History Interview 2 (MHI 2) - physical abuse & neglect (Altemeier et al. 1984; Brayden et al. 1993)
- Michigan Family Risk Assessment - multiple forms of maltreatment (Baird & Wagner 2000)
- Minnesota Family Risk Assessment (MFRA) - multiple forms of maltreatment (Loman & Siegel 2004)
- National Council on Crime and Delinquency Risk Assessment Tools - multiple forms of maltreatment (Wood 1997)
- Predictive Risk Model - multiple forms of maltreatment (Vaithianathan et al. 2013)

	• Screening Checklist for Risk of Referral - multiple forms of maltreatment (Hamilton & Browne 1999) • Youth Actuarial Care Needs Assessment Tool for Non-Offenders (Y-ACNAT-NO) - general maltreatment (Assink et al. 2015) <u>Consensus based instruments which have been evaluated:</u> • California Family Assessment Factor Analysis - multiple forms of maltreatment (Baird & Wagner 2000) • CANTS 17B - multiple forms of maltreatment (Camasso & Jagannathan 1995) • Ontario Risk Assessment Tool - multiple forms of maltreatment (Barber et al. 2008) • Washington Risk Assessment Matrix - multiple forms of maltreatment (Baird & Wagner 2000; Camasso & Jagannathan 1995) <u>Structured clinical judgment instruments which have been evaluated:</u> • California Family Risk Assessment (with possibility to overrule) - multiple forms of maltreatment (Johnson 2011) • Check List of Child Safety (CLCS) - multiple forms of maltreatment (Bartelink et al. 2015; Van der Put et al. 2016) • Child Abuse Risk Evaluation (CARE-NL) - multiple forms of maltreatment (De Ruiter et al. 2012) • Maternal History Interview (MHI) - physical abuse (Altemeier et al. 1984) • Structured Problem Analysis of Raising Kids (SPARK) - multiple forms of maltreatment (Staal et al. 2013)

Table 27: Findings from literature relevant to Q10

Article	Key Findings
<i>Identified Via Literature Search</i>	
Abu-Moghli, 2005	Practitioners should report the suspected cases of maltreatment despite lack of services available for the child or cultural norms of considering child upbringing as a "family matter" based on implied tort law even when legal mandate is absent. If referral system is not in place for the child victim of maltreatment, nurses may have to advice and council themselves. All health care institutions need to develop clear policies that address the concern of nurses in relation to reporting maltreated children based on country's laws, rules and regulations.

Al-Moosa,2003	It is important to learn about local reporting laws on child maltreatment even if the health services provider does not speak the local language or belong to a different culture. Health worker working in the different country should report suspected cases of maltreatment despite their reluctance in getting involved in a foreign country. Health workers must be provided proper training, continued medical education, and communication skills to provoke a cognitive change leading to ensure complete adherence to the reporting mandate.
Alnasser, 2017	Results indicated that physicians, pediatric residents, and medical school students in Saudi Arabia had positive attitudes towards reporting suspected child maltreatment and getting further education and training about response to child maltreatment. However, they lacked knowledge about reporting requirements and procedures, leading to low levels of reporting overall.
Bannwart, 2011	Pediatricians reported hesitancy in notifying Child Protective Services about suspected abuse if they were not sure that it was actually abuse, worrying that they would cause unjustified difficulty for a family via a false accusation. This was particularly relevant to reporting suspected neglect, as they worried about falsely accusing a family that in fact was simply too poor to adequately clothe and feed their child. Pediatricians also reported that they doubted that Child Protective Services would actually effectively handle cases if they were reported. Most pediatricians indicated that they did not receive education or training related to management of child maltreatment cases, and were unsure of correct reporting procedures. Finally, the reported hesitancy in reporting due to fears of confrontation with the family, including both being physically threatened and being sued. The article notes the need for protection mechanisms and for training of pediatricians on appropriate reporting protocol, including the conceptual distinction between "reporting" and "denunciation"-- i.e. reporting does not imply confirmed child maltreatment, merely suspected.
Deshpande, 2015	Medical education curriculum, and continuing education courses should be revised and other materials such as informed booklet should be provided to health workers to fulfill the knowledge gap. Health providers should remain updated about the local laws and regulations changes to clear any their suspicions on the fear of litigation or effect on their practice.
Flaherty, 2008	Two themes emerged: (1) the importance of physicians' own past experience identifying and reporting child abuse, including a "sentinel event" that continued to impact decision-making, and (2) the tremendous burden and responsibility of assessing abuse within the time constraints of an office visit. For some physicians, the sentinel event was a child suffering terrible consequences because the physician had failed to recognize and report abuse. Another physician had reported an injury to CPS that was determined to not be a result of abuse. In other case, a child had been fatally abused following a CPS investigation. Barriers to identifying and reporting physical abuse included a lack of knowledge about abuse (reported by all physicians), negative experiences such as lack of support from CPS, close relationships with families in their practice that they were afraid of offending by considering the possibility of abuse, and bureaucratic and resource constraints including time pressure and lack of in-office diagnostic tests. Physicians identified resources which helped them in decision-making, including conversations with colleagues and child abuse experts. They also felt the legal mandate to report provided helpful cover when they had to report.

Flemington, 2016	An educational intervention did not improve attitudes towards reporting or likelihood to report suspected child maltreatment among hospital staff in Vietnam. However, the authors note that this is unsurprising, given that the hospital did not have a reporting mechanism or protocol and that there was no specific group or organization to report to, or even any organization equipped to effectively respond to such a notification.
Ho, 2015	Study findings indicated that pediatric nurses had differing viewpoints of acceptable and unacceptable child discipline behaviors. Although all respondents indicated that the more extreme forms of punishment were unacceptable, they varied in their endorsement of other types of physical punishment as acceptable. This suggests that there is the potential for discrepancies in identification and reporting of child abuse among pediatric nurses.
Jones, 2008	A high percentage of physicians in this study admitted that they did not report all suspected physical abuse of children to CPS. Their primary reasons for not doing so were familiarity with the family, case history such as absence of previous suspicious injuries, feedback from colleagues who were consulted that the injury should not be reported (although most physicians who did not report did not consult a colleague and physicians were more likely to consult colleagues when they did decide to report), and the expectation of negative consequences to the child or family were the case reported to CPS. In these cases, physicians chose to directly follow-up (actively or informally) rather than reporting to CPS. Some physicians retrospectively modified their original opinion that an injury was likely caused by abuse, as a justification for why they did not report the injury to CPS.
Konijnendijk, 2017	Child health care professionals who consult with an in-house expert on child abuse and neglect report higher adherence to two of six activities recommended by national guidelines: consulting the regional child protection service and monitoring whether support was provided to families.
Leite, 2006	Comparison of child maltreatment notifications made per month before, during, and after an educational intervention for medical residents indicated an increase in notifications during and immediately after the course, but a slight decrease in the months afterwards. Findings indicate that the educational course sensitized pediatric residents about diagnosing child maltreatment and the need to report it, but that ongoing education is needed to sustain these outcomes.
Leite, 2016	Nurses reported feeling unknowledgeable and unprepared to handle situations of domestic violence, and therefore often did not notify the proper authorities when they suspected child abuse. They explained that there were trainings given on the topic by the health department, but they were unable to attend due to their heavy workloads. They also indicated that lack of confidence in child protective services' ability to effectively deal with cases of domestic violence, and fear of retribution from families if they did report a case, were other reasons for not reporting.
Orhon, 2006	Residents and medical students with abusive childhood experiences in their own past were more likely to consider forceful physical and verbal disciplinary practices to be acceptable forms of punishment compared to those without abusive childhood experiences. Although most residents and medical students did not see severe physical disciplinary practices as acceptable, many also did not view them as abuse that should be reported-- "shaking a child" was not accepted as reportable as abuse by 51% of residents and 64% of medical students.
Sidebotham, 2007	In this survey of Emergency Departments (EDs) in England and Northern Ireland, most had written protocols for child protection. Protocols were more practically useful when they were brief, specific to the department, incorporated medical and nursing management, and included a single page flow chart. Most protocols included a clear referral process, although some did not. Other omissions included not specifying safeguards for a child at immediate risk and not having management check whether a referral was documented in writing. Protocols were also deficient in terms of guidelines for interagency cooperation, information

	sharing, confidentiality, and child-centered approach including how to listen to the child. Some EDs used a checklist to highlight concerns, with the most common concerns being an inconsistent history or one which did not match the physical exam, frequent visit to the ED, delay in visiting the ED, and concerns about the child's appearance or behavior or interaction with parent. Checklists should be used as memory aids and not as screening tools. Many EDs have a need for more clear, standardized, and accessible procedures, and for clear lines of referral (to social services) and responsibility. Based on this evidence and their expertise, the authors recommend the following quality standards and recommendations: 1. Development of clear and brief protocols which align with local and national guidelines and ideally contain a flowchart 2. Child-centered response 3. Clear roles and responsibilities for all health workers, including guidelines for who staff should contact in case of concern, and regular support by an experienced child protection practitioner 4. Checklists should be brief (no more than 8 items), specific, and clearly designated to be used as a memory aid and not a screening tool or substitution for clinical acumen 5. Referral to social services should only take place after discussion with a senior colleague and should be documented in writing; if the child is in immediate danger, ED staff should provide emergency management including preventing child from leaving ED 6. Clear plan for subsequent management of case; initial provider should not relinquish responsibility 7. Communication and cooperation with other agencies, and frank communication with caregivers unless doing so would place the child at risk of compromise a criminal investigation
Svärd, 2017	Health care providers working in a setting with guidelines and routines for the reporting of child maltreatment had a significantly higher likelihood of being high reporters of child maltreatment compared to those not working in a setting with guidelines and routines. Findings also indicated that insecurity in assessment of child maltreatment and stress were barriers to reporting of maltreatment to social services.
Tien, 2002	Hospital-based multi-disciplinary child protection teams (CPT), typically comprised of a doctor, a nurse, and a social worker, can assist health workers in evaluating and managing cases of child abuse and neglect. CPTs can provide services such as consulting on cases, coordinating and filing reports with social services, tracking cases, and providing quality assurance.
Tiyyagura, 2015	Emergency department providers explained that barriers to reporting suspected cases of child abuse included redundant (having to make both oral and written reports) and time-consuming reporting processes and the busy emergency department environment that left little time for close follow-up of cases or getting to know the details of family dynamics. They also indicated that they received little follow-up from child protective services regarding cases that they referred, and that they were concerned about a report resulting in them having to testify in court, falsely accusing a family of abuse, or angry caregivers physically threatening a provider as reprisal. Facilitators to reporting included having the opportunity to discuss potential cases of child maltreatment with colleagues and supervisors, and

	accurate understanding of the mandated reporting law, particularly the fact that certainty of maltreatment was not necessary for a provider to report to child protective services and that reporting could result in families receiving needed services even if maltreatment was not substantiated. Providers indicated a desire for more education about reporting of suspected child abuse, a more standardized and less time-intensive reporting process, and opportunities to consult experts when dealing with suspected child abuse.
Woodman, 2013	GPs typically reported physical and sexual abuse and saw such cases as being quite straightforward (when there was no doubt about the presence of such abuse), whereas they sometimes did not report cases in which there was uncertainty about the presence of physical or sexual abuse. GPs often did not report emotional abuse or neglect and tended to monitor such situations or intervene directly, partly because of mistrust of social services and also because they often conceptualized the problems and their response as medical, in spite of the presence of social problems and child maltreatment. GPs desired better communication and coordination with social services.