

Telemedicine: opportunities for anaemia counseling and improvement of adherence

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Use of mobile phones for behavior change communication to improve maternal, newborn and child health: a scoping review

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Background Behavior change communication (BCC) to improve health and caring practices is an integral component of efforts to improve maternal, newborn and child health (MNCH). Mobile phones are widely available in low- and middle-income countries (LMIC), presenting new opportunities for BCC delivery. There is need for delivery science to determine how best to leverage mobile phone technology for BCC to improve MNCH practices.

Methods We conducted a scoping review of studies and project reports documenting the feasibility, implementation or effectiveness of using mobile phones for BCC delivery related to MNCH in LMIC. Data were extracted and synthesized from three sources: i) systematic search of three electronic databases (PubMed, MedLine, Scopus); ii) grey literature search, including mHealth databases and websites of organizations implementing mHealth projects; iii) consultation with researchers and programme implementers. Records were screened using pre-determined inclusion criteria and those selected were categorized according to their primary intervention delivery approaches. We then performed a descriptive analysis of the evidence related to both effectiveness and implementation for each delivery approach.

Results The systematic literature search identified 1374 unique records, 64 of which met inclusion criteria. The grey literature search added 32 records for a total of 96 papers in the scoping review. Content analysis of the search results identified four BCC delivery approaches: direct messaging, voice counseling, job aid applications and interactive media. Evidence for the effectiveness of these approaches is growing but remains limited for many MNCH outcomes. The four approaches differ in key implementation elements, including frequency, length and complexity of communication, and potential for personalization. These elements influence resource allocation and are likely to impact effectiveness for BCC targeting complex, habitual MNCH practices.

Conclusions: This scoping review contributes to the evidence-base on the opportunities and limitations of using mobile phones for BCC delivery aiming to improve MNCH practices. The incorporation of mobile phone technology in BCC interventions should be guided by formative research to match both the content and delivery approach to the local context. We recommend five areas for further research, including both effectiveness and implementation studies on specific delivery approaches.

Improved caring practices is one important pathway towards progress in many aspects of maternal, newborn and child health (MNCH) in low- and middle-income countries (LMIC). Behavior change communication (BCC) has become an integral component of many MNCH interventions, but there are multiple known challenges

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Opportunity:

leverage widespread access to mobile phones



Ericsson; [Community Health Workers Senegal 2013](https://creativecommons.org/licenses/by-nc-nd/2.0/)
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Research Question:

How can mobile phone technology be used for behaviour change communication to support improved maternal, newborn and child health practices in low- and middle-income countries?

Scoping Review Objectives

- 1) Classify approaches for mobile phone delivery** of behaviour change communication for maternal, newborn and child health

- 2) Describe the state of evidence** for each approach from both effectiveness and implementation perspectives

Focus:

- home-based care practices
- preventive health services
- pregnancy to 5th birthday

Data Sources

1. Published literature
 - PubMed, MedLine, Scopus
2. Grey literature
 - online repositories
 - websites of organizations and projects
 - project evaluation reports
3. Consultation with implementers and researchers

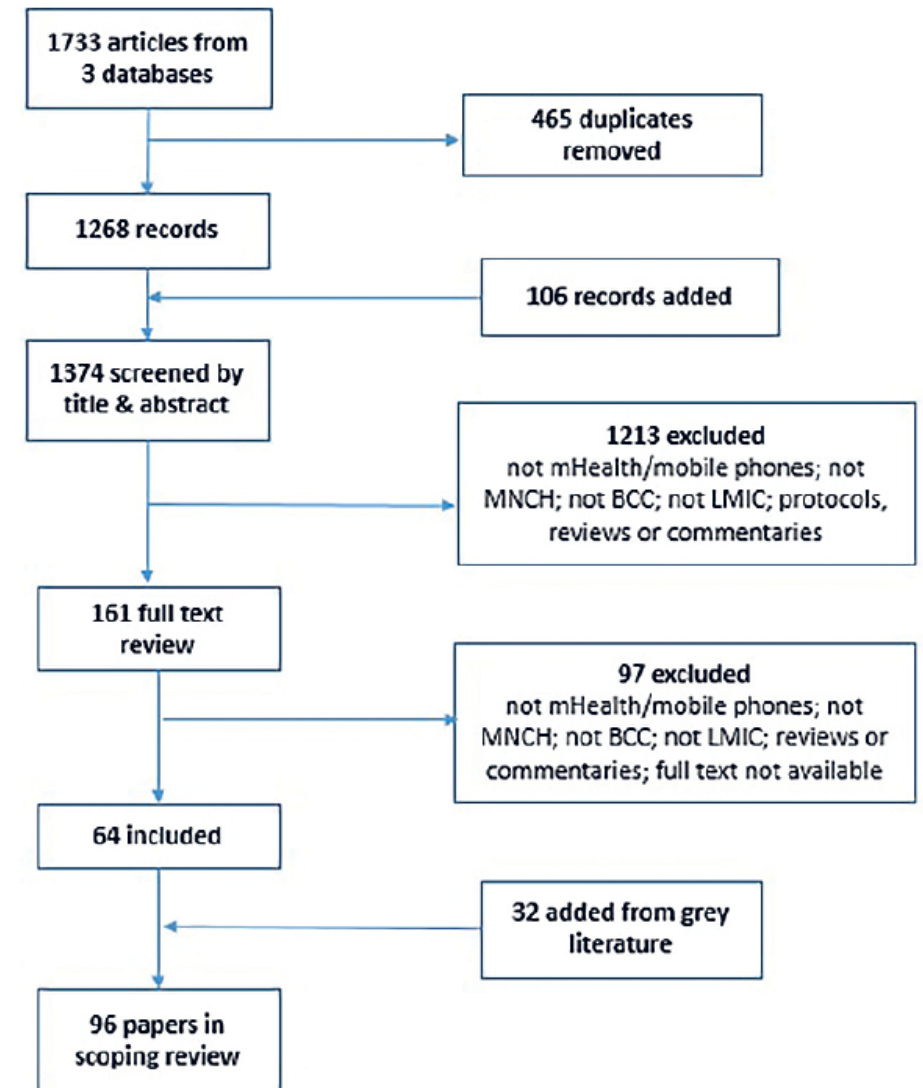


Figure 1. Literature search flowchart.

Direct Messaging



Job Aid Apps for
Frontline Workers



Mobile Phone
Delivery
Channels

Interactive
Media

Voice Counseling



DIRECT MESSAGING

- delivered to user's own phone
- brief text or audio
- large-scale subscription services



Gram Vaani; [Women Listening to MV](https://creativecommons.org/licenses/by-nc-nd/2.0/)
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VOICE COUNSELING

- calls to/from user's own phone
- responsive (i.e. hotline)
- proactive counseling



Gram Vaani; [A woman reports her story on Mobile Vaani](https://creativecommons.org/licenses/by-nc-nd/2.0/)
<https://creativecommons.org/licenses/by-nc-nd/2.0/>

JOB AID APPS

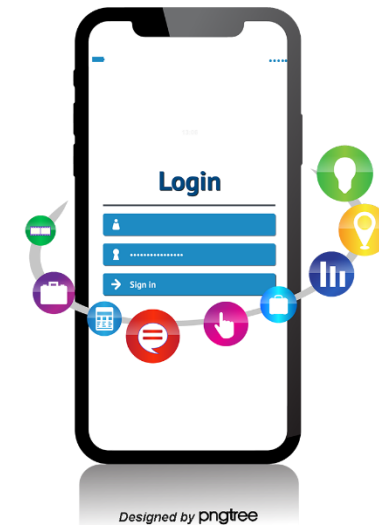
- multi-function support for frontline workers
- embedded audio or multimedia messages
- usually require smartphones



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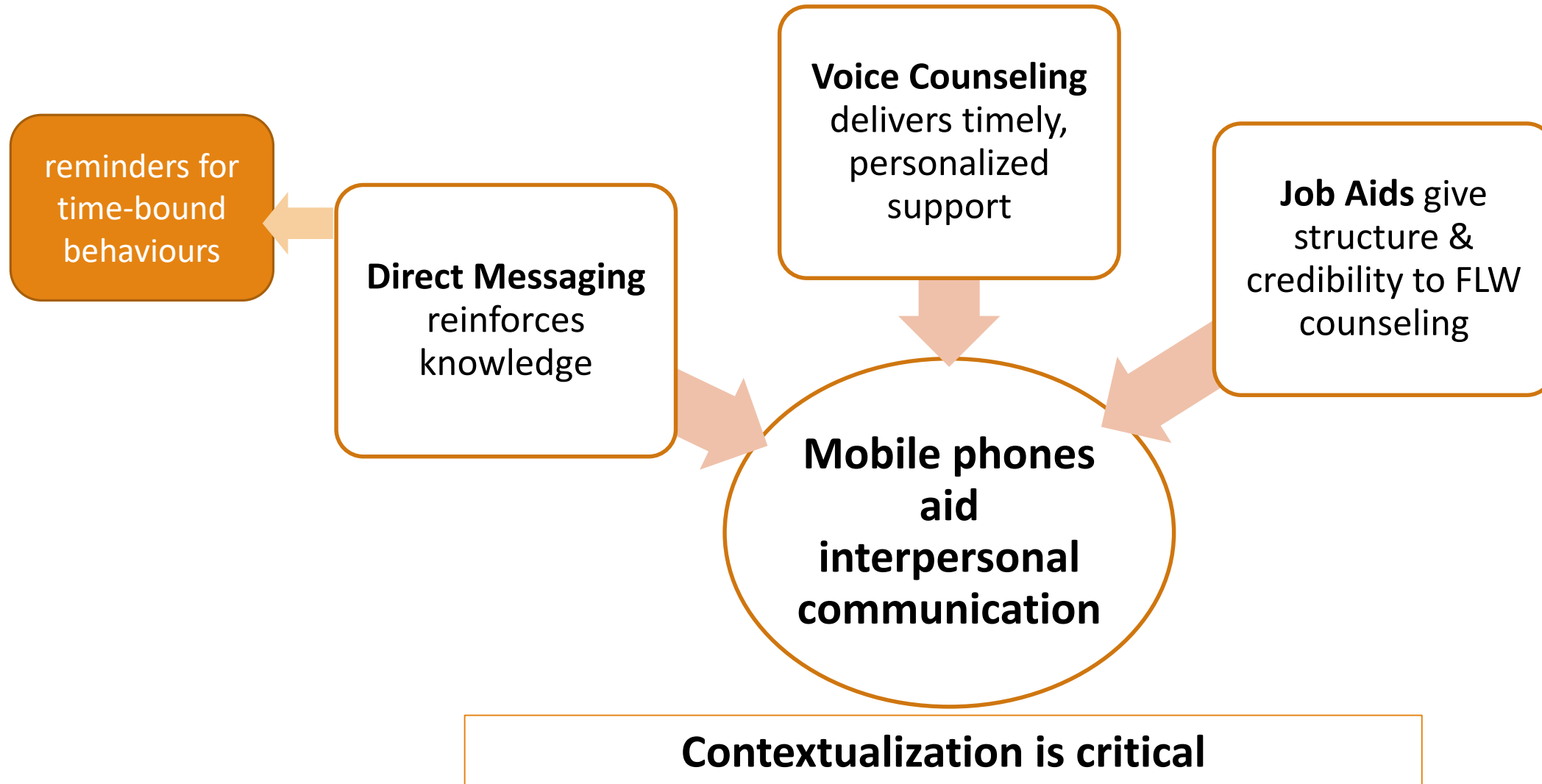
INTERACTIVE MEDIA

- mobile internet
- smartphone apps
- social media



smartphone vector PNG Designed By Essie from Pngtree.com

Application to Intervention Designs



Delivery Channel Considerations

- type of mobile phones (basic/smartphone)
- phone access and usage patterns
- language and literacy
- human and financial resources
- quality assurance mechanisms

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