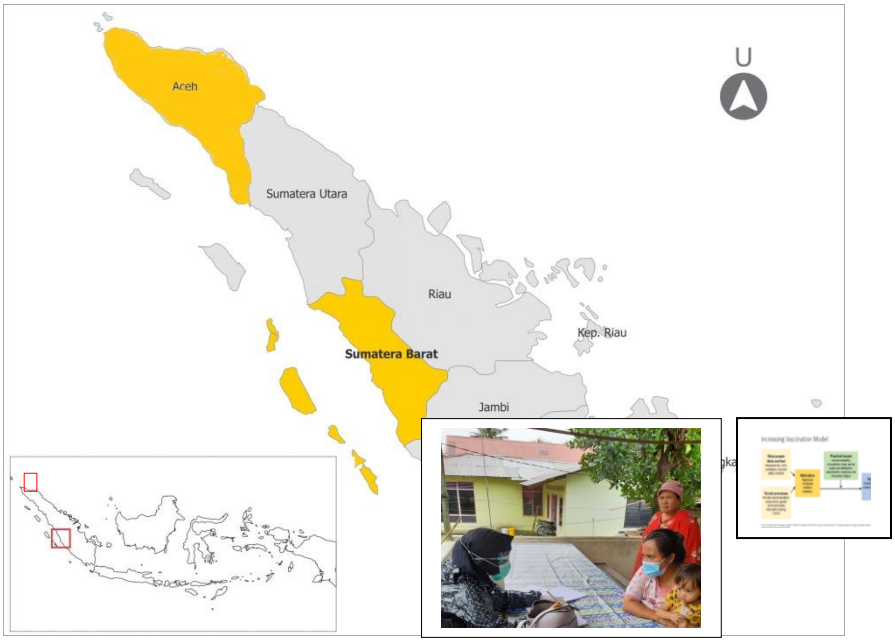
KEMENTERIAN KESEHATAN REPUBLIK INDONESIA

FACULTY OF PUBLIC HEALTH

World Health Organization Indonesia

TECHNICAL REPORT

Measuring Behavioural and Social Drivers of Vaccination in Indonesia 2020



Faculty of Public Health, Universitas Indonesia

In Collaboration with:

World Health Organization (WHO)

Expanded Program of Immunization (EPI) Ministry of Health (MoH) RI

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LIST OF ABBREVIATIONS

BeSD	: Behavioural and Social Drivers of Vaccination
CDC	: Centers for Disease Control
CIS	: Childhood Immunization Survey
DHO	: District Health Office
DTP	: Diphtheria, Tetanus, and Pertussis
HB	: Hepatitis B
HBM	: Health Belief Model
HH	: House Hold
HQ	: Headquarters
Hib	: Haemophilus Influenzae Type B
HPV	: Human *papillomavirus*
IBI	: Ikatan Bidan Indonesia (Midwife Organization)
IDI	: in-depth interview
IPV	: inactivated polio vaccine
Km	: Kilometers
LMICs	: Low-Income and Middle-Income countries
MCH	: Maternal and Child Health
MOH	: Ministry of Health
MOV	: Missed Opportunity for Vaccination
MPU	: Majelis Permusyawaratan Ulama (Ulama Consultative Council)
MR	: Measles Rubella
NU	: Nahdlatul Ulama
PKK	: Pembinaan Kesejahteraan Keluarga (*Family Welfare Empowerment Organization)*
PPS	: Proportional Probability to Size
SAS	: Statical Analisis sistem
UNICEF	: United Nations Children's Fund
WHO	: World Health Organization

ACKNOWLEDGEMENTS

Study of Measuring Behavioural and Social Drivers of Vaccination (BeSD) in Indonesia 2020 was conducted in two districts (Bireuen District in Aceh Province and Padang City in West Sumatera Province). The study was supported and funded by World Health Organization (WHO). It is with great satisfaction that we present the Final Report of the Measuring Behavioural and Social Drivers of Vaccination in Indonesia 2020. This is the first representative study of its kind conducted in Indonesia. This study used Childhood Immunization Survey tools which had been adopted locally in Indonesia. This study aims to identify behavioural and social drivers of vaccination in Indonesia by using the local adaptation and use of the tools to generate insights from caregivers, health workers, and community leaders or community influencer.

First of all, we would like to thank WHO Indonesia team, Dr. Olivi, Dr. Fina, Dr. Vinod, Dr. Paba, and Ms.Deasy who have provided valuable inputs to the report. We also would like to present our sincere thanks to WHO HQ team, Francine Ganter-Restrepo and Lisa Menning for their immense support. We are also grateful to global experts-Kerrie Wiley, Shapiro Gilla, Professor Noel Brewer and Professor Julie Leask who provided vauable inputs and suggested new approachs for increasing vaccination model with the BeSD tool.This has been very interesting and a novel experience for us.

We express heartfelt gratitude to all the institutions and people in Bireuen District and Padang City who contributed to the success of the study. The study would not have been possible without the commitment and professionalism of the field team and support from stakeholders and other sectors. We also sincerely thank, Immunization Sub-Directorate of MOH RI, UNICEF, Provinces Health Office, District Health Office, Health Centers, village midwife, community influencer (MUI, NU, Muhammadyah, PKK, MPU Syariah, head of village, head of sub district), caregiver and all institutions that contributed to the success of this study.

We hope that findings and tools from this study will be useful to improve Expanded Program for Immunization (EPI) in South East Asia Region and worldwide. Office of WHO, Indonesia, especially for the in Bireuen District and Padang City where the study implemented.

Depok, November 2020

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EXECUTIVE SUMMARY

Background:

Measles remains an epidemic in most regions across the world. Although signicant progress has made in immunization in the past decade, progress has stalled in some countries, and in some countries it has even reversed. These recent trends have offered stark reminders that strong, resilient immunization programmes are needed to sustain high levels of vaccine uptake to achieve targets for disease elimination and eradication. As measles incidence increases in countries, there is now an intense focus on addressing low vaccination uptake. Most countries do not systematically measure the drivers of vaccination. This prevents them from understanding the causes of low coverage in their specific context and prioritizing interventions. A comprehensive understanding of the facilitators and barriers to childhodd vaccination is vital to implement the most appropriate intervention. To address these issues, the World Health Organization (WHO) convened a working group to develop tools to measure the drivers of vaccination in November 2018.

Inorder to design robust, targeted interventions aimed at increasing vaccination coverage and equity, we must first start by assessing a full range of behavioural and social drivers (BeSD) of vaccination to effectively address programme challenges. These involve the thoughts and feelings of individuals, social processes and practical or access-related factors. Against this background, the Department of Epidemiology, Faculty of Public Health, Universitas Indonesia supported by World Health Organisation Headquarters (WHO HQ) and WHO Indonesia, conducted a BeSD study from April to September 2020 in Bireuen District, Aceh Province and Padang City, West Sumatra. Both locations have low to moderate coverage of immunization. The objective of this study is to identify behavioural and social drivers of vaccination in Indonesia by using the local adaptation of the BeSD tools to generate insights from caregivers, health workers, and community leaders. The specific objectives are to identify the full range of drivers and barriers to immunization in districts; and to provide technical assistance to local stakeholders to facilitate intervention implementation to increase vaccination uptake.

Method:

A mixed method approach was used for the study. Quantitative methods were used to survey participants. Qualitative methods were used to conduct in-depth interview (IDI) with caregivers, health workers, and community leaders. Virtual meetings were also conducted to gather inputs from WHO, partners and key programme stakeholders to understand knowledge gaps and priorities.

The locations were selected based on the low coverage of immunization among provinces in Indonesia. Considering available resources, such as time and budget, Aceh Province with Bireuen District (rural area) and West Sumatra with Padang City (urban area) was selected. Eligible respondents were caregivers who had under five children. A total of 540 participants were selected, 270 in each district.

Results:

CIS for immunization coverage: Less than half of the children had received complete or full immunization (23.0%) in Bireuen District and (32.2%)in Padang City.

Thinking and feeling: A total of 66.7% respondents in Bireuen district and 58.9% in Padang City answered that immunization was important. A total of 59.3% of respondents in Bireuen District and 53.7% in Padang City were worried that immunization would cause a serious reaction.

Social process: A total of 64.8% respondents in Padang City responded that their religious beliefs supported immunization, in contrast Bireuen District only 46.3% participants responded that religious beliefs were supportive. Around half of the respondents reported that father was the decision maker (45.2%) in Bireuen District and (43.3%) in Padang City. Majority of respondents (88.1% in Bireuen District and 65.6% in Padang City) need permission from their husband or family to take their children for immunization. In Bireuen District, the most common misinformation was the issue of halal and haram (56%), whereas in Padang City, it was the side effect of immunization (67.7%).

Motivation: More than half (50.7%) of respondents in Bireuen District and (67.8%) in Padang City wanted to get all types of immunizations recommended by the government.

Practical Issues: Majority of respondents (98.5% in Bireuen District and (99.3%) in Padang City know the place of immunization services. Most respondents (71.5%) in Bireuen District and (91.9%) Padang City brought their children for immunization. Posyandu was the most visited place to get immunization services (72.5%) in Bireuen District and (73.4%) in Padang City. Almost all respondents were satisfied with immunization services (98.0% in Bireuen and 96.7% in Padang City).

Conclusion and Recommendation: The social driver concept was easier than oher concept was easier than other concepts. It can be implemented in all districts and cities in Indonesia. Immunization coverage in Aceh (Bireuen) and West Sumatera (Padang City) can be increased by improving the motivation, social process and pratical issues and thinking and feeling.

The willingness of the mothers to bring their children for immunization in Bireuen and Padang City were high, therefore there is a need to increase mothers' knowledge in order to improve their perception on immunization. Increasing mothers' knowledge is also required to improve their perception about the side effects. Mothers have their own rights in realtion to their children's immunisation status along with the fathers. Community influencers (religious leaders) should be open to new knowledge and technology. Health promotion and education measrues should be conducted to increase awareness on immunization and its benefits.

I. INTRODUCTION

1.1. Background

Expanded immunization programs (EPI) started with smallpox eradication in 1969 globally. In Indonesia, it started in 1972 (Wahyono, 2018). The successful EPI program in smallpox eradication was followed by Polio eradication. Indonesia has been declared polio free in the year 2014. WHO has already declared measles eliminated in Indonesia. One of the strategy for measles elimination in Indonesia was conducting a comprehensive MR campaign in 2017 and 2018 (Kemenkes (2019) 'Kementerian Kesehatan Republik Indonesia', Kementerian Kesehatan RI, 2019).

Measles remains an epidemic in most regions across the world. Although signicant progress has made in immunization in the past decade, progress has stalled in some countries, and in some countries it has even reversed. These recent trends have offered stark reminders that strong, resilient immunization programmes are needed to sustain high levels of vaccine uptake to achieve targets for disease elimination and eradication. As measles incidence increases in countries, there is now an intense focus on addressing low vaccination uptake. Most countries do not systematically measure the drivers of vaccination. This prevents them from understanding the causes of low coverage in their specific context and prioritizing interventions.

For Indonesia, the immunization programme has seen many years of progress towards increasing immunization coverage and closing immunity gaps. In the last 18 months, however, confidence in vaccination has declined in some settings, specifically for measles vaccination. Despite three doses of diphtheria toxoid vaccine given during infancy and three booster doses given during childhood and adolescence, diphtheria is endemic with periodic outbreaks in Indonesia. Further work is now needed to generate insights from caregivers, health workers, and community leaders, to inform strategic and tailored planning, and to help mitigate risks to uptake.

A comprehensive understanding the facilitators and barriers to childhood vaccination is vital to implement the most appropriate intervention. The World Health Organization (WHO) convened a working group to develop tools to measure the drivers of vaccination uptake in November 2018. Named "Behavioural and Social Drivers of Vaccination" (BeSD) this is a workstream under the larger multi-partner Demand Hub and in consultation with UNICEF, the US Centers for Disease Control (CDC), Gavi, the Vaccine Alliance, and the Bill and Melinda Gates Foundation.

BeSD's objective is to develop tools and guidance to enable immunization programmes and partners to measure and address local reasons for under-vaccination, and to track consistent and comparable data over time at a national and global level. The tools will include quantitative survey questions for caregivers of children and qualitative interview guides for caregivers and healthcare workers. There will also be a related user guide. These tools will support high-quality data collection, analysis and application of findings to immunization programmes. The development work will take another year and include further end-user informant interviews and extensive field testing in a range of countries using cognitive interviews and pilots to ensure stability of the tools across diverse contexts and their predictive validity.

To effectively address programme challenges with the design and evaluation of robust, targeted interventions to increase vaccination coverage and equity, we must begin by assessing the full range of behavioural and social drivers of vaccination. These involve the thoughts and feelings of individuals, social processes and practical or access-related factors. To facilitate this work, globally standardized tools (a survey and related interview guides) have been developed and informed by a considerable body of evidence and experience. These tools are now available to be tested in Indonesia, which will generate local data to guide programme planning and implementation.

The BeSD piloting had been done in USA and Australia in 2020 using BeSD tools. The local adaptation and use of these tools will consist of two main phases of work: cognitive testing to guide local adaptation of the tools, followed by large-scale data collection, analysis and reporting. This work will require close coordination and collaboration with local stakeholders and partners, as well as engagement with global-level experts who have designed the tools.

It is envisaged that this work will not only eventually contribute to generating data in Indonesia about the behavioural and social drivers of vaccinations but also contribute to local capacity building in relation to the implementation of such research and resulting design and evaluation of interventions.

1.2. Objective

1.2.1 General

To identify behavioural and social drivers of vaccination in Indonesia by using the local adaptation and use of the tools to generate insights from caregivers, health workers, and community leaders.

1.2.1 Specific

a. To identify beliefs, social norms, and practical barriers to vaccine uptake

b. To identify local stakeholders in districts (urban and rural areas) at West Sumatera and Aceh Provinces

c. To provide technical assistance to local stakeholders to facilitate intervention implementation to increase vaccination uptake

II. LITERATURE REVIEW

2.1. Behavioural and Social Driver

Social drivers are defined here as social structures, institutions and agency, grounded in social norms and values that determine directions and processes of behavior change. Social structures are entrenched patterns of stratification and difference, related, for example, to class, gender, ethnicity, religion and location. Institutions are the "rules of the game"— formal (laws) and informal (norms)—that shape the behaviour of people and organizations in fairly predictable ways. Agency is the capacity of individuals and groups to make their own choices and influence decision-making processes that affect their lives. Social norms and values, which vary in different contexts, may include respect for human rights and dignity; meanings of identity and citizenship; commitment to social justice and equality; tolerance; and respect for diversity and the environment. In this assessment we use Increasing Vaccination Model to identify a range of factors influence whether a person is vaccinated or not. The Increasing Vaccination Model (see below chart) states that what people think and feel and social influences will affect motivation to vaccinate. Practical factors affect the ability to act on the motivation and get vaccinated (Brewer, 2017).

To support the systematic assessment of these factors affecting uptake, WHO is developing a set of tools to support programmes and partners to measure and address these reasons for under-vaccination, and to track consistent and comparable data over time. The tools include quantitative surveys, qualitative interview guides, and related user guidance, called 'Measuring Behavioural and Social Drivers of Vaccination' (BeSD). Figure 2.1 below shows a model to increase vaccination (Brewer *et al.*, 2017).

According to Brewer et al., vaccination is one of the most widely accepted health behaviors. Globally, 86% of children have received a measles vaccine, and that percentage is higher in North America and Europe as of 2018 (World Health Organization, 2018). Coverage is even higher for the diphtheria, tetanus, and pertussis (DTP) vaccine. These high rates have caused the incidence of many infectious diseases to plummet in the decades since relevant vaccines have been introduced. Such successes have led to calls for complete eradication of polio and regional elimination or control of other diseases through vaccination. Indeed, at the start of this decade, the WHO and other organizations designated 2011–20 as the Decade of Vaccines (Brewer *et al.*, 2017).

However, by 2019, the WHO declared vaccination hesitancy to be one of the top 10 threats to global public health. This threat could have several consequences. Inadequate coverage is the uptake of vaccination that fails to meet an agreed-on quality marker (e.g., 90% coverage). While global vaccination coverage rates have steadily drifted upwards, they have stalled in some regions and even slipped backwards in a few countries.

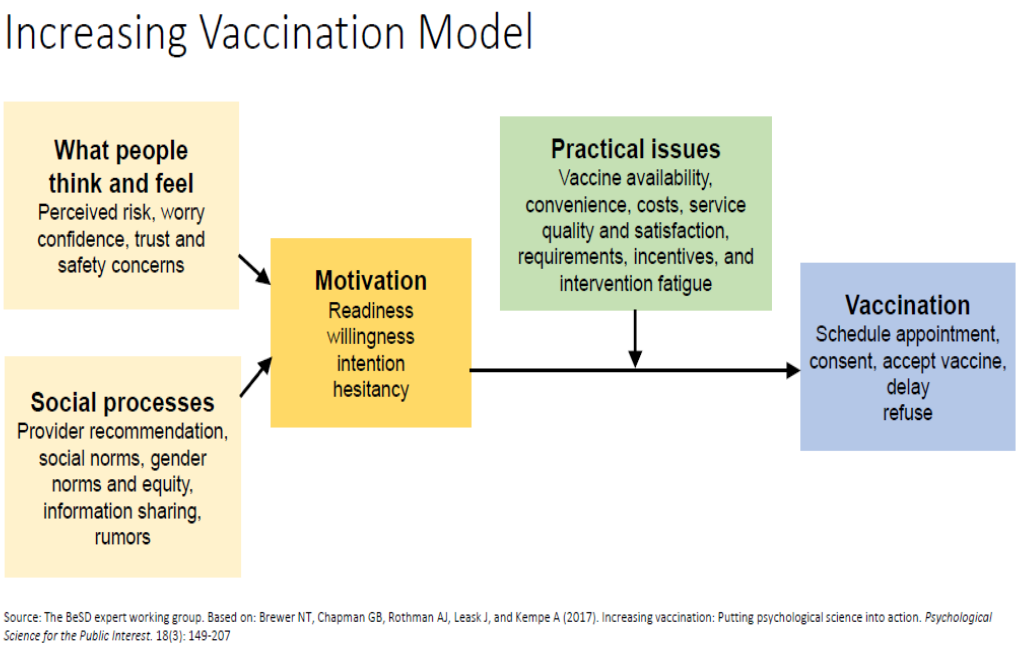


Fig. 2.1. Increasing Vaccination Model(Brewer *et al.*, 2017)

Since a range of determinants affect vaccination rates, for improving and sustaining uptake the most effective interventions contain multiple components. By engaging collaboratively with health workers, caregivers/parents, and their families and communities, national authorities can generate the insights to develop better quality health services, systems, policies, and communication strategies that support and enable recommended vaccination behaviours.

Delay is defined as getting vaccines after the recommended age or spreading the doses out over time. Despite clear findings that the current vaccination schedule is safe, parents are increasingly choosing to delay vaccines in the mistaken belief that having fewer vaccines at one time will reduce the risk of harm. Instability is variability in coverage over time, most often a sharp drop. Some countries with generally high vaccination coverage have experienced periods of dramatic instability. For example, Japan had achieved 70% coverage for HPV vaccination, yet coverage fell to 7% within a year of an unsubstantiated safety scare. Denmark had a similar issue that it was able to turn around, but only after coverage had fallen by half (Hansen, Schmidtblaicher, & Brewer, 2020).

The model presented here includes factors that work to increase vaccination uptake, which results from a series of behaviors by various actors. A family may talk about vaccines with friends, search for information online, schedule an appointment, travel to a clinic, consent to vaccination, return for any needed follow-up doses, and pay any related costs, such as an administration fee or travel expenses. Health provider stock vaccines, recommend them, track their use in medical records, flag who is due and overdue, and manage their vaccine stock.

What People Think and Feel consist of disease risk appraisals are thoughts and feelings about potential health problems caused by infectious agents (perceived risk and fear); vaccine confidence is the attitude that vaccines are good (effective) or bad (unsafe). Risk appraisals and confidence motivate people to vaccinate or not to do so. Another term for low motivation to vaccinate is hesitancy. While some people use the terms “confidence” and “hesitancy” interchangeably and motivation to vaccinate leads to vaccination uptake. According to John J. Macionis (1995) Norms are all the rules and expectations of society that guide all the behavior of community members.

While social process includes social norms and preferences about vaccination lead to vaccination uptake. In the model, confidence includes positive and negative attitudes toward vaccination and attitudes toward vaccination providers and systems. Motivation includes intentions, hesitancy, willingness, and acceptability. Vaccination behavior includes uptake, delay, and refusal.(Brewer *et al.*, 2017)In the model, confidence includes positive and negative attitudes toward vaccination and attitudes toward vaccination providers and systems. Immunization services providers play a crucial role in the successful implementation of immunization. Trust between the patient and the healthcare provider is important in provider–patient interaction and rapport. It influences management outcomes, especially in the treatment of long term, as well as influences outcomes of health promotion and prevention initiatives. A trusting relationship between healthcare provider and patient can have a direct therapeutic effect (Chipidza, 2015). A trusting relationship between healthcare provider and patient can have a direct therapeutic effect (Chipidza, 2015).

Motivation includes intentions, hesitancy, willingness, and acceptability. According to (Corsini, 2002) intention is a decision to act in a certain way, or the urge to take an action, whether consciously or not. Intention can also be related to a mother's reasons for immunizing her child and according to Sumandi Suryabrata in Djaali (2012) motivation is a state contained in someone who encourages him to do activities certain in order to achieve a goal.

Vaccination behavior includes schedule appointment, consent, accept vaccine, delay and refuse. For a missed opportunity for vaccination (MOV) refers to any contact with health services by an individual (child or person of any age) who is eligible for vaccination (eg unvaccinated or partially vaccinated and free of contraindications to vaccination), which does not result in the person receiving one or more of the vaccine doses for which he or she is eligible” (WHO, 2020). The availability of vaccines is closely related to the procurement, storage and distribution of vaccines in health centers and posyandu. Availability of vaccines can affect the implementation of immunization

“A missed opportunity for vaccination (MOV) refers to any contact with health services by an individual (child or person of any age) who is eligible for vaccination (e.g unvaccinated or partially vaccinated and free of contraindications to vaccination), which does not result in the person receiving one or more of the vaccine doses for which he or she is eligible” (WHO, 2020). The availability of vaccines is closely related to the procurement, storage and distribution of vaccines in health centers and posyandu. Availability of vaccines can affect the implementation of immunization. Immunization cannot be carried out if a vaccine is not available. The table below describes about missed opportunities on vaccination.

Other theories that are relevant to this increasing vaccination model are Health Behaviour Theory of Lawrence Green, Andersen and Health Belief Model. Lawrence Green with the Health Behavior Model (1993) stated that the health of a person and society is influenced by behavioral factors and factors outside of behavior such as availability of facilities, attitudes and behavior of health providers towards health will also support and strengthen the formation of behavior. The behavior itself is determined or formed from three factors (Li *et al.*, 2016).

a. Predisposing factors include knowledge, attitudes, beliefs, beliefs, values and so on.
b. Enabling factors include the physical environment, availability or non-availability of facilities or infrastructure.
c. Reinforcing factors which are manifested in the attitudes and behavior of officers who are the reference group of community behavior

While The Health Belief Model derives from psychological and behavioral theory with the foundation that the two components of health-related behavior are 1) the desire to avoid illness, or conversely get well if already ill; and, 2) the belief that a specific health action will prevent, or cure, illness. Ultimately, an individual's course of action often depends on the person's perceptions of the benefits and barriers related to health behavior.

The Andersen health behavior model is widely accepted as a reliable tool for the study of health services utilization. According to the Andersen model, health service utilization is a sequential and conditional function of three sets of factors: predisposing (demographic and social) factors, enabling (economic) factors, and need (health outcomes) factors (Nurdina, 2018). On the other hand, enabling resources (e.g. health insurance or income) may lead to inequity in health service. Need of health service may be affected by other socio-economic factors, such as ethnicity. Arcury et al. considered that preventive care utilization would mostly be influenced by predisposing and enabling factors, while curative care and hospitalization would primarily be influenced by need factors (UNICEF and University of Pennsylvania Social Norms Group, 2019).

2.2. Immunization Program in Indonesia

Expanded Program on Immunization (EPI) in Indonesia started when the health center was formally introduced in national health system in 1968 (Yosephine, 2017). The EPI program formally stated in Indonesia in 1974 by nationaly implemented basic immunization program also called routine immunization. Basic immunization programs implemented in Indonesia were: BCG, DTP, Polio and Measles. In the year 2014, Indonesia achieved Polio eradication. In the year 2017, it also achieved Neonatal Tetanus elimination. Indonesia conducted a nationwide MR (measles-rubella) campaign to achieve measles elimination by year 2023(‘Measles and rubella vaccination campaign off to good start in Kyrgyzstan’, no date).

Currently the antigens in the basic immunization programs are BCG, pentavalent (DTP-hepatitis B and Hib), Polio (IVP), MR (measles-rubella). Recently, Indonesia started a second DTP and Measles program

for children under 2 years old called the routine immunization program (included basic immunization program).

2.3. Immunization Coverage

Immunization coverage is defined as the percentage of children that have received immunization divided by the target children. The target children could be the number of children who were born in the past one year or surviving infant that was born last year. The uncertainity in the target children could affect the immunisation coverage.

Immunization coverage depends on community participation in immunization program. The number of children visiting immunization services dependent on community participation and immunization services. Immunization services given to community depends on providers factors and its facilities. Community participation is dependent on predisposing, enabling, need factors according to theory applied to community participation ('Immunization coverage survey.', 1992).

2.4. Factors Asscosiated with Immunization Status

Factors associated with immunization coverage in the assessment were measured in order to know which factors affect the coverage in the province. Many theories such as Lawrence Green theory, Anderson and Health Belief Model may be associated with the immunization status of the children . The factors are: i)predisposing (age, sex, education level,etc). ii)enabling (accessibility and aviability). iii)reinforcing (and role of family and leaders) need and iv)threat (side effect and inconvinient with immunization services). (Wahyono, 2018)

4.1.1. Socio-Demographics

a. Marital status

Status of marriage may have an effect in achieving complete basic immunization of children (Anokye et al., 2018, Sackou K. J, 2012). The husband's support is influential in adherence to immunization services for children or on the contrary, when the husband does not allow immunization to children, it can negatively impact immunization coverage (Wati, 2015).

b. Work for pay outside of home

Income levels do not necessarily stand alone as one of the possible factors to complete immunization. The work status of mother can be an important factor for immunization of infants or children under five. With the increasing number of female workers both in the formal and informal sectors, working mothers may have less time to take their children for immunization services (Mbengue MAS,et al, 2017, Lakew Y,et al., 2015). However, studies have shown that there is no significant relationship between maternal employment status and child immunization status (Olugbenga-Bello Adenike, et al., 2017).

c. Education level

Maternal education has been highlighted as an important predictor of full childhood immunization especially for measles immunization and receiving individual vaccines (Fernandez et al, 2011, Haque SMR, Bari W., 2013). Literature attributes this to changes that accompany maternal education, such as changes in attitudes, traditions and beliefs, increased autonomy and control over household resources, which enhance health care seeking (Bbaale E, 2013). There was significant association between immunization status of the children and mother's education status, birth order, and place of delivery (Sharma B, et al., 2013). A study conducted by Vikram et al. found significant association between maternal education and child immunization status (K. Vikram, et al., 2012).

d. Religion

Belief or religion held by a person is likely to affect the attitudes and behavior of that person in everyday life including in terms of health and immunization (Janaína Calu Costa, et al, 2020, Lorenz & Khalid, 2012). Factors which affect the low desire for immunization is beliefs based on religion (Holt et al, 2009, Shelton RC, et al., 2013, Lorenz & Khalid, 2012). Mothers with religious beliefs that consider vaccines as haram has caused coverage to decline, thus diverting part of the community to refuse vaccinating their children (Lorenz & Khalid, 2012).Religious beliefs are very influential on administration of vaccines (Lorenz & Khalid, 2012)

e. Gender of children

There are mixed reports from researches on the relationship between gender of children and immunization. Some studies mentioned that there is no assocation between gender of children and immunization status in several countries in sub-Saharan Africa (Janaína Calu Costa, et al, 2020). Female and male children, both have the same likelihood of being vaccinated in most low-income and middle-income countries (LMICs) (WHO, 2018, Hilber AM, 2010). Meanwhile, other studies show that gender of child was found to be associated with child immunization uptake for example, in Ibadan, Nigeria, male children are about three times as more likely to be immunized compared with female children (Oladokum R, et al., 2010).

III. METHODOLOGY

3.1 Study Design

The study followed a mixed method approach. Quantitative methods were used to survey participants. Qualitative methods were used to conduct in-depth interview (IDI) with caregivers, health workers, and community leaders. In addition, virtual meetings were also conducted to gather inputs of the WHO, partners and key programme stakeholders to understand knowledge gaps and priorities.

3.2 Location

Locations have been selected based on the low coverage of immunization among provinces in Indonesia. Considering available resources, such as time and budget, the study team selected Aceh Province with Bireuen District (rural area) and West Sumatra with Padang City (urban area).

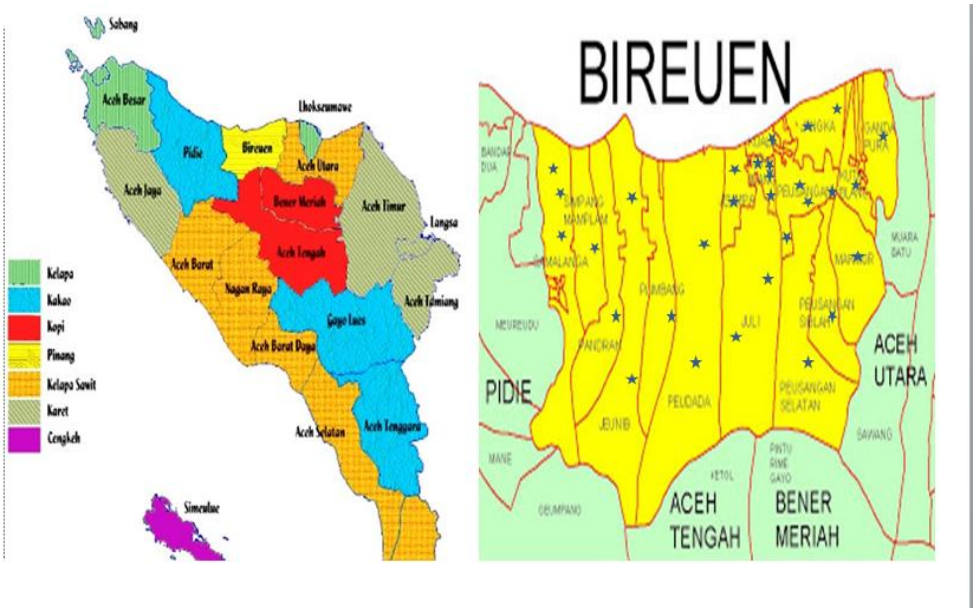


Fig. 3.1. Map Aceh Province and Bireuen District

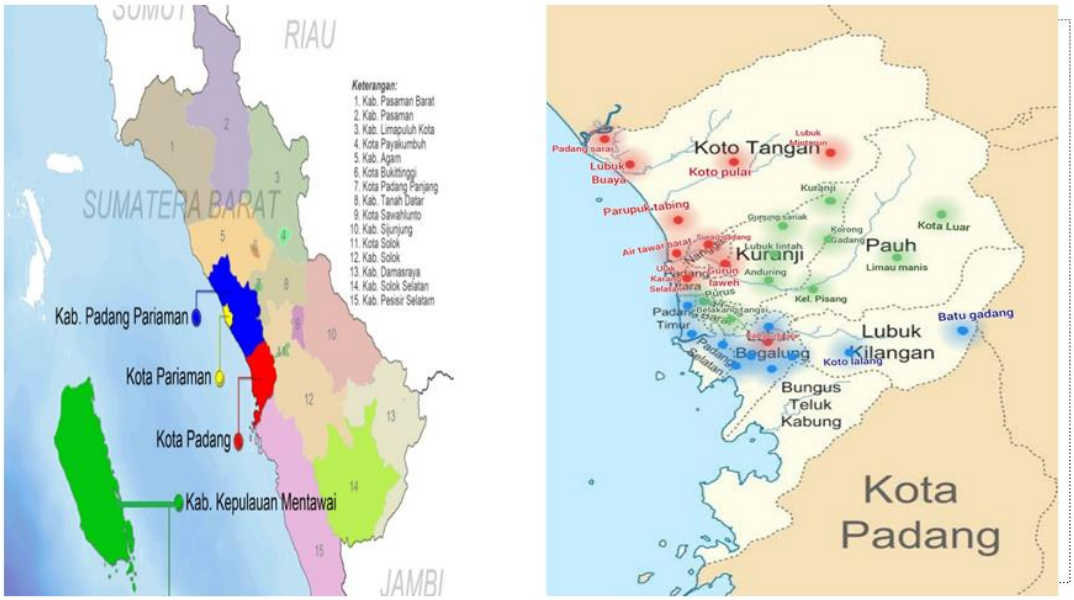


Fig. 3.2 Map West Sumatera Province and Padang City

3.3 Information Sources

For the quantitative survey, the respondents were mother/ caregivers of children under five. While qualitative information was gathered from the community level (caregiver, health workers, community and religion leaders involved in this assessment). Data collection for the CIS was carried out through face to face interview at respondent's house, while for qualitative approach, the interviews were carried out at informant's office or places where they work.

3.4 Sample Size for Quantitative

The sample size for the survey has been calculated using Lameshow's formula for estimating proportion with Design Effect=2 for variety effect because the study used a two stage sampling methods.(WHO (WORLD HEALTH ORGANIZATION), 2015)

Formula: $n = Z^2\alpha\ P\ (1\text{-}P) / d^2$

Note: n= sample size
Z^2= z value (probality of z) in each value of α
α= Value of significantly
P= value of proportion of people have good behaviour
d^2= value of precision (different of P in population and p in sample)

Anticipating immunization coverage of 80% (the reported coverage based on the demographic and health survey in 2002) with a desired precision of the estimated coverage of ±12% with 90% confidence the estimated minimal sample size was 123. Since cluster sampling was to be used, a design effect of 2 was used leading to a sample size of 246 (rounding 270) subjects from each of the target population in

one district in the province.

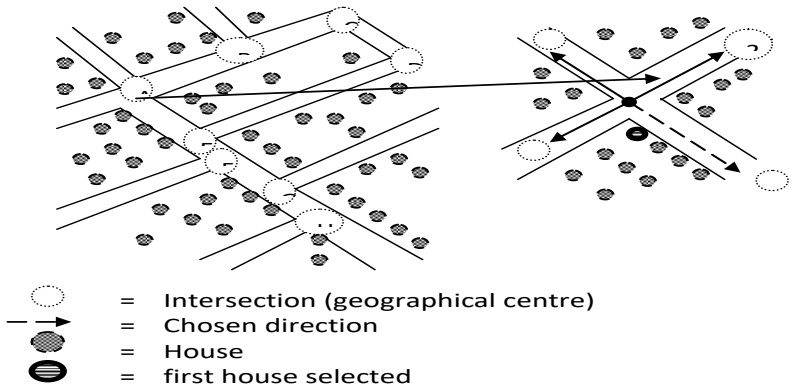
Table 3.1 Samples Size at Selected District/City

Province	District/City	Sample Size
West Sumatera	Padang City	30 x 9 = 270 samples
DI Aceh	Bireuen	30 x 9 = 270 samples

The sample selection used two stages

- Stage 1, selection of cluster, 30 clusters were selected randomly by Proportional Probability to Size (PPS)
- Stage 2, selection of eligible House Holds (HH) with mothers who have children under 5 years old. After 30 clusters were randomly selected among all cluster/villages in the district/city, HH were randomly selected by random walk-in figure below:

Selection of house and respondents:

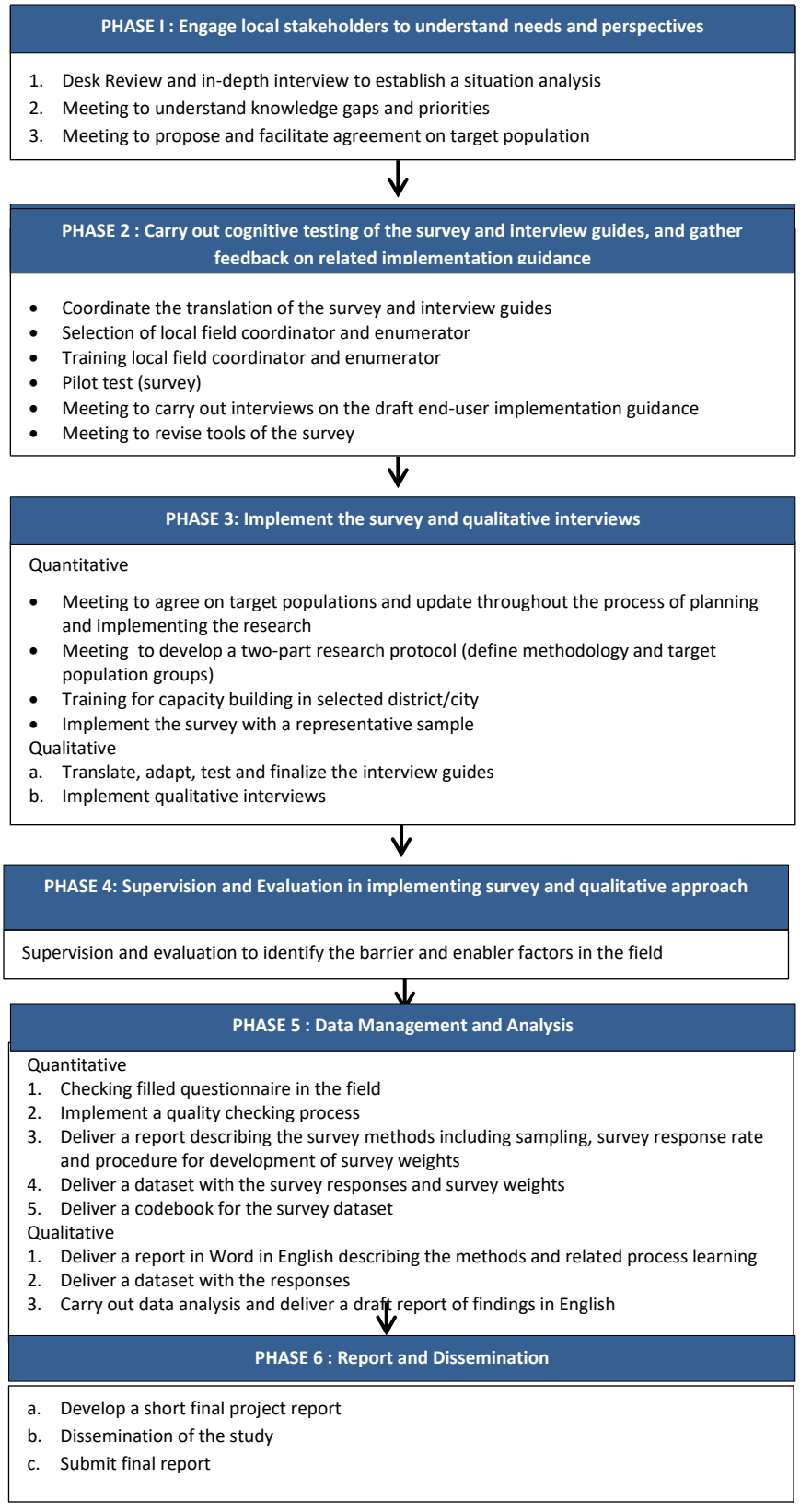


- Map of cluster selected
- Identified all junctions and mark with code
- Selected junction randomly
- Started randomly selected HH and selected next HH with interval.

3.5 Phases of Key Activities

By using an operational framework of behavior social driver for Social and Behaviour Change Programming, we assessed the tools that were being adopted, tested and used in Indonesia, to generate local data to guide programme planning and implementation of vaccination in Indonesia.

The key activities are explained in flowchart below:


PHASE I : Engage local stakeholders to understand needs and perspectives
1. Desk Review and in-depth interview to establish a situation analysis
2. Meeting to understand knowledge gaps and priorities
3. Meeting to propose and facilitate agreement on target population
PHASE 2 : Carry out cognitive testing of the survey and interview guides, and gather feedback on related implementation guidance
• Coordinate the translation of the survey and interview guides
• Selection of local field coordinator and enumerator
• Training local field coordinator and enumerator
• Pilot test (survey)
• Meeting to carry out interviews on the draft end-user implementation guidance
• Meeting to revise tools of the survey
PHASE 3: Implement the survey and qualitative interviews
Quantitative
• Meeting to agree on target populations and update throughout the process of planning and implementing the research
• Meeting to develop a two-part research protocol (define methodology and target population groups)
• Training for capacity building in selected district/city
• Implement the survey with a representative sample
Qualitative
a. Translate, adapt, test and finalize the interview guides
b. Implement qualitative interviews
PHASE 4: Supervision and Evaluation in implementing survey and qualitative approach
Supervision and evaluation to identify the barrier and enabler factors in the field
PHASE 5 : Data Management and Analysis
Quantitative
1. Checking filled questionnaire in the field
2. Implement a quality checking process
3. Deliver a report describing the survey methods including sampling, survey response rate and procedure for development of survey weights
4. Deliver a dataset with the survey responses and survey weights
5. Deliver a codebook for the survey dataset
Qualitative
1. Deliver a report in Word in English describing the methods and related process learning
2. Deliver a dataset with the responses
3. Carry out data analysis and deliver a draft report of findings in English
PHASE 6 : Report and Dissemination
a. Develop a short final project report
b. Dissemination of the study
c. Submit final report

The table below provides detailed explanation about activities. methods, informants and the output of each activity.

Table 3.2. Activities. Methods, Informant/Participant and Output of the Assessment

Activities	Method	Informants/ participants	Output
PHASE 1: Engage local stakeholders to understand needs and perspectives			
a. Review existing programme data to establish a situation analysis and insights into drivers and barriers to vaccination	- Desk review - Meeting / Discussion - In-depth Interview (IDI)	- WHO - Partners - Stakeholders	- Document of review result (situation of analysis of immunization) - Description of drivers and barriers to vaccination
b. Gather inputs of WHO, partners and key programme stakeholders to understand knowledge gaps and priorities	Meeting/ Discussion	- WHO - Partners - Programme stakeholders	Document of the input
c. Propose and facilitate agreement on target populations based on the situation analysis and stakeholder inputs	Internal meeting	Consultant	Report of situation analysis and stakeholder inputs
d. Adapt and share the draft survey and interview guides	Internal meeting	Consultant	Draft the survey and interview guides
PHASE 2: Carry out cognitive testing of the survey and interview guides, and gather feedback on related implementation guidance			
a. Coordinate the translation of the survey and interview guides from English to Bahasa Indonesian by two independent translators with adjudication of disagreements by a third translator (i.e., parallel translation)	- Interview and review	Third party of translators	Document of the translation of the survey and interview guides in Bahasa Indonesian version
b. Recruit, train and oversee local research teams to contribute to data gathering	- Selection of local field coordinator, enumerator - Training	- Local partner - Consultant	- Local field coordinator and Enumerator selected - Place and time for training in district
c. Cognitively test the **survey and** pilot test the **interview guides** - low and high levels of education. - From geographically diverse areas and include rural and urban respondents.	Cognitively test (survey) In-depth interview	30 parents or primary caregivers for children younger than age 5	- Document data gathered and translation to English. - Make recommendations for revising the

Activities	Method	Informants/ participants	Output
- 20% will be fathers or male primary caregivers of the children - will be in two rounds with adjustment to the survey after roughly half are completed			survey using the standard form
d. Liaise with global experts associated with original development of the survey to agree on revisions to the survey	Meeting	- WHO - Global expert - Stakeholders (local and national)	- Revised tools of the survey
b. Agree on a final version of the survey with inputs from local stakeholders and global experts	Meeting	- WHO - Global expert - Local stakeholders	- Final tools of the survey
PHASE 3: Implement the survey and qualitative interviews			
a. Coordinate with WHO, partners and stakeholders to agree on target populations and convene regular meetings for update throughout the process of planning and implementing the research	Meeting	- WHO - Partners - Local stakeholders	- Document of the meeting (draft proposal of two part research protocol)
b. Develop a two-part research protocol, with WHO and inputs of local stakeholders, to define methodology and target population groups (in consultation with local stakeholders) for the implementation of 1) the survey; and 2) qualitative interviews	Meeting	- WHO - Local stakeholders	Proposal of two research protocol
c. Capacity building in selected district/city	Training (including interview exercise at field) for DHO staff/partner	- Consultant - WHO - National Stakeholders	Understanding and interview skills of the standard instrument and guidance
d. Specifically concerning the survey and qualitative approach:			
▪ Implement the survey with a representative sample of potentially 400-500 parents of children younger than age 5 from across Indonesia. The survey has about 20 items on vaccination and 20 demographic items.	- Face to face interview - Spot check in the field	Sample 540 parents of children younger than age 5 from across Indonesia	- Filled questionnaires
▪ Implement qualitative interviews in specific population groups identified. Ensure documentation	- IDI - Target sampel	- District local partner - Consultant	Document of interview

Activities	Method	Informants/ participants	Output
of data gathered. ▪ Target samples in each district, caregiver: 4 , community influencer 16, health worker: 4, program manager: 2			
PHASE 4: Supervision and Evaluation in implementing survey and qualitative approach			
Conducting supervision and evaluation to identify the barrier and enabler factors in the field	- Field supervision	- Consultant	Report of supervision and evaluation (barrier and enabler factors)
PHASE 5: Data Management and Analysis			
▪ Checking filled questionnaire in the field	- Checking of questionnaire completeness	- enumerator and field coordinator	- Completed questionnaire
▪ Implement a quality checking process for overseeing administration of the survey and recording the answers. If paper surveys are used, have two people independently enter the data and then compare and correct the dataset.	- Double entry of data	- Data entry clerks - Data manager	- Cleaned data
▪ Deliver a report in Word in English describing the survey methods including sampling, survey response rate and procedure for development of survey weights	- Internal meeting of consultant	Consultants	Report in Word in English describing the survey methods including sampling, survey response rate and procedure for development of survey weights
▪ Deliver a dataset with the survey responses and survey weights in an Excel or SAS data file with one row per participant.	- Internal meeting of consultant	Consultant	Report of dataset with the survey responses and survey weights in an Excel or SAS data file with one row per participant
▪ Deliver a codebook for the survey dataset that indicates survey question numbers, survey items, variable names, response options and codes for each possible response option	- Internal meeting of consultant	Consultant	Report of a codebook for the survey dataset that indicates survey question numbers, survey items, variable names, response options and codes for each possible response option
e. Specifically concerning the qualitative interviews:			

Activities	Method	Informants/ participants	Output
▪ Translate, adapt, test and finalise the interview guides for use in Indonesia, also based on target groups identified in the protocol, e.g. health workers, community leaders, local authorities	- Internal meeting of consultant	Consultant	Document of translation
▪ Deliver a report in Word in English describing the methods and related process learning	- Internal meeting of consultant	Consultant	Report in Word in English describing the methods and related process learning
▪ Deliver a dataset with the responses	- Internal meeting of consultant	Consultant	Report of data set with the responses
▪ Data from qualitative approach used content analysis	- Internal meeting of consultant	Consultant	Report of matrix of IDI result
▪ Carry out data analysis and deliver a draft report of findings in English	Analysis data	Data manager/ Researchers	Draft report of findings in English
▪ Deliver an actionable summary report for sharing with local stakeholders	- Internal meeting of consultant	Consultant	Report on an actionable summary report
PHASE 6: Report and Dissemination			
Develop a short final project report summarizing learning and insights from the overall research activities	- Internal meeting of consultant	Consultant	Report of a short final project report summarizing learning and insights from the overall research activities
Dissemination of the study at district	- Meeting	- WHO - Partners - National/Local stakeholders - District/city health staff	Report of dissemination
Submit final report	- Internal meeting of consultant	Consultant	Final report submitted

To gather all information needed to answer the objectives in each phase, Table below shows target, the method used and topic of questions/discussion.

Table 3.3 Target, Method and Topic of questions/discussion

No	Target	#	Method	Topic of questions/discussion plan
A	**Province**			
1	EPI programmer	2	IDI	- Situation of vaccination at province level (coverage, facility, human resources, stock, etc.) - Barriers and enabler factors in improving vaccination (geography, demography, social structure, norms/values, institution/agency) - Social modalities may be used at district (advantages and disadvantages)
B	**District/City**			
1	EPI programmer	2	IDI	- Situation of vaccination at district (coverage, facility, human resources, stock, etc.) - Perception of vaccination in community - Barriers and enabler factors in improving vaccination (geography, demography, social structure, norms/values, institution/agency) - Social modalities may be used at district (advantages and disadvantages)
2	Partners	2		
3	Stakeholder	2		
C	**Sub District Level**			
1	Head of health center, EPI programmer and midwife at health center	1	IDI	- Situation of vaccination at sub-district (coverage, facility, human resources, stock, etc.) - Perception of vaccination in community - Barriers and enabler factors in improving vaccination (geography, demography, social structure, norms/values, institution/agency) - Social modalities may be used at district (advantages and disadvantages)
2	Community leader	2	IDI	- Perception of vaccination in community - Barriers and enabler factors in improving vaccination (geography, demography, social structure, norms/values, institution/agency) - Social modalities may be used at district (advantages and disadvantages)
3	Religion leader	2	IDI	- Perception of vaccination in community - Barriers and enabler factors in improving vaccination (geography, demography, social structure, norms/values, institution/agency) - Social modalities may be used at district (advantages and disadvantages)
D	**Village**			

No	Target	#	Method	Topic of questions/discussion plan
1	Cadre/health worker	1	IDI	- Perception of vaccination in community - Barriers and enabler factors in improving vaccination (geography, demography, social structure, norms/values, institution/agency) - Social modalities may be used at district (advantages and disadvantages)
2	Village midwife	1	IDI	- Situation of vaccination at village (coverage, facility, human resources, stock, etc.) - Perception of vaccination in community - Barriers and enabler factors in improving vaccination (geography, demography, social structure, norms/values, institution/agency) - Social modalities may be used at district (advantages and disadvantages)

Table 3.4 Type and Number of Informants

No	Level	Informant	#Informant in Bireuen	#Informant in Padang	Total Informants
1	**Province**	Kabid/Kasie Imunisasi PHO	1	1	2
2	**District/City**	Kabid/Kasie Imunisasi DHO	1	1	2
		Muhammadiyah/NU	1	1	2
		IBI	1	1	2
		PKK	1	1	2
		Majelis Syariah	1	-	2
		MUI/MPU	1	1	2
3	**Sub-district**	Head of Health Center	2	2	4
		Immunization coordinator	2	2	4
		Midwife	2	2	4
		Community Leaders	2	2	4
		Religious Leader	2	2	4
4	**Village**	Caregiver	4	4	8
		Village Midwife	4	4	8
		Cadre	4	4	8
	TOTAL INFORMANTS		**29**	**28**	**57**

3.6 Research Team

The Department of Epidemiology, Faculty of Public Health, Universitas Indonesia has previous experiences working with the WHO in conducting vaccination surveys, and adopting quantitative and qualitative methods. The PI for this activity is Dra. Oktarinda, M.Si, as a senior researcher with the main focus area on qualitative studies, and the co-PI is Dr. Tri Yunis Miko Wahyono, M.Sc. The PI and the research team have experience in qualitative and quantitative research. The research team also has strong experience working with central and local governments.

Principle investigator	:	Dra. Oktarinda, M.Si
Co-Principle investigator	:	Tri Yunis Miko Wahyono, MD, M.Sc, PhD
Researcher	:	Fitriyani, SKM, M.Epid
		Husnul Khatimah, SST, MKM

3.7 Ethics

Ethical approval for this project was obtained from the University of Indonesia's Institutional Review Board prior to data collection. Informed consent was sought before the survey and in-depth interviews, including consent to complete audio recording during in-depth interviews. Researchers maintained data confidentiality and respondents' privacy by keeping all documents safe in the office with a guarantee that unauthorized people cannot access the data.

3.8 Budget

WHO Indonesia collaborated with National EPI program MoH RI.

3.9 Timeline

The activities of BeSD were started on mid May 2020 and ended in 15 November 2020.

IV. FIELD TESTING RESULT

4.1. Meeting with WHO, MoH and Other Partners

A total of 10 meetings have been held with WHO, MoH and other partners such as UNICEF and global experts. Phase 1 included discussion on engaging local stakeholders to understand needs and perspectives and phase 2 included carrying out cognitive testing of the survey and interview guides, and gathering feedback on related implementation guidance. An orientation workshop for field testing, facilitated by WHO HQ, was conducted on July 1, 2020. This activity shared results from previous BeSD study implementation process and how to use the BeSD Tools. The topics discussed during the training were an overview of the drivers of vaccination, orientation on the BeSD tools, objectives and process for testing of the tools, orientation on cognitive interviewing for the survey and data collection tools, orientation on cognitive interviewing for the in-depth interview guides and data collection tools and practice. Topic and meeting schedule of BeSD is attached in the Annex.

4.2. Result of Cognitive and Qualitative Interviews Testing

The implementation of cognitive testing and qualitative interviews was conducted in two health centers in Depok City, Sukmajaya Health Center and Cilodong Community Health Center. Sukmajaya health center was chosen to represent an urban area and Cilodong health center represented a rural area. Testing activities were conducted for two days at each health center. Respondents selected for cognitive testing were 12 mothers and 2 fathers in each health center with criteria of higher education, low education, complete immunization and incomplete immunization. The stages of the Cognitive Testing and Qualitative Interview Activities carried out were:

a. Testing Permit at the Depok City Health Office, Kesbangpol and health center
b. Data collection activities in collaboration with midwives at health centers and health cadres
c. Cognitive interviews conducted by 7 interviewers who have received training from WHO HC
d. In-depth interviews with qualitative guides carried out after the cognitive interview activities are completed

4.3. Testing Information

a. Location: Sukmajaya and Cilodong Health Centers, Depok City
b. Date: 3-4 August at Sukmajaya, 6-7 August 2020 at Cilodong
c. Interviewer: 7 persons
d. Informants successfully interviewed for Cognitive Interview: 24 mothers and 4 fathers
e. Informant for Qualitative Interview: 16 persons
f. Cognitive Interview Result:
    - Length of cognitive interview: 60-100 minutes
    - Informants are welcome and responsive
    - Main questions are easy to respond to

- After 30-40 minutes, informants started feeling uneasy, restless because some prompt questions are difficult to answer, need to think carefully to understand and explain it
- We, as interviewer tried by repeating the question and doing probes:

g. Qualitative Interview Result:
   - Caregiver: most questions can be answered (30 minutes)
   - Community influencer: Most questions can be answered. Religion leaders had difficulty in understanding the questions than others, because they are not involved in immunization activity in the community (30 minutes)
   - Health care and programme manager: Questions can be answered (around 60 minutes)

4.4. Summary of Cognitive Interview (Probe questions)

After testing, several questions were revised to make it easier for respondents to understand, and some questions were also added to get more complete information.

- The question regarding age is completed with the respondent's and child's date of birth. Age of the child was recorded in months (not in years)
- Religion and language are adjusted to religion and language in Indonesia
- Questions on How much do you think vaccinating children protects other people in your community from diseases? This question "how much" is difficult for respondents to answer. Thus, before asking "how much do you think..etc" we suggested to add some questions before it. (1) Do you think all children should be immunized? (2) Do you think vaccination can protect your child from diseases? (3) Do you think vaccinating children can protect other people from diseases?
- The question "Have you ever taken your child to get vaccinated? is followed by additional question "Where did you take your child vaccinated?". This was important to the places where respondents took their child for immunization.The question "In the last year, have you seen or heard anything bad about vaccines?" If respondent answers YES, then this is followed by question inquiring about what bad things they have heard. This question is for more in-depth information.
- Questions related to leader norms (i.e. Do you think your community leaders/religious leader want you to vaccinate your child?) was asked separately for community leaders and religious leaders because they have different roles in society so they can have different influences.
- In addition, questions related to knowledge about missed vaccination were also added to get further information about how respondents' knowledge contributes to missed vaccination. The revised questions are in the Annex.

4.5. Summary of Qualitative Interview

a. In general tools of qualitative interview could be applied.
b. Caregiver: most questions can be answered (30 minutes)
c. Community influencer: Most questions can be answered, but for religious leaders, they felt that immunization activity was cadre's responsibility (30 minutes) During exploration about community influencer's responsibility, the findings were unexpected as the informants were less involved in immunization activity. (quotation)

d. Health worker and programme level worker: Questions can be answered (around 60 minutes).
e. Tools for caregiver and community influencers were less modified. Most of them were understood and answered.
f. Tools for health worker and programme level worker have additional questions after testing. The additional questions considered the framework of Increasing Vaccination Model of BeSD.

4.6. CIS Testing Result

Data from the CIS tools (questionnaire) were edited, cleaned and analyzed descriptively. We successfully interviewed a total of 28 respondents (14 respondents at Sukmajaya health center (as urban area) and 14 respondents at Cilodong health center (as rural area). A

4.6.1. Socio-Demographic of Respondent

Based on the results of descriptive analysis, most respondents in Sukmajaya were female (85,7%) and aged between 35-39 years old (39,3%), while in Cilodong they were 25-29 years old and 35-39 years old (each 28,6%). Most respondents have good education level that is 46,4% for upper secondary and 14,3% for diploma or university. Most of the respondents did not work (as housewives, 53,6%) and followed by working from home (32,1%).

4.6.2. Demographic of children

Based on results of descriptive analysis, the female children is slightly more than males (53,6% vs 46,4%). In Sukmajaya Puskesmas most children are 12-23 months old, while in Cilodong, children are 24-35 months.The immunization status of children was obtained mostly based on respondents' recall (not from immunization records/card), because immunization record/card were not available. Almost all respondents acknowledged the importance of immunization for children's health. One respondent answered that it is not very important.

4.6.3. Distribution Result of Cognitive Interview (Main Questions)

Based on the results of the descriptive analysis, 64.3% of respondents at the Sukmajaya Health Center said that immunization was very important. In Cilodong Health Center as many as 57.2% of respondents answered that immunization was very important.

The understanding that immunization can protect other children in the community differs for each respondent. In the Sukmajaya health center, 42.9% of respondents said that by immunization would protect other children in the community, however, in the Cilodong health center, 14.3% answered that immunization in children did not really protect other children in the community.

Most of the respondents' said that their religion or religious beliefs encourage immunization for children. In Sukmajaya health center 85.7% said that their religion supports immunization as well as at 92.9% in Cilodong health center.

At the Sukmajaya Health Center, 71.4% of respondents said that immunization was safe for children's health, although there were still 57.1% of respondents who were worried that immunization could cause serious problems. At Cilodong Health Center 57.1% of respondents said that immunization was safe for children's health, but 42.9% of respondents were worried that immunization could cause serious problems.

All respondents in the Sukmajaya and Cilodong health centers know where the immunization service is provided (100%). All respondents at the Sukmajaya health center have brought their children for immunization previously, while 14.3% of respondents in Cilodong health center still did not bring their children for immunization.

As many as 92.9% of respondents at the Sukmajaya Health Center and 85.7% of respondents in PKM Cilodong wanted to get all the recommended immunizations for their child. In many cases the decision makers to immunize children were mothers with percentage of 57.1% and 50% respectively in the Sukmajaya Health Center and Cilodong Health Center.

Most respondents in Sukmajaya health center (71.4%) and Cilodong health center (64.3%) needed to ask permission to bring immunized children. At Sukmajaya health center, 50% respondents had heard something bad about immunization, compared to 42.9% at Cilodong health center.

In the Sukamjaya health center, 100% respondents said that most parents they knew immunized their children while at the Cilodong health center, only 71.4% said so.

Majority of respondents, both in the Sukmajaya Health Center (85.7%) and Cilodong Health Center (92.9%) said that their close family or neighbors wanted the respondent's child to be immunized.

In the Sukmajaya health center 71.4% respondents said that religious leader or community leader wanted their children to be immunized and 85.7% at Cilodong health center. The data also shows that 78.6% respondents in Sukmajaya health center trust in immunization service facilities and 85.8% respondents at Cilodong health center also trust health facilities.

At the Sukmajaya health center, 100% respondents said that health workers recommended that children be immunized, this was slightly lower at the Cilodong health center (85.7%).

A total of 71.5% respondents at the Sukmajaya Health Center and 64.3% of the respondents at the Cilodong Health Center said that it was easy to get immunization services. Most of the respondents also said that the cost of immunization was cheap with the respective percentages in the Sukamjaya health center and Cilodong health center being 57.2% and 71.5% respectively.

Respondents who had been rejected immunization services were 21.4% at Sukmajaya health center and 41.7% at Cilodong health center. For self-satisfaction, 71.4% of respondents at Sukamjaya Health Center were satisfied and 82.3% at Cilodong Health Center were satisfied with the immunization services.

At the Sukmajaya health center, 85.7% of respondents felt valued by health workers while at the Cilodong health center as only 75% felt valued.

V. RESULT

The Childhood Immunization Survey (CIS) and qualitativive approach had been conducted successfully in Bireuen District and Padang City. There were six interviewers in each district/city and they were divided into 3 teams, so one team covered 20 clusters in each site. In each district/city there was one field coordinator from Jakarta who arranged all field activities including obtaining permits at puskesmas and village. He/She arranged the field schedule and strategy for data collection as well as conducting in-depth interviews at village level. Below is table description of data collection.

Table 5.1 Description of Data Collection

No	Activity	Bireuen	Padang CIty
1	Training date	22-23 September 2020	22-23 September 2020
2	CIS survey data collection	24 September – 3 October 2020	24 September – 3 October 2020
3	In-depth interview	24 September – 3 October 2020	24 September – 3 October 2020
4	Number of respondents interviewed	270 respondents	270 respondents
5	Number of in-depth interviews - Caraegivers - Community influencers - Health worker - Program manager level	 4 16 4 2	 4 16 4 2

5.1. Description of Padang City

Padang is the capital of Sumatera Barat Province which is located at the west coast of Sumatera Island. In 2017, population in Padang City was 939.112 people. This was an increased of 11.944 people from previous year. Thus, the density increased from 1.334 to 1.351 lives per square kilometer.Occupation based on gender participation, are 60 percent working men and 40 percent working women. Numbers of job seekers from population age 15 and over with economically active were 9 percent.

Padang Government has provided a number of health facilities in order to reach all layers of communities in every aspect, cost and distance. In Padang there are 23 public health centres (puskesmas), and 116 clinic/health centres. Whilst the number of public and private hospitals are 20 units. The number of specialist doctors, dentist, and generalist doctors are 1.780 doctors. Health services for maternal and child including immunization services are reflected in the increased number of Posyandu facilities scattered in all districts in Padang CIty. In 2018 there were 914 posyandu.

5.2. Description of Bireuen District

Bireuen District is a strategic location as transit area to the area of the central part of Aceh. Therefore, Bireuen has 25.21 percent of its income from the trade sector. Trading sector is the second largest income in Bireuen after agriculture. Bireuen name is used as the name of the Bireuen Regency. It has a wide range of different historical backgrounds.

Bireuen District population for 2018 was 461.726 people with 225.920 males and 235.806 female. The population growth in 2017 is 1,86 percent for male and 1,89 percent for female population. Mostly classified to population aged 15 years and over who are working with number of percentage about 88.98 percent. Most people (48,195) worked in the wholesale and retail trade sector, restaurants, hotels and restaurants in 2018. In 2018, Net Enrollment Rate in Bireuen for SD / MI was 96.27 percent, SMP / MTs was 83.37 percent and the level of SMA / SMK / MA was 72.82 percent.

5.3. Childhood Immunization Survey (CIS)

The results of the childhood immunization survey consists of socio demography of respondents and children characteristics. It is followed by variables of confidence in vaccine benefits, confidence in protecting others, religious beliefs, confidence in vaccine safety, know where to get vaccinated, took children for vaccination, intention, motivation extent, mother's decision autonomy, mother's travel autonomy and misinformation, descriptive social norms, family norms and community leader norms, confidence in providers, recommendation provider, ease of access, affordability, missed vaccination, vaccination availability, service satisfaction, respect from provider, information from health workers and knowledge.

5.4. Socio-Demographics of Respondents

Description of socio-demographic characteristics of respondents in this study consists of the characteristic of the respondents and the characteristics of the children. Information about characteristic of respondents include gender of respondents, age of respondents, marital status, work for pay outside from home, occupation, education level, religion, and daily languange. The description of respondents' characteristics illustrates the demoghrapics factors. There was an equal number of participants at Bireuen district and Padang City (270 participants each) and the total sample was 540 participants.

Table 5.2. The Dfifference of Socio-Demographic Proportion in Two Region (Bireuen District and Padang City)

No	Variables	Bireuen District (n=270)	Padang City (n=270)	Total (N=540)	P Value
1.	**Gender of respondents**				1.000
	Male	4.4	4.1	4.3	
	Female	95.6	95.9	95.7	
2.	**Age of respondents**				0.064
	< 20 years old	3.7	1.9	2.8	
	21 - 30 years old	34.8	37.0	35.9	
	31 - 40 years old	47.0	52.6	49.8	
	41 - 50 years old	11.9	5.6	8.7	
	> 50 years old	2.6	3.0	2.8	
3.	**Marital status**				0.63
	Single (never married)	2.6	1.5	2.0	
	Married / living with partner	95.9	96.7	96.3	
	Separated / Divorced	1.5	1.9	1.7	
4.	**Work for pay outside from home**				0.13
	Yes	21.9	16.3	19.1	
	No	78.1	83.7	80.9	
5.	**Occupation of respondents**				0.0001
	Work at home (Earn money)	6.7	21.1	13.9	
	House wife	71.9	65.9	68.9	
	Civil servant	3.3	1.5	2.4	
	Employee or labourer	0.7	5.2	3.0	
	Farming	1.1	0.0	0.6	
	Self-employed	2.2	0.7	1.5	
	Owner or employer	4.1	1.5	2.8	
	Teacher	3.7	2.2	3.0	
	Student	0.4	0.4	0.4	
	Labour	1.1	0.7	0.9	
	Other	4.8	0.7	2.8	
6.	**Education level of respondents**				0.0001
	No education	1.1	0.0	0.6	
	Primary	13.3	5.9	9.6	
	Lower secondary	22.6	10.4	16.5	
	Upper secondary	37.8	62.2	50.0	

No	Variables	Bireuen District (n=270)	Padang City (n=270)	Total (N=540)	P Value
	Higher	25.2	21.5	23.3	
7.	**Religion**				0.48
	Islam	100.0	99.3	99.6	
	Catholic	0.0	0.7	0.4	
8.	**Daily language**				0.0001
	Indonesia Language	12.2	13.7	13.0	
	Minang/Padang Language	0.0	85.6	42.8	
	Aceh Language	87.8	0.0	43.9	
	Arabic	0.0	0.4	0.2	
	Other	0.0	0.4	0.2	

Gender: The proportion of gender of respondent is mostly similar between Bireuen District and Padang City where most of respondents were female (95.6%) in Bireuen District and Padang City (95.9%), with the total sample equaling 95.7% female as shown in table above. Statistical analysis results show there is no difference in gender of respondents in Bireuen District and Padang City (P=1,000 or P>0,05).

Age: Age distribution of respondents depicted in the table shows that there is a similar age group distribution between Bireuen District and Padang City. The proportion of age group in 31-40 years old is highest in this survey (47.0%) at Bireuen District and at Padang City (52.6%) followed by 21-30 years old at Bireuen District (34.8%) and at Padang City (37.0%). Statistical analysis showed that there is no difference in age of respondents in Bireuen District and Padang City (P=0,064 or P>0,05).

Marital status: More than 95% of respondendents were married at Bireuen District (95,9%) and at Padang City (96.7%). Statistical analysis result show there is no difference marital status of respondents in Bireuen District and Padang City (P=0,63 or P>0,05).

Work for pay outside of home: The results of the study showed that most of respondents did not work for pay outside of home at Bireuen District (78.1%) and at Padang City (83.7%). The proportion of respondents or caregivers who did not work outside home is higher at Bireuen District which is a rural area (21.9%) compared to Padang city which is an urban area (16.3%). Statistical analysis results show there is no difference work for pay outside of home in Bireuen District and Padang City (P=0,13 or P>0,05)

Occupation: Most respodents were housewifes (71.9%) at Bireuen District and at Padang City (65.9%) followed by work at home (earn money) (6.7%) at Bireuen District and at Padang City (21.2%). From these results it can be seen that although the status of working outside the home is lower at Padang City but the status of working at home (earn money) is higher at Padang City compared to Bireuen District as shown in Figure 6.5 below. The definition of work at home (earn money) is when mother has job/work or bussiness from home or at home (work for pay inside at home/earn money) such as trading or online shop bussiness from home.Housewife is a married woman who does not have a paid job (not earning money)

but instead looks after her home and children such as cooking, cleaning, etc. Statistical analysis results show there is difference occupation of respondents in Bireuen District and Padang City (P=0,0001 or P<0,05).

Education level: The distribution of educational level was mostly similar at Bireuen District and at Padang City. The highest level of education is upper secondery (37.8%) at Bireuen District and (62.2%) at Padang City followed by the higher-level education was (25.2%) at Bireuen District and (21.5%) at Padang City. These results showed that the proportion of high-level education (upper secondary and higher) is higher at Padang City (83.7%) which is an urban area compared with at Bireuen District (63.0%) which is a rural area. Statistical analysis results shows there is difference educational level of respondents in Bireuen District and Padang City (P=0,0001 or P<0,05).

Religion: Study results show that almost all respondents follow Islamin Bireuen District (100%) and Padang City (99.3%). The provinces of Aceh (Bireuen District) and West Sumatra (Padang City) are areas with the majority of the Muslim population. Statistical analysis results show there is no difference religion of respondents in Bireuen District and Padang City (P=0,48 or P>0,05).

Daily language: Most respondents use the local language. At the Bireuen District, respondents used Aceh language (87.8%) and at Padang City , respondents used Minang or Padang language (85.6%). In the provinces of Aceh and West Sumatera, langauge is influenced by religion (Islam) and culture (Aceh and Minang). Statistical analysis results show there is a difference in daily language of respondents in Bireuen District and Padang City (P=0,0001 or P<0,05).

5.5. Children Characteristics

Information about characteristic of children is presented in the table below. There were equal number of children at Bireuen district and Padang City (270 samples each) with the total sample were 540 samples of children under five.

Table 5.3. The Dfifference of Socio-Demographic Proportion in Two Region (Bireuen District and Padang City)

No	Variables	Bireuen District (n=270)	Padang City (n=270)	Total (N=540)	P Value
1.	**Relationship respondents with children**				0.13
	Mother	94.4	94.4	94.4	
	Father	1.5	0.0	0.7	
	Grandparent	3.0	3.3	3.1	
	Uncle or Aunt	0.4	1.9	1.1	
	Brother or Sister	0.7	0.4	0.6	
2.	**Gender of children**				0.73
	Male	57.4	55.9	56.7	
	Female	42.6	44.1	43.3	
3.	**Age of children**				0.007

	1 - 12 months	28.5	35.2	31.9	
	13 - 24 months	25.6	31.1	28.3	
	25 - 36 months	19.3	18.1	18.7	
	37 - 48 months	12.6	10.0	11.3	
	49 - 59 months	14.1	5.6	9.8	

Relationship of respondents with children: Mostly (>90%) respondents in this study are mother of children both at Bireuen District (94.4%) and at Padang City (94.4%). From the results of this study, it can be seen that the person who cares for the child the most is the mother because the criteria of the respondent in this study are the person or caregiver who cares for the child most often and who knows best about the immunization status of children. There are about 3% respondents of this study who are grandparents (3.0%) at Bireuen District and (3.3%) at Padang City. Statistical analysis results show there is no difference status of respondents's relationship with children in Bireuen District and Padang City (P=0,13 or P>0,05).

Gender of children: The proportion of gender of children under five were almost similar at Bireuen District and Padang City. Proportion of male is slightly higher than females (57.4% and 42.6% respectively) at Bireuen District and (55.9% and 44.1% respectively) at Padang City as shown in Figure 6.10. Statistical analysis results show there is no difference gender of children in Bireuen District and Padang City (P=0,73 or P>0,05).

Age of children: The proportion of age group in this study is most similar between at Bireuen District and Padang City. The proportion of children who 1-12 months old was the highest in this survey (28.5% and 35.2%) at Bireuen District and Padang City followed 13-24 months old (25.6% and 31.1%) at Bireuen District and Padang City. The proportion of children who were 37-48 months old was the lowest at Bireuen Distict (12.6%) whereas at Padang City children who were 49-49 months old was the lowest (5.6%) as shown in the table above. Statistical analysis results show there is difference age of children in Bireuen District and Padang City (P=0,007 or P<0,05).

5.6. Description of Behavioural and Social Drivers in Childhood Immunization Survey

5.6.1. Thinking and Feeling

1) Confidence in Vaccine Benefits

Table below illustrates how important immunization is for children's health for the respondents.

Table 5.4. Confidence in Vaccine Benefits in Two Region (Bireuen District and Padang City)

No	Variables	Bireuen District (n=270) % of respondents	Padang City (n=270) % of respondents	Total (N=540) % of respondents	P Value
CONFIDENCE IN VACCINE BENEFIT					
F1	How important do you think vaccines are for your childs health? Would you say				
	Not at all	2.6	1.1	1.9	0.079

	Not very	9.3	5.6	7.4	
	Somewhat	66.7	58.9	62.8	
	Very	21.5	34.4	28	

Based on the results of the descriptive analysis, 66.7% of respondents at Bireuen district said that immunization was important, in Padang city as many as 58.9% of respondents answered that immunization was important. The table shows that there are still 2.6% of respondents in Bireuen district and 1.1% in Padang city who say that immunization was not important at all for child health. Statistical analysis results show that there is difference proportions of confidence in vaccine benefits in Bireuen District and Padang City (P=0,004 or P<0,05)

2) Confidence in Protecting Others

The table below shows that majority of respondents (80.0% in Bireuen district and 91.1% in Padang city) said that all children should be immunized. In Padang city, the percentage of respondents who said that immunization can protect child from disease is around 10% higher than in Bireuen district. Most respondents believe that immunization can protect children from diseases 82.2% in Bireuen district and 93.7% in Padang city. However, the understanding that immunization can protect other children in the community is still lacking. In Bireuen district only 56.3% of respondents believed that immunization could protect others from disease, while in Padang City it was slightly higher at 64.1%. Statistical analysis results show that there is a difference in proportions of respondents thinking that vaccination can protect their child from disease in Bireuen District and Padang City (P=0,001 or P<0,05).

Table 5.5. Confidence in Protecting Others in Two Region (Bireuen District and Padang City)

No	Variables	Bireuen District (n=270)	Padang City (n=270)	Total (N=540)	P Value
CONFIDENCE IN PROTECTING OTHERS					
F2a	Do you think all children should be immunized?				
	Yes	80	91.1	85.6	0.001
	No	20	8.9	14.4	
F2b	Do you think vaccination can protect your child from diseases?				
	Yes	82.2	93.7	88	0.001
	No	17.8	6.3	12	
F2c	Do you think vaccinating children can protects other people from diseases ?				
	Yes	56.3	64.1	60.2	0.079
	No	43.7	35.9	39.8	
F2d	How much do you think vaccinating children protects other people in your community from diseases?				
	Not at all	3.7	7	5.4	0.002
	Not very	24.1	27.4	25.7	
	Somewhat	58.9	43.7	51.3	
	Very much	13.3	21.9	17.6	

There were 58.9% of respondents in Bireuen District and 43.7% of respondents in Padang City who responded that immunization can protect other people in their community from disease, although there were still around 3.7% in Bireuen district and 7.0% in Padang city who said that immunization in children does not really protect other people from diseases in their community. Statistical analysis results show that there is difference in proportion of people thinking that vaccinating children protect other people in community from disease in Bireuen District and Padang City (P=0,002 or P<0,05).

3) Confidence in Vaccine Safety

One of the reasons people do not receive immunizations is because they are not sure about the safety of the vaccines. Confidence in vaccine safety is described in the table below:

Table 5.6. Confidence in Vaccine Safety in Two Regions (Bireuen District and Padang City)

No	Variables	Bireuen District (n=270)	Padang City (n=270)	Total (N=540)	P Value
CONFIDENCE IN VACCINE SAFETY (PRIMARY)					
F4	How safe do you think vaccines are for your child? Would you say				
	Not at all	0.7	0..4	0.6	0.007
	Not very	10.4	4.1	7.2	
	Somewhat	74.4	73.3	73.9	
	Very	14.4	22.2	18.3	
CONFIDENCE IN VACCINE SAFETY (SECONDARY)					
F5	How concerned are you that vaccines could cause your child to have a serious reaction?				
	Not at all	1.1	1.5	1.3	0.001
	Not very	21.1	37.8	29.4	
	Somewhat	59.3	53.7	56.5	
	Very	18.5	7	12.8	

The percentage of respondents in Bireuen district who said immunization was safe for children's health was 74.4%, which was similar in Padang City where 73.3% agreed that immunization was safe for children's health. However, there were still some respondents who feel that immunization is not very safe for children's health 10.4% in Bireuen District and 4.1% in Padang City. Statistical analysis result shows there is difference proportions of confidence in vaccine safety in Bireuen District and Padang City (P=0,007 or P<0,05).

A total of 59.3% of respondents in Bireuen District and 53.7% of respondents in Padang City were worried about immunization because it could cause a serious reaction, but there around 21.1% in Bireuen District and 37.8% in Padang City who were not very worried about the effects of immunization. Statistical analysis results show that there is a difference proportions of confidence in vaccine safety in Bireuen District and Padang City (P=0,001 or P<0,05).

4) Confidence In Providers

Most respondents believed in provider, 85.6% in Bireuen district and 77.4% in Padang city. Around 20.7% of respondents in Padang City highly trusted provider compared to only 9.3% in Bireuen district. There were also respondents who did not trust provider very much 5.2% in Bireuen district and 1.5% in Padang City. Statistical analysis results show that there is a difference in proportion of confidence on providers in Bireuen District and Padang City (P=0,001 or P<0,05).

Table 5.7. Confidence in Vaccine Safety in Two Region (Bireuen District and Padang City)

No	Variables	Bireuen District (n=270)	Padang City (n=270)	Total (N=540)	P Value
CONFIDENCE IN PROVIDERS					
F16	How much do you trust the health care providers who give children vaccines? Would you say…				
	Not at all	0	0.4	0.2	0.001
	Not very much	5.2	1.5	3.3	
	Somewhat	85.6	77.4	81.5	
	Very much	9.3	20.7	15	

Summary of Thinking and Feeling

- A total of 88.2% respondents in Bireuen district and 93.9% in Padang City **answered that immunization was somewhat or very important.**
- Almost all respondents (80.0% in Bireuen district and 91.1% in Padang city) said that **all children should be immunized**
- Respondents who believe that **immunization can protect children from diseases** was 82.2% in Bireuen district and 93.7% in Padang city
- A total of 56.3% of respondents in Bireuen District and 64.1% of respondents in Padang City said that **vaccinating children can protect other people in their community from disease**
- Around 88.8% respondents in Bireuen and 95.5% Padang City said that **immunization was somewhat or very safe for children's health** was 88.8% and in Padang City 95.5%.
- Around 59.3% of respondents in Bireuen District and 53.7% in Padang City were **somewhat worried immunization could cause a serious reaction**, but only 18.5% of respondents in Bireuen District and 7% in Padang City were **very worried** in the disctrics respectively
- Majority of respondents 94.9% of respondents in Bireuen district and 98.1% in Padang City **trust in their providers somewhat or very much**

5.6.2. Social Processes

1) Religious Beliefs

Religious beliefs about immunization are explained in the table below:

Table 5.8. Religious Beliefs in Two Region (Bireuen District and Padang City)

No	Variables	Bireuen District (n=270)	Padang City (n=270)	Total (N=540)	P Value
F3	Does your religion or spiritual beliefs encourage vaccinating your child, discourage vaccinating you child?				
	Discourage	4.4	8.5	6.5	0.001
	Discourage Partly	43.7	16.7	30.2	
	Encourage	46.3	64.8	55.6	
	My religion or spiritual belief have nothing to do with my vaccination decision	5.6	10	7.8	

The percentage of respondents who said that their religious beliefs supported immunization was higher in Padang City than in Bireuen District. As many as 64.8% of respondents in Padang city said that their religious beliefs supported immunization, while in Bireuen District only 46.3% said so. In Padang city and in Bireuen District there were still respondents who said that their religious beliefs did not support immunization , 8.5% and 4.4%, respectively. The graph also shows that 10% of respondents in Padang City and 5.6% in Bireuen District said that their religion or spiritual beliefs have nothing to do with their vaccination decisions. Statistical analysis results show that there is a difference proportions of Religious belief in Bireuen District and Padang City (P=0,001 or P<0,05).

2) Mother's Decision Autonomy

The table below describes the mother's decision autonomy, mother's travel autonomy, and misinformation.

Table 5.9. Mother's Decision Autonomy in Two Region (Bireuen District and Padang City)

No	Variables	Bireuen District (n=270)	Padang City (n=270)	Total (N=540)	P Value
MOTHER'S DECISION AUTONOMY					
F10	In your family. who has the final say about vaccinating your child? Would you say…				
	Mother of child	21.9	56.7	39.3	0.001
	Father of child	45.2	11.5	28.3	
	Both parents of child	30.7	29.3	30	
	Grandparent of child	2.2	2.6	2.4	
MOTHER'S TRAVEL AUTONOMY					
F11	If it was time for your child to get vaccinated. would the mother need permission to take your child to the clinic?				
	Yes	88.1	62.6	75.4	0.001

No	Variables	Bireuen District (n=270)	Padang City (n=270)	Total (N=540)	P Value
	No	11.9	37.4	24.6	
MISINFORMATION					
F12	In the last year. have you seen or heard anything bad about vaccines?				
	Yes	46.3	47	46.7	0.931
	No	53.7	53	53.3	
No	**Variables**	**Bireuen District (n=x)**	**Padang City (n=x)**	**Total (N=x)**	**P Value**
F12a	IF YES. What bad things have you seen or heard about vaccines?				
	a. COUNTERFEIT VACCINES	28	33.9	31	0.385
	b. HALAL / HARAM ISSUES	56	44.9	50.4	0.101
	c. ADVERSE EFFECTS	32	67.7	50	0.001
	d. OTHER	0	5.5	2.8	0.346

In Bireuen district and Padang city there are differences regarding people who take the final decision to immunize children. In Bireuen District, 45.2% of respondents said that the decision maker was the father of the child and 21.9% said that the decision maker was the mother. However, it is different in the city of Padang, where most decision makers were mothers (56.7%). Statistical analysis results show tat there is difference in proportions of mother's decicion autonomy in Bireuen District and Padang City (P=0,001 or P<0,05).

Mother's Travel Autonomy and Misinformation. Around 88.1% of respondents in Bireuen District and 62.6% of respondents in Padang City said that they need permission from their husband or family that to take their children to immunization service facilities. In addition, 46.3% of respondents in Bireuen District and 47% of respondents in Padang City had heard bad things about immunization in the past year. Statistical analysis results show that there is difference in proportions of mother's travel autonomy in Bireuen District and Padang City (P=0,001 or P<0,05).

In Bireuen District, the worst thing that respondents hear most often is the issue of halal and haram (56%) followed by the effect of immunization (32%). While in Padang City, the worst thing that respondents hear most often is the side effect of immunization (67.7%) followed by the halal and haram issue. Statistical analysis results show that there is difference in proportions of information that respondent hear about adverse effect in Bireuen District and Padang City (P=0,001 or P<0,05).

3) Descriptive Social Norms, Family Norms and Community Leader Norms

The table below describes the descriptive social norms, family norms and community leader norms.

Table 5.10. Descriptive Social Norms, Family Norms and Community Leader Norms in Two Region (Bireuen District and Padang City)

No	Variables	Bireuen District (n=270)	Padang City (n=270)	Total (N=540)	P Value
DESCRIPTIVE SOCIAL NORMS					
F13	Do you think most parents you know vaccinate their children?				
	Yes	84.4	91.5	88	0.017
	No	15.6	8.5	12	
FAMILY NORMS					
F14	Do you think most of your close family and friends want you to vaccinate you child?				
	Yes	78.9	91.9	85.4	0.001
	No	21.1	8.1	14.6	
COMMUNITY LEADER NORMS					
F15	Do you think your community leaders want you to vaccinate your child?				
	Yes	95.6	94.8	95.2	0.841
	No	4.4	5.2	4.8	
F15b	Do you think your religious leaders want you to vaccinate your child?				
	Yes	93.3	81.1	87.2	0.001
	No	6.7	18.9	12.8	
F15c	Who do you trust as the source of information about immunization in the community?.				
	A. Health cadre	38.9	45.6	42.2	0.139
	B. Religious leader	7	2.6	4.8	0.027
	C. Community leader	5.6	6.3	5.9	0.855
	D. Neighbors/ friend/family	25.6	31.5	28.5	0.163
	E. Health providers	61.5	61.9	61.7	1.000

Based on the results of interviews with respondents, majority of respondents 84.4% in Bireuen district and 91.5% respondents in Padang City said that most of the parents immunized their children. Meanwhile, 78.9% and 91.9% of respondents in each region said that most of the respondent's family or close friends wanted the respondent's child to be immunized. Statistical analysis results show that there is difference proportions of descriptive social norms in Bireuen District and Padang City (P=0,017 or P<0,05).

Community and religious leaders also play a role in the mother's decision to immunize her child. In Bireuen District, 95.6% of respondents and in Padang City 94.8% of respondents said that their community leaders supported them in immunizing their children. Majority also reported that religious leaders supported them in immunizing their children (93.3% in Bireuen District and 81.1% in Padang City). Statistical analysis results show that there is no difference in proportions of community leader norms in Bireuen District and Padang City (P=0,841 or P>0,05) but for religious leader, there is difference proportions norms in Bireuen District and Padang City (P=0,001 or P<0,05).

Based on sources of information about immunization, 61.1% in Bireuen District and 60% in Padang City said that health workers were the source they trusted to provide information about immunization in the community. In addition to health workers, in Bireuen District and Padang city also trust cadres as a source of information about immunization with a percentage of 38.9% and 45.6% respectively.

4) Provider Recommendation and Information from Health Worker

The table below describes about provider recommendation

Table 5.11. Provider recommendation in Two Regions (Bireuen District and Padang City)

No	Variables	Bireuen District (n=270)	Padang City (n=270)	Total (N=540)	P Value
PROVIDER RECOMMENDATION					
F17	Has a health care provider recommended your child be vaccinated?				
	Yes	88.5	84.8	86.7	0.255
	No	11.5	15.2	13.3	
No	**Variables**	**Bireuen District (n=x)**	**Padang City (n=x)**	**Total (N=x)**	**P Value**
F26b	During your last vaccination visit. did your healthcare provider tell you any of the following information about immunization? Choose all that apply.				
	a. The benefits of immunization	82.2	63.7	73	0.001
	b. Safety information about immunization	80	73	76.5	0.068
	c. Encouragement to come again for immunization	80.4	63.7	72	0.001
	d. Information about next immunization schedule	78.5	74.4	76.5	0.310
	e. Information about where to go for vaccination	72.6	45.6	59.1	0.001
	f. Other information	0.4	2.6	1.5	0.075
	g. None of the above	1.1	4.8	3	

Based on information from respondents, 85.5% of respondents in Bireuen district said that health workers had suggested immunizing their children, similar to Padang City (84.8%). However, there are still 11.5% of respondents in Bireuen district and 15.2% in Padang City who had never received advice from health worker immunize their children. Statistical analysis results show that there is no difference in proportions of provider 47ecommendation in Bireuen District and Padang City (P=0,255 or P>0,05).

5) Information from Health Worker

The table below describes information from health worker.

Table 5.12. Information from Health Worker in Two Regions (Bireuen District and Padang City)

No	Variables	Bireuen District (n=270)	Padang City (n=270)	Total (N=540)	P Value
F26b	During your last vaccination visit. Did your healthcare provider tell you any of the following information about immunization? Choose all that apply?				
	a. The benefits of immunization	82.2	63.7	73	0.001
	b. Safety information about immunization	80	73	76.5	0.068
	c. Encouragement to come again for immunization	80.4	63.7	72	0.001
	d. Information about next immunization schedule	78.5	74.4	76.5	0.310
	e. Information about where to go for vaccination	72.6	45.6	59.1	0.001
	f. Other information	0.4	2.6	1.5	0.075
	g. None of the above	1.1	4.8	3	0.081

In Bireuen District, the most information received by respondents from health workers was the benefits of immunization (82.2%), notification on when to return for immunization (80.4%), information on reactions after immunization (80%), information on where to take children for immunization. In Padang City, the most information received by respondents from health workers was the next immunization schedule (74.4%), then information about the reaction after immunization (73%). Statistical analysis results show that there is a difference in proportion of information from health worker about the benefits of immunization, encouragement to return for immunization, and information about next immunization schedule in Bireuen District and Padang City (P=0,001 or P<0,05).

Summary of Social Processes

- As many as 64.8% of respondents in Padang City said that their **religious beliefs supported immunization**, while in Bireuen District only 46.3%.
- Interestingly, much **greater proportions of religious *leader* support was reported**; as many as 93.3% in Bireuen District and 81.1% in Padang City said that religious leaders supported them in immunizing their children.
- In Bireuen District, 45.2% respondent said **decision maker** was the father and in Padang the most decision makers to immunize their children are mother (56.7%), in both districts about 1/3 reported that both the mother and father were joint decision-makers
- There are 88.1% of respondents in Bireuen District and 62.6% of respondents in Padang City who reorted that they **need permission from their husband or family** to take their children to immunization service facilities.

- In Bireuen District, **negative information** that respondents hear most often is the issue of halal and haram (56%) and in Padang City it is the side effect of immunization (67.7%)
- There are 84.4% of respondents in Bireuen district and 91.5% of respondents in Padang City who said that **most of the parents they knew gave immunizations to their children**.
- There are 78.9% respondents in Bireuen District and 91.9% in padang city who said most of the **respondent's family or close friends wanted the respondent's child to be immunized**.
- In Bireuen District, 95.6% of respondents and in Padang City 94.8% of respondents said that **community leaders supported them** in immunizing their children.
- In both districts **health providers were cited as the most trusted source of information** on immunization (about 62% in both districts), followed by health cadres and then family friends or neighbours.
- Majority of respondents (88.5% in Bireuen district and 84.8% in Padang City) said that **health workers had suggested immunizing** their children
- In Bireuen District, most **information received by respondents from health workers** was the benefits of immunization (82.2%) and in Padang City it was the next immunization schedule (74.4%).

5.6.3. Motivation

1) Intention and Motivation Extent

The table below illustrates the respondent's intention to immunize their child and motivation extent.

Table 5.13. Intention and Motivation Extent in Two Region (Bireuen District and Padang City)

No	Variables	Bireuen District (n=270)	Padang City (n=270)	Total (N=540)	P Value
INTENTION					
F8	Do you want your child to get all of these vaccines. some of these vaccines. or none of these vaccines? Would you say				
	All	50.7	67.8	59.3	0.001
	Some	30.4	29.3	29.8	
	None	18.9	3	10.9	
No	**MOTIVATION EXTENT**	**Bireuen District (n=219)**	**Padang City (n=262)**	**Total (N=481)**	**P Value**
F9	How much do you want to get your child the recommended vaccines?				
	Not at all	8.2	4.2	6	0.001
	Not very much	8.2	1.5	4.6	
	Somewhat	66.7	63.7	65.1	
	Very much	16.9	30.5	24.3	

From the table above, it can be seen that only about 50.7% of respondents in the Bireuen District want to get all types of immunizations recommended by the government, 30.4% of respondents want to get some immunizations and there are still 18.9% of respondents who do not want to get any immunization at all. Meanwhile, in the Padang city as many as 67.8% of respondents who wanted to provide all types of recommended immunizations, 29.3% who wanted to give some types of immunizations and there were still around 3% who did not want to give immunizations at all. Statistical analysis result shows there is difference in proportions of intention in Bireuen District and Padang City (P=0,001 or P<0,05).

Bivariate analysis shows that factors related to intention in Bireuen district are confidence in vaccine benefit, vaccination can protect children from disease and all children should be immunized, confidence in vaccine safety (primary), took child for vaccination, mother's decision autonmy, descriptive social norms, family norms, confidence in providers, provider recommendation, and skip vaccination or delayed vaccination. (See Appendix)

While in Padang City bivariate analysis show factors related to intention in Padang city are confidence in vaccine benefit, vaccination can protect children from disease and all children should be immunized, confidence in vaccine safety (primary and secondary), took child for vaccination, mother's decision autonomy, mother's travel autonomy, descriptive social norms, family norms, community leader norms, religious leader norms, confidence in providers, ease of access and skip vaccination or delayed vaccination. (See Appendix)
*

Motivation Extent: From all respondents who wanted to get all types of immunization and some types of immunization recommended by the government, as many as 16.9% in Bireuen district and 30.5% in Padang City were eager to provide the recommended immunization, however, there were still respondents who had no desire to provide the recommended immunization with the respective percentages in Bireuen District and Padang City is 8.2% and 1.5%. Statistical analysis result shows there is difference in proportion of motivation extent in Bireuen District and Padang City (P=0,001 or P<0,05).

Summary of Motivation

- Only 50.7% of respondents in Bireuen District and 67,8% in Padang City want to get all types of immunizations recommended by the government
- In both districts just under 1/3 reported they wanted their children to get some of the recommended vaccines, and in Bireuen District as many as 18.9% said they wanted none of the recommended vaccines, compared to 3% in Padang City.
- Of all respondents who said they wanted 'all' or 'some' vaccines recommended by the government, as many as 16.9% in Bireuen district and 30.5% in Padang City said they wanted these vaccines 'very much', and a further 66.7% and 63.7% respectively said they were 'somewhat' motivated to get them.

5.6.4. Practical Issues

1) Knowing Where to Get Vaccinated and Taking Children to Get Vaccination

Knowing where to get vaccinated and taking the children to get vaccinated is described in the table below:

Table 5.14 Knowing Where to Get Vaccinated and Taking Children to Get Vaccination in Two Regions (Bireuen District and Padang City)

No	Variables	Bireuen District (n=270)	Padang City (n=270)	Total (N=540)	P Value
KNOW WHERE TO GET VACCINATED					
F6	Do you know where to go to get your child vaccinated?				
	Yes	98.5	99.3	98.9	0.681
	No	1.5	0.7	1.1	
TOOK CHILD FOR VACCINATION					
F7	Have you ever taken your child to get vaccinated?				
	Yes	71.5	91.9	81.7	0.001
	No	28.5	8.1	18.3	
F7a	Where did you take your child to get vaccinated?				
	a. Posyandu	72.5	73.4	73	0.928
	b. Health center	15.5	34.7	26.3	0.001
	c. Hospital	14.5	16.9	15.9	0.575
	d. Clinic	6.2	4.8	5.4	0.673
	e. Private midwife practice	21.8	25	23.6	0.495
	f. Other	4.1	0.8	2.3	0.044

Almost all respondents (98.5% in Bireuen District and 99.3% in Padang City) know the place of immunization services. However, not all respondents bring their children for immunization. In Bireuen District only 71.5% of the respondents had brought their children to get immunized, meanwhile in Padang City the respondents who brought their children to get immunized were quite high, namely 91.9%. Statistical analysis result shows there is no difference in proportions of knowing where to get vaccinated in Bireuen District and Padang City (P=0,681 or P>0,05).

Of all the respondents who took their children to be immunized, posyandu (post integrated services) was the place most visited to get immunization services. As many as 72.5% of respondents in Bireuen district and 73.4% of respondents in Padang city received immunization services at the posyandu. Furthermore, in Bireuen district, midwife, private clinic was the place of service that most respondents chose after posyandu with a percentage of 21.8%, in contrast to the case in the city of Padang, puskesmas was the place for immunization services most visited after posyandu. Statistical analysis result shows there is a

difference in proportions of place to get vaccinated at health center in Bireuen District and Padang City (P=0,001 or P<0,05).

2) Accessibility

The table below describes ease of access:

Table 5.15 Accessibility in Two Region (Bireuen District and Padang City)

No	Variables	Bireuen District (n=270)	Padang City (n=270)	Total (N=540)	P Value
ACCESIBILITY					
F18	How easy is it to get vaccination services for your child? Would you say				
	Not very much	0.4	0.7	0.6	0.001
	Somewhat	83	64.1	73.5	
	Very much	16.7	35.2	25.9	
AFFORDABILITY					
F20	How easy is it to pay for vaccination? This includes any payments to the clinic, the cost of getting there, and other costs?				
	Not at all	0.4	0.7	0.6	0.013
	Not very much	1.5	3	2.2	
	Somewhat	63.7	50	56.9	
	Very much	34.4	46.3	40.4	

Based on accessibility to immunization services, 83% of respondents in Bireuen district and 64.1% of respondents in Padang City said that it was easy to get immunization services, and as many as 16.7% and 35.2% of respondents in Bireuen district and Padang City said it was very easy to get immunization services. However, there are still around 0.4% (n=1 respondent) and 0.7% of respondents (n=2 respondents) in each district and city who say it is difficult to get immunization services, the reason is that the immunization services does not open when they arrived and the immunization service schedule is inconsistent. Statistical analysis result shows there is difference in proportions on ease of access in Bireuen District and Padang City (P=0,001 or P<0,05).

Affordability, In Bireuen District, 63.7% of respondents said that the cost of immunization was cheap and 34.4% said that the cost of immunization was very cheap, meanwhile in Padang City, 50% of respondents said the cost of immunization was cheap and 46.3% said it was very cheap. Statistical analysis result shows that there is difference in proportions of immunization affordability in Bireuen District and Padang City (P=0,013 or P<0,05).

3) Service Satisfaction

The table below describes about service satisfaction.

Table 5.16 Service Satisfaction in Two Regions (Bireuen District and Padang City)

No	Variables	Bireuen District (n=193)	Padang City (n=248)	Total (N=441)	P Value
SERVICE SATISFACTION					
F24	During your last visit, how satisfied were you with the vaccination services?				
	Not at all	1	0.4	0.7	0.001
	Not very much	1	2.8	2	
	Somewhat	84.5	67.7	75.1	
	Very much	13.5	29	22.2	
SERVICE QUALITY					
	Variables	**Bireuen District (n=4)**	**Padang City (n=8)**	**Total (N=12)**	**P Value**
F25	What aspects of the vaccination services were you not satisfied with? Which of the following would you say applies?				
	a. The clinic was unclean	0	0	0	
	b. Staff were poorly trained	0	0	0	
	c. I waited a long time	0	12.5	8.3	1.000
	d. Staff were not respectful	0	37.5	25	0.480
	e. Staff did not spend enough time with me	25	12.5	16.7	1.000
	f. Staff did not answer all my questions	75	37.5	50	0.540
	g. Others	0	0	0	

From all of the respondents who had taken their children for immunization, 84.5% of respondents in Bireuen District were satisfied with the immunization services they received, as well as in Padang City as many as 67.7% of respondents were also satisfied with immunization services and 29% felt very satisfied. However, there is still 1% in Bireuen District and 2.8% in Padang City who are not satisfied with the services they get. Statistical analysis result shows there is difference proportions of services satisfaction in Bireuen District and Padang City (P=0,001 or P<0,05).

The reason respondents feel unsatisfied with the services they receive in Bireuen District is that health workers do not answer all of the respondents' questions and health workers do not have much time to provide services to respondents. Meanwhile in Padang City, apart from the reason the officer did not answer the respondent's question, other reasons that were conveyed were that the officer did not appreciate or was unfriendly, the respondent waited too long and the staff did not have much time to provide services.

4) Respect from Provider

The table below describes about respect from provider.

Table 5.17 Respect from Provider in Two Regions (Bireuen District and Padang City)

No	Variables	Bireuen District (n=193)	Padang City (n=248)	Total (N=441)	P Value
RESPECT FROM PROVIDER					
F26a	During your last visit, how respectful were the vaccination staffs to you?				
	Not at all	0.5	0	0.2	0.001
	Not very much	0	0.8	0.5	
	Somewhat	88.1	68.1	76.9	
	Very much	11.4	31	22.4	
F26b	During your last vaccination visit, did your healthcare provider convey any of the following information about immunization? Choose all that apply.				
	a. The benefits of immunization	82.2	63.7	73	0.001
	b. Safety information about immunization	80	73	76.5	0.068
	c. Encouragement to come again for immunization	80.4	63.7	72	0.001
	d. Information about next mmunization schedule	78.5	74.4	76.5	0.310
	e. Information about where to go for vaccination	72.6	45.6	59.1	0.001
	f. Other information	0.4	2.6	1.5	0.075
	g. None of the above	1,1	4,8	3	

During the last visit of respondents to health services, (88.1% of respondents in Bireuen District and 68.1% of respondents in Padang City said that immunization officers respected them. Statistical analysis result shows that there is difference in proportions of respect from provider in Bireuen District and Padang City (P=0,001 P<0,05).

5) Knowledge the Type of Immunization and Source Information of Immunization

In Bireuen District, only 45.6% knew that immunization could prevent measles. In comparison, in Padang city, 82.2% knew that immunization could prevent measles. Only 33.7% of responsents in Bireuen District and 54.8% in Padang City knew that immunization could prevent polio. Respodents had the least knowledge that pertussis ccan be prevented through immunization (only 3.3 in Bireuen District and 2.2 in Padang City). Statistical analysis result shows there is difference in proportions of knowledge about the type of immunization namely TBC, polio, measles and hepatitis B in Bireuen District and Padang City (P=0,255 or P>0,05).

Table 5.18 Knowledge about Immunization and the Source of Information in Two Regions (Bireuen District and Padang City)

No	Variables	Bireuen District (n=270)	Padang City (n=270)	Total (N=540)	P Value
KNOWLEDGE ABOUT IMMUNIZATION					
F27	What diseases can be prevented by immunization (answers can be more than one).				
	a. TBC	18.9	32.2	25.6	0.001
	b. Diphtheria	5.6	9.6	7.6	0.104
	c. Tetanus	13	17.4	15.2	0.187
	d. Pertussis	3.3	2.2	2.8	0.600
	e. Polio	33.7	54.8	44.3	0.001
	f. Measles	45.6	82.2	63.9	0.001
	g. Hepatitis B	11.5	21.9	16.7	0.002
F28	From whom you heard about immunization? (the answers could be more than one).				
	a. Health provider	78.9	71.9	75.4	0.072
	b. Cadres	50.4	50.4	50.4	1.000
	c. Community leader	12.2	5.9	9.1	0.017
	d. Religion leader	2.6	0.7	1.7	0.179
	e. Friend/family	17.4	29.6	23.5	0.001
	f. TV	2.6	16.7	9.6	0.001
	g. Radio	0	1.5	0.7	0.132
	h. Posters/banner/flyer	1.1	1.1	1.1	1.000
	i. Others (Health Worker)	1.1	7.8	4.4	0.001

Information about immunization services was mostly obtained by respondents from health workers with a respective percentage of 78.9% in Bireuen district and 71.9% in Padang City. Apart from th*at, another source of information was cadres with the same percentage in both regions at 50.4%.

Summary of Practical ssues

- Mostly respondents know the **place of immunization services** (98.5%) in Bireuen District and 99.3% in Padang City.
- In Bireuen District 71.5% of the respondents who had previously brought their children to be immunized and in Padang City this percentage was 91.9%.
- Posyandu was the **place most visited to get immunization services** (72.5%) in Bireuen District and 73.4% in Padang City
- Mostly respondents said they had **easy access** to immunization services (94.6%) Bireuen District and 99.3% in Padang City, however of the 94.6% in Bireuen District, only 16.7% said it was 'very' easy, and of the 99.3% in Padang City 35.2% said so.

- Mostly respondents said immunization **costs are easy to afford** (98.1%) in Bireuen District and 96.3% in Padang City.
- Mostly respondents are **satisfied** with immunization services (98.0%) and 96.7% in Padang City.
- **Satisfaction with immunization services was high** across both districts with 98% in Bireuen District and 96.7% in Padang City reporting they were somewhat or very satisfied with services during their last visit.
- For respondents who said unsatisfied with immunization services, in Bireuen the reasons cited were lack of time spent with healthcare staff and inability os staff to answer all questions, whereas in Padang City additional reasons cited were lengthy waiting times, and lack of respect from immunization staff.
- For respondents who ever brought their children to be immunized said that **provider respected** them (99.5%) in Bireuen District and 99.1% in Padang City.
- Measles was most widely **known type of antigent** (45.6%) in Bireuen District and 82.2% in Padang City.
- Mostly respondents **know about immunization** from health provider (78.9%) in Bireuen District and 71.9% in Padang City.

5.6.5. Vaccination

1) Skip or Delayed Vaccination and Missed Opportunities in Vaccination

The proportion of children who had skipped or delayed vaccination and missed opportunity are shown in table below.

Table 5.19 Skipped or delayed vaccination and missed opportunity in Two Regions (Bireuen District and Padang City)

No	Variables	Bireuen District (n=270)	Padang City (n=270)	Total (N=540)	P Value
SKIPPED VACCINATION OR DELAYED VACCINATION					
F21	Has your child ever missed or delayed vaccination for any reason?				
	No. never missed or delayed vaccination	26.7	48.5	37.6	0.001
	Yes. missed vaccination or delayed vaccination	73.3	51.5	62.4	
No	**Variables**	**Bireuen District(n=198)**	**Padang City (n=139)**	**Total (N=337)**	**P Value**
F22	Did a health care worker follow up with you about your missed or delayed vaccination?				
	Yes	34.8	34.5	34.7	1.000
	No	65.2	65.5	65.3	
	MISSED OPPORTUNITY	**Bireuen District (n=193)**	**Padang City (n=248)**	**Total (N=441)**	**P Value**

No	Variables	Bireuen District (n=270)	Padang City (n=270)	Total (N=540)	P Value
F23	Have you ever been turned away when you tried to get your child vaccinated?				
	Yes	5.7	6	5.9	1.000
	No	94.3	94	94.1	

As many as 73.3% of respondents in Bireuen district and 51.5% of respondents in Padang City had missed or delayed immunizing their children. Around 26.7% and 48.5% of respondents in Bireuen district and Padang city respectively never postponed immunization. Statistical analysis results show that there is a difference in proportions of skipped or delayed vaccination in Bireuen District and Padang City (P=0,001 P<0,05).

For respondents who had skipped or delayed immunization, only a few health workers in their area visited respondents (34.8% in Bireuen District and 34.5% in Padang City) to enquire about why they skipped or delayed immunization.

Missed Opportunities on Vaccination, From of all respondents who had taken their children to be immunized, 5.7% in Bireuen District and 6% in Padang City had been rejected by health workers when they wanted to immunize their children, the remaining 94.3% and 94% respectively in the district Bireuen and Padang City were never refused. Statistical analysis results show that there is no difference in proportion of missed opportunity on vaccination in Bireuen District and Padang City (P=1,000 P>0,05).

Summary of Vaccination

- More than half the children had **skipped or delayed vaccination** (73.3%) in Bireuen District and 51.5% in Padang City.
- From all of children who had skipped or delayed immunization, less than half were **visited by health provider** (34.8%) in Bireuen District and 34.5% in Padang City
- Proportion of children who had **missed opportunity vaccination** is similar between in Bireuen District (5.7%) and in Padang City (6.0%).

5.6.6. Immunization Coverage

Below is presented information about immunization coverage based on respondents who have had complete immunization, partial immunization and no immunization at all. In addition, it also explains, immunization coverage based on the type of immunization and the place of immunization service.

1) Immunization Status

Immunization coverage is the estimated percentage of people who have received specific vaccines. Immunization coverage is a key indicator of access to and use of immunization services. The graph below describes immunization coverage specific vaccines.

In Bireuen District, 23.0% of respondents said that thier children have received complete immunization, 55.2% said that their children had received partial immunization and there are still 21.9% of respondents whose children have never received any immunization. Meanwhile in Padang city only 32.2% of respondents said that their children received complete immunization, 64.8% said that their children received partial immunization and only about 3.0% said that their children had not received any immunization.

2) Routine Immunization Coverage

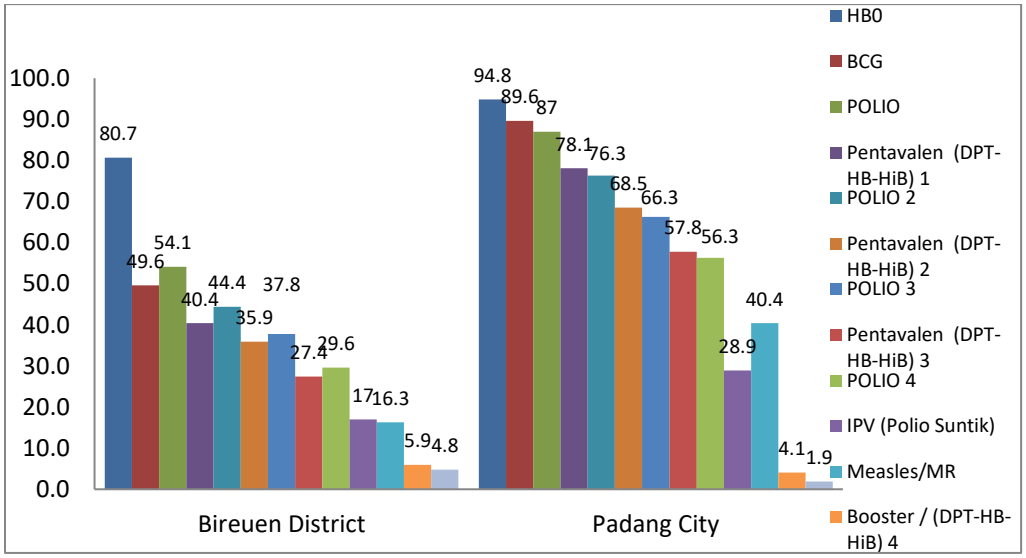


Figure 5.20 Routine Immunization Coverage in Two Regions (Bireuen District and Padang City)

Based on the graph above, basic immunization coverage in Padang City is higher than in Bireuen district. Measles immunization coverage in Bireuen District was 16.3% lower than in Padang City which was 40.4%. Meanwhile, the coverage of booster immunization in Bireuen District is slightly higher than Padang city. DPT-HB-HIB 4 coverage in Bireuen District is 5.9% and in Padang City, it is is only 4.1%. The MR2 immunization coverage in Bireuen Regency is 4.8%, which is slightly higher than Padang City which is only 1.9%

The most preferred place for the DPT-HB-HIB 1 immunization service was posyandu in both Bireuen District and Padang City. In Bireuen District, 83.5% of immunization was given at posyandu and 9.2% at the health center. Likewise, respondents in Padang city also chose posyandu as a place for immunization

services with a percentage of 65.4%. In addition, 13.7% of respondents also chose puskesmas and 13.3% chose a midwife's clinic.

The service place for MR immunization that most respondents chose was the posyandu with a percentage of 86.4% in Bireuen District and 67.9% in Padang City. In addition, several respondents also chose the health center for immunization with a percentage of 9.1% and 14.7%, respectively. In the city of Padang, 11% were still immunized at the midwife's clinic.

- Less than half children received complete imminization or are fully immunized (23.0%) in Bireuen District and 32.2% in Padang City.
- Most type of immunization received by children is HB0 (80.7%) in Bireuen District and 94.8% in Padang City.
- Posyandu or outreach facility was the **place most visited to get immunization services** for **DTP-HB-Hib 1** antigent (83.5%) in Bireuen District and 65.4% in Padang City.
- Posyandu or outreach facility was the **place most visited to get immunization services** for **Measles/MR** antigent (86.4%) in Bireuen District and 67.9% in Padang City.

5.7. Factor associated with fully immunized children in Biereuen District and Padang City

5.7.1. Bireuen District (Aceh Province)

Factors associated with full immunization according the BeSD theory can be categorized by: Practical issues, Motivation, Social process, and What people think and feel. All variables observed in the study, specifically in CIS are analyzed in this section.

Bivariate Analysis

For practical issues, the variables that were significantly different (p value <0.05) for fully immunized children were: missed vaccination, satisfaction with immunization services, accessibility to immunization services, took their children to Posyandu, provider gives information on vaccine safety, providers encourage to come again, providers informed on next schedule for immuinzation and confidence of health providers. For social process, the following variables were significantly different (p value<0.05): community leader's norm, family norm, intention to bring their children for immunization, provider recommendation, source of information from health provividers, cadres, community leaders and descriptive social norm. For motivation factors the variables that were significantly different (p value<0.0, 5) were: religious leaders encourage immunization, willingness to get recommended vaccines, intention to get all antigents, took the children for vaccination, knew where immunization services were provided, confidence of vaccine, religious belief, confidence that vaccines protect their children, confidence that vaccines can protect other children, confidence in benefits of vaccines. For thinking and feeling the variables that were significantly different (p value<0.05) were: mother's decision autonomy, confidence in vaccines safety, knowledge in TBC, knowledge on diphtheria, polio, measles, hepatitis B and source of information community leaders. All those variables and variable with p value <0.25 were continued to multivariate analysis.

A multivariate analysis was also carried out. From the result of multivariate analysis, the factors associated with fully immunized children in Bireuen District are immunization at Health Centers, motivation to get Immunization, missed vaccination and knowledge on TBC immunization.

Table 5.21 Factor Associated with Fully Immunized in Bireuen District

Variables	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
							Lower	Upper
Vaccination at Health Center	-1.974	.539	13.401	1	.000	.139	.048	.400
Motivation for immunization	-.824	.295	7.772	1	.005	.439	.246	.783
Missed Vaccination	2.492	.420	35.209	1	.000	12.089	5.307	27.535
Knowledge on TBC immunization	-1.019	.471	4.668	1	.031	.361	.143	.910
Constant	.028	1.095	.001	1	.980	1.028		

5.7.2. Padang City (West Sumatera Province)

Bivariate Analysis

For practical issues factors, the variables that were significantly different (p value <0.05) for fully immunized children were: missed vaccination, easy accessibity, took their children vaccination, satisfaction with immunization services, knew where the immunization service was, affordability for immunization services, satisfaction on immunization services, respect from providers, providers explained on benefit of immunization, vaccination safety, encouragement for immunization, next schedule for immunization , accessibility for immunization services and confidence to health providers. For social process, variables that were significantly different (p value<0.05) were: community leader's norm, family norm, information from religious leaders and descriptive social norm. For motivation factors variables that were significantly different (p value<0.0, 5) were: willingness to get recommended vaccines, confidence in vaccines benefit, confidence that vaccines can protect their children, confidence in vaccines safety, intention to get all antigens, took the children for vaccination, confidence in vaccine, motivation to get vaccination, religious belief, knowledge that vaccine can protect their children, knowledge that vaccines can protect other children, confidence in vaccines benefit. In people thinking and feeling factor variables were significantly different (p value<0.05) were: mother dietician autonomy. All those variables and variable with p value <0.25 were continued to multivariate analysis.

5.8. Multivariate Analysis

From the result of multivariate analysis, factors associated with fully immunized children in Padang city were: intention to get vaccination, motivation to get immunization, mother's decision autonomy, descriptive social norm, missed vaccination, providers encourage for immunization, knowledge on Diphtheria. The factors associated with fully immunized status of the children in Padang city was very different compared to Bireuen district.

Table 5.22 Factors Associated with Fully Immunized in Padang City

Variables	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
							Lower	Upper
Intention to get vaccination	1.937	0.494	15.347	1	0	6.935	2.632	18.273
Motivation to get immunization	-1.217	0.367	10.977	1	0.001	0.296	0.144	0.608
Mothers Decision Autonomy	-0.525	0.183	8.195	1	0.004	0.592	0.413	0.847
Descriptive social norm	2.817	1.196	5.544	1	0.019	16.725	1.603	174.456
Missed Vaccination	1.509	0.362	17.394	1	0	4.523	2.225	9.192
Providers encourage for immunization	-1.09	0.389	7.852	1	0.005	0.336	0.157	0.721
Know on Diphtheria Immunization	1.953	0.619	9.951	1	0.002	7.053	2.095	23.74
Constant	-1.217	1.793	0.461	1	0.497	0.296		

5.9. Qualitative Result

The result of qualitative approach will be presented by each informant type, those are caregiver, and community influencers included cadre, community leader, midwife organization, Family Empowerment, Islamic organization as well as health worker and program manager.

5.9.1. Caregivers

Perceived Risk, worry, confidence, trust and safety concern

In general, caregivers in Bireuen and Padang City said that immunization is important. The immunization is also needed for children to prevent disease. In Padang City, immunization was also important because it's recommended by doctors and could increase the child's immunity

> *"I agree with immunization. If it has been recommended by the doctor, it means that there are benefits for the child." (Caregiver RO, Padang City)*

In Bireuen district, caregivers are a little worried. They said that they felt 'biasa saja' when immunizing their children, they are worried if there is any side effect. Others felt happy because the children are protected from disease. In Padang City, some caregivers felt no worry, because they know immunization can increase the child's immunity.

> *"I feel worried, I am afraid my child will be fussy." (Caregiver EY, Bireuen)*

> *"I feel biasa-biasa saja (just normal}-when my child being immunized" (Caregiver TZ, Bireuen)*

> *" There is a feeling of fear and happiness. I am afraid because of the side effects of immunization and happy because children are protected from disease" (Caregiver JU, Bireuen)*

> *"Happy because immunization is good for children..only when the child is being injected I can't bear to see it.," (Caregiver RO, Padang City)*

"There is no worry, because I know immunization can increase the child's immunity." (Caregiver MY, Padang City)

Caregivers in Bireuen and Padang trusted in immunization. Caregivers in both places responded that they have already immunized their children in order to protect them from disease. One caregiver said that after immunization, child will note have diseases quickly. In Padang, children have been immunized with the hope of increasing immunity from disease. Caregiver looked for information before deciding to immunize their child

"Before immunizing my child, we-my husband and I have been searching information about side effect and benefit of immunizations that will be given to our child" (Caregiver DP, Padang City).

In Bireuen when caregivers decided to vaccinate their child, the questions that caregivers had were regarding the child's health. They also felt worried about side effects and were scared if the vaccines would fail because there was rumour that vaccination caused a child to become disabled. Although they felt worried they still immunized their child so that their children become healthy and are protected from disease. Padang caregivers said they were not worried about giving immunization to children, although they thought about the effects of immunization such as fever and completeness of immunization. Otherwise, they also thought about benefits of the immunization.

"I already immunized my child although not completed.. in order for my child to become healthy" (Caregiver MY, Padang City)

Yes.. I immunized my children. I already have experience with my first child. Immunization can make children's immunity strong." (Caregiver, Padang City)

Social Process

Generally, informants spoke about immunization with health provider (midwife), sister-in-law, cadres, parents even husbands. In Padang Informants answered discussing or talking about immunization with their husbands, cadres, and health workers or midwives.

Caregivers in Bireuen knew about vaccination for their children from midwife, health provider and MCH book. In Padang they knew from cadres, pediatricians, friends, by reading books and from previous experiences of children. They also knew by looking for the information on internet.

When it's time to vaccinate their children, caregivers in Bireuen knew from health provider (midwife) and MCH book. They also knew it from announcement from the mosque near their house. In Padang, caregivers knew from cadres, midwives or health providers of puskesmas and the MCH book.

Caregivers in Bireuen talked about what they do on the day of vaccination, after arriving at health center or meunasah or posyandu, the mother registered and then the child was weighed and its height was measured. After that the child got vaccination. They also got information about side effects and the medicines to take after immunization and what to do in the event of an adverse reaction. Similar with Bireuen, in Padang caregiver said that after arriving at posyandu, mothers register the child, they wait in

line, then the child was weighed before receive immunization. Health provider checks the child's health and explains about immunization and if there are any side effects, she gave medicine. After receiving immunization, the child was given supplementary feeding (PMT) at the posyandu.

In the immunization facility, caregivers in Bireuen usually talked to midwives and cadres. They talked about child's health, child's growth, and immunization benefit. Relationship between midwife and caregiver was good. It was reflected by satisfaction of caregivers, good attitude of midwife and fast service. In Padang they usually talked to other mothers at posyandu and to health workers (doctors, midwives or nurses). The matter discussed is about children's health. Health worker usually asks about the side effects of immunization experienced by the child.

Caregivers in Bireuen said village midwifes, cadres, community themselves, village staff (geuchik, village secretary) and husbands play an important role in immunization. While in Padang parents, cadres and health workers play important roles in their community for immunization. They all have important roles to encourage communities to immunize their children.

Motivation

Decision to immunize children in Bireuen can be taken by mother herself, but some had to take permission from their husbands. Informants who decided by herself is based on advice from health provider and willingness but still with husband's permit. In Padang, people who are involved in making decisions about whether children should be immunized or not are husbands and parents.

Once people decide to vaccinate their children, they prepare the MCH book, check the child's condition whether healthy or not. Some brought paracetamol in case of any fever after vaccinated. In Padang, caregivers mentioned that there was no preparation for immunization, some of them mentioned checking the immunization schedule as well as child's health condition.

Practical Issues

In Bireuen caregivers said that the immunization service is close to their house and there is announcement from meunasah or mosque. While in Padang caregivers said there were no difficulties in terms of immunization, although some said that children were afraid of doctors and they feared that their children had fever after immunized.

During immunization day, caregivers in Bireuen liked that at the posyandu the immunization service was easy to reach and the service was fast . According to them health center service is good and they are satisfied with the service. They also said that they did not have to wait too long for getting the service. Caregivers also liked that they knew the providers, and the service is fast. They felt joy because the midwife is friendly and the facility is clean. According to them, there is nothing specific they don't like about immunization day. In Padang caregivers said that immunization service and the place were good and clean, free of charge at the posyandu and health center although according to one informant sometimes the health worker was late to come to the facility. There are caregivers who choose immunization service at a hospital because of good service and cleanliness of the place. In health center,

some people dislike the experience because they had to queue or wait quite a long time at the immunization service, other said that sometimes cadres and midwives were late.

Both in Bireuen and Padang, caregivers did not pay for getting immunization, it was free of charge at posyandu and very cheap at health centers. In contrast the cost of immunization at the hospital is expensive that is around 1 million rupiah.

5.9.2. Community Influencers

Community influencers in this study included health cadres, community and religious leaders, PKK, IBI, and MUI/MPU.

a. Cadres

The role of a person in immunization activities can affect the motivation of the community in immunizing their children. The qualitative results indicate that cadres have a substantial role in immunization. Cadres are considered as frontliners in community. The roles both in Bireuen and Padang City are almost similar and include listing children under five who will be immunized, encouraging mothers to immunize their children, and conducting home visits for mothers who do not come to the posyandu.

> *"I record underfive children who will be immunized and advice mothers to be bring their children for immunization." (Cadre MY, Bireuen)*

> *"…I invite or notify community to come to the posyandu. I inform the mosque officer to announce the schedule of posyandu implementation. I record the visit data at that posyandu day in an archive book." (Cadre EG, Padang City)*

When cadres asked the process they follow when work they with a family, cadres in Bireuen generally provided an explanation of the benefits of immunization, side effects and the medicine. At posyandu, cadres provided supplementary food to motivate mothers to come to the posyandu. Besides that, they visit house of mother whose child has not been immunized or does not come to the posyandu when they work with a family. While in Padang City, cadres did almost similar work such as invititing community to immunize at posyandu, providing information on the benefits of immunization and conducting sweeping.

> *"I encourage, recommend, and explain that immunization is important." (Cadre DS, Padang City)*

> *"I visit house to house after the mother has given birth and ask her to immunize her child immediately… every month after the posyandu completion, if there are any children who are not immunized, I will visit their houses and ask why the child is not immunized and suggest that they should bring their child for immunization. Usually, the reasons of the parents who work is that they don't have time to bring their children for immunization." (Cadre ES, Bireuen)*
> *"I visit their houses to explain the benefit of immunization.." (Cadr RZ, Bireuen)*
> *"I engage mothers to come to posyandu.." (Cadre WS, Padang)*

Cadres in Bireuen found it difficult to provide counseling in their areas because most community still think that children do not need to be immunized. Even though there were cadres who did not have obstacles when implementing. Cadres felt that there are many obstacles to immunization because the mother or family is worried about the side effects of immunization, additionally in the family there are other decision makers which does not allow a woman or a wife to take decision by herself even in urgency. When a couple live with their parents, the decision maker is their father, while when they live without parents, so the decision maker is husband as head of family. If there is a grandfather in the house, the leader will be grandfather. Even if the father allows the immunization but the grandfather does not allow it, the mother does not dare to bring the child for immunization.

> *"There are many obstacles to immunization because the mother or family is worried about the side effects of immunization" (Cadre SB, Bireuen)*

In Padang City, obstacle faced by one cadre is a few people do not want their children to be immunized, because they are afraid of fever. Other said the parents are busy (mothers working), and husband forbids mother bringing their child to posyandu for immunization, because they were afraid of fever after immunization.

> *"Still few (children who did not receive immunization), because they are afraid of fever."* (Cadre DS, Padang)

Perception of vaccination in community according to Cadre

Cadres were asked about what they think of the implementation of immunization for children in their community. In Bireuen according to cadres, mothers have lack of enthusiasm for immunization because they are afraid that the child will get a fever or be fussy after immunization; mothers are less knowledgable about immunization benefits, so there are still many children who are not immunized. In Padang, cadres said that there are still children who have not been immunized for fear of fever. Cadres in Bireuen said that about only 10-20% coverage can be achieved; some were not fully immunized because the husbands did not allow. The cadres do not often meet their husbands because they work and return home in the evening. In Bireuen the acceptance of immunization varied, still less people are aware that immunization is important. Some have opinion that immunization was not allowed by religion (Islam) and worried their child will get fever after immnunization. Otherwise, there are parents who willing to immunize their children because they know the benefit of it.

In Padang, cadres claimed that most of the children have been immunized, although there are still some who have not been immunized because of their parents' beliefs about the halalness of vaccines, and because they are afraid of fever after immunization. The acceptance of immunization in community is good, most community are already aware about the benefit of immunization.

> *"Most children have already been immunized, they come to private midwife clinic. There are still those who are not immunized because of their belief about the halal vaccine." (Cadre DS, Padang City)*

"There are still many mothers who did not immunize their children), because their husband forbid, they are afraid of fever." (Cadre IS, Padang City)

When cadres asked about persons who are most appropriate for promoting immunization, cadres in Bireuen said husband, midwife, *geuchik* (head of village) and cadre. While in Padang they said community leaders (head of village, RT, RW), health workers, cadres and the child's parents can work with a family for immunization.

To improve community willingness to immunize their children, cadres in Bireuen have suggested that, if possible, husbands can also be invited to the posyandu to get counseling at immunization facility. They also suggested to appreciate mothers whose children are fully immunized. Other suggestions were collaboration amongst health and religious leaders to increase the immunization coverage. In Padang, cadres hoped that all mothers would immunize their children. They also suggested that they have static posyandu places so that the children are more comfortable. And health providers provide more counselling and socialization for mothers who do not want to immunize their children.

b. *Community/religious leaders*

The roles of community and religious leaders in immunization activity, among others is to remind and encourage the community to come during the posyandu schedule and immunize their children. In Padang, community leaders collaborate with puskesmas to educate the public about immunization.

When community leaders were asked about their thoughts on immunization implementation for children in their community, Community/religious leaders in Bireuen said that not all children were immunized because there is less understanding of the benefits of immunization among community. According to them, the immunization status had not reached the target. Community leaders in Bireuen said that on many occasions, he always reminded people to immunize their children, while in Padang City this activity had already been conducted through posyandu.

"People here have less understanding on the benefits of immunization." (Community leader HS, Bireuen)

In Padang, community and religious leaders said that the immunization implementation in their area is good, because it's national program, however there are some communities who still do not understand about the benefit of immunization. According to one religious leader in Padang, immunization status is good, because majority of children have been immunized (at posyandu) and even parents who work will immunize their children by entrusting their children to their maid, although there are still children who are not immunized because of parents work and lack of knowledge on immunizaton or because of their belief that without vaccination, the child was still healthy. Below are two quotations from informant when asked about implementaion of children immunization in their areas.

"Pretty good.. most of them are immunized, some are still not immunized because of lack of understanding about immunization" (Religious leader AJ, Padang)

"The majority have already been immunized.. for parents who work, their maid will bring their children to posyandu..However, there are a few who are still not immunized because of the belief that without immunization the child is stll healthy" (Religious leader EP, Padang)

In Bireuen, people who are responsible for influencing family for immunization is *tengku or local ulama* (religious leader) and geuchik (head of village). Ulama is influencer because what ulama says will be followed by their community (*Jamaah)*. While in Padang, the head of the family, local community leader, village staff, RW, RT, cadres and health providers influence community in increasing immunization status.

For improving peoples' willingness to immunize their children, people and religious leaders in Padang suggested improved socialization between health workers and community members , this will ensure that negative thoughts and the halal issues on vaccines can be reduced, because in Padang city religious leaders influence to their community was not dominant. On the contrary, in Bireuen collaboration between health workers and religious leaders are needed in every behavior including in providing immunization services. In Bireuen or Aceh all behaviour should follow religion rules, therefore collaboration between government including DHO and Health centers with Majelis Syariah (People Council for Religion/Islam) and MPU (Islamic council) were required to ensure that health programs including immunization programs were allowed by Majelis Syariah and MPU, this ensured that immunization become halal and allowed for peoples in Bireuen or Aceh.

c. District Midwifery Organization (IBI-Ikatan Bidan Indonesia)

As a professional organization, IBI supports midwives to provide services according to competencies that have been regulated in existing regulations. IBI also protect members who work in the government and private sectors as well as midwife who have not worked yet.

According to informants, there is similar opinion in Bireuen and Padang that immunization implementation is influenced by education. Communities with low education have low immunization coverage. Generally, some communities with low education refuse immunization. Both in Bireuen and Padang, there are still issues of halal and haram. In Bireuen, the statement of religious leaders were more heard than the Regent (Bupati).

According to informants, most influencers are from husband's family and religious leaders in the small group at village level. Also, both sites said that work outside will influence children to be immunized. Currently in Bireuen side effects are not a problem because there is health education before and after immunization.

"In Bireuen the words of religious leaders were more heard than the Regent, but currently side effects are not main problem because there is education before and after immunization." (Informant, Bireuen)

In order to ensure community's willingness to immunize their children, IBI Bireuen suggested that they need support from local government to village, not only regulation but also presence in the field. IBI Padang suggested that there is a need for health promotion to be further enhanced. The method of

counseling about immunization uses an audio-visual method, from religious leaders providing clear information about halal and haram issues so that the public is not confused. MUI emphasizes that immunization is halal because there is still confusion in the community.

d. ***PKK District (Family Welfare Empowerment Organization)***

PKK in Bireuen have immunization activities included in working group 4-health section (namely Pokja 4) in posyandu to provide counseling and some cadres of PKK are involved in posyandu activities. Yet, for PKK at the district level, the activities in Pokja 4 are not only for immunization. For example, for competitions in health areas; there is nothing specific for immunization. In Padang, PKK have many activities for immunization, among others it involves conducting counseling and socialization on vaccinations at posyandu activities to motivate the community. According to PKK Padang, currently, there are many anti-vaccine issues circulating on social media that make people distrustful of vaccines. In addition, the halal fatwa from the MUI for vaccines is inconsistent which makes people doubtful about immunization. At first the MUI said the haram vaccine was then revised to become halal. However, the community already believed that the vaccine is haram.

PKK Bireuen said that although she is less involved in immunization activity, she knew that many people visit posyandu. PKK at village level have more roles in village because most of them are health cadres who involved at posyandu. However, the difficult things they faced in Bireuen are the community does not understand about immunization. Side effects after immunization are also obstacles for the community to immunize their children.

While PKK Padang said that implementation of immunization in the community is very important to prevent dangerous diseases, according to PKK Padang, the biggest problem at this time is the issue of halal and haram. Even though this has been explained by doctors, there are so many anti-vaccine communities spreading negative information about vaccines. Other obstacles include some parents work so they don't have time to bring their children for immunization and lack of public awareness of immunization. According to informant, even though there are doctors who understand vaccination and understand the rules in religion, there are so many anti-vaccine communities that spread negative information about vaccines. If there are media or informants who disseminate negative information or false information about immunization, the local government should contact them to clarify.

Suggestions from PKK Bireuen was in order to increase community willingness to immunize their children among others, there is a need for budget allocation for posyandu activity. Support is needed to the health office, to mobilize or socialize husbands by working groups (pokja PKK)and to provide additional knowledge about immunization for cadres. PKK Padang suggested to make posyandu even more attractive to the community so that people want to visit posyandu. For this, they suggested providing PMT, providing playing facilities at posyandu, promoting immunization through social media and aggressively promoting immunization on television, YouTube, or other social media.

e. Religion Organization

In Bireuen, Nahdatul Ulama organization was the organization with most jamaah, while in Padang City, it was Muhammadyah.

According to NU and Muhammadyah, they are not directly involved in immunization activities. So far, NU has not been involved in health activities including immunization activities. They are still working in the world of education.

NU thought that there are still many people in Aceh who refuse immunization. As long as the central MUI legalizes vaccines, NU will also legalize vaccines. NU will refer to the MUI decision. In Aceh, there is no compulsion for immunization. The community is given the freedom to immunize children or not. So far, the MUI and MPU decisions have always been in line. Otherwise Muhammadyah have confidence and trust in the government for immunization because they are backed up by studies or research on immunization including on haram or halal vaccines to society. Both in Bireuen and Padang, some people still do not want to immunize their children because of the issue of halal and haram from vaccines.

Thus, religious figure or leader is the most influential figures for inproving in community's willingness in immunization. There are two major Islamic organizations, namely NU and the Aceh Power Ulama Association (Himpunan Ulama Daya Aceh) apart from MUI and MPU that influence community. However, Muhammadyah stated that the government and other organizations such as religious organizations, village/sub-district staff, PKK (Family empowerment) can influence community to immunize their children.

> *"As for Aceh itself, the most influential and more widely heard by the community are the pesantren (Islam boarding school) leaders or religious leaders. Therefore it is necessary to involve the leadership of the pesantren to prmote immunization."* (Informant, Bireuen)

In order to improve mothers' willingness to immunize their children in Aceh, where there is high resistance from the community due to the halalness issue, NU have suggestions that involving religious to communicate clearly on the benefits and importance of full immunization for better health in the community might be an important strategy. Training related to immunization is needed for religious leaders, especially training on immunization from a religious perspective. Muhammadyah suggested the government that immunization had to be deemed a mandatory program and so it is necessary to involve the organization such as Muhammdyah, NU, Perti, Scout organizations, etc.

> *"Seeing the condition of Aceh, it seems that any effort the government takes for immunization is difficult because of the high resistance from the community, because community people feel that content of the vaccine is not halal and they think the child remains healthy although it is not immunized. Therefore, religious leaders should be pursued and mobilised to influence the community. Also, there is a need to conduct training related to immunization to religious leaders and providing training on immunization from a religious perspective or side to community"* (Informant, BIreuen)

f. MUI/MPU District

Majelis Ulama Indonesia or Majelis Permusyawaratan Ulama (only in Aceh) is an independent institution that accommodates the ulama. In accordance with its duties, MUI assists the government in doing things that concern the benefit of Muslims, such as issuing fatwas on the halalness of a food. In Aceh and Padang, role of MUI/MPU in immunization activities are to ensure the vaccine is halal or haram and provide socialization activities to ulama about halal/haram vaccine. MUI is included in the advocacy team up to the sub-district level to conduct socialization activities on immunization at community level.

According to MPU Bireuen, community's opinion about immunization is what the ulama (or MPU) say. While in Padang, there are still many people who refuse to immunize children, especially certain organizations with ideologies and religious views that are different from society in general (the halal vaccine factor). Thus, Ulama (religious leaders) both in BIreuen and Padang is most influential in promoting immunization uptake.

The most common obstacle in Bireuen is Aceh Province applies Islamic sharia (Syariah Islam), therefore, the community obeys what the ulama say. For example, health workers who do not comply with Islamic law will face obstacles, while in Padang the most common obstacle is on halal haram vaccine issue, because there are some Islamic organizations that find it hard to accept the vaccine.

> *"There are still many people who refuse to immunize children, especially certain organizations that have different ideologies and religious views from society in general. The refusal was due to the issue of the halalness of the vaccine to be injected.."* (Informant, Padang)

If provided opportunities, MPU Bireuen will determine legal clarity regarding vaccines to the public, while MUI Padang will conduct a mass movement of immunization socialization activities to ulama at the sub-district level. MUI Padang also hopes that there is direct meeting from the center to the sub-district ulama (who close to the community) by involving MUI from beginning and being facilitated, because so far it has only been involved as a resource.

5.9.3. Health Workers

Health workers (village midwives) have many jobs either in service or outside the facility. They provide immunization services; health service; family planning, MCH, pregnant women class, as well as health screening. Roles of health workers (village midwives) in Bireuen were claimed very big. Health workers in Padang said health workers have 100% role for immunization program.

Village midwives will visit homes and report to puskesmas if there are mothers who do not want their children to be immunized when working with a family among others. In Padang village, midwife will provide health education face to face and collaborate with cadre.

In Bireuen, the people who have the most influence to encourage mothers to immunize their children are husband, Geuchik (head of village) and cadres, while in Padang they are local community leaders (head of village, RT, RW), cadre and parents whose children are immunized.

According to village in Bireuen, community members have already understood about the benefit of immunization, but they still have doubts about halal vaccine thus it caused lack of belief in the benefits of immunization. In Padang around 70% believed in the benefits,

"Big (in number), if seen from the coverage it's about 70% .." (Health worker4, Padang)

Motivation to immunize children among mothers was low in Bireuen because mothers first need their husband's permission to immunize their children. In Padang, the mothers' motivation was higher, at around 70-80%.

The obstacles faced by village midwife in immunization in Bireuen are halal haram issue. Community members obey religious leaders more than health providers. Most people have misinformation about cases after immunization. In Padang, village midwives face obstacles such as lack of information on immunization, low education, husband prohibition; the schedule did not match with mothers, because in Padang many mothers work outside home. Other obstacle is new vaccine such as IPV and MR raised halal haram issues.

Village midwives in Bireuen and Padang provide counseling including door to door to community in order to increase willingness of community members to immunize their children. In Padang village, midwifes approach grandmothers, because they are the influencers in immunizing their grandchildren.

5.9.4. Program Level Worker

Program manager of EPI has main tasks related to immunization including planning, evaluating the performance indicators, coordinating with districts/cities regarding immunization coverage in each region, as well as conducting supportive supervision and DQS validation.

Immunization programs or activities are working well in other areas except Aceh. Only some districts have good coverage. Fully immunized is still 14%, except in Aceh Tengah District was 42%. At present, school immunization/BIAS already ignore haram / halal issues, unlike what happened during the 2018 MR campaign. In West Sumatera prior to MR immunization campaign, the coverage of immunization in West Sumatra had good coverage, but during MR the coverage was not good due to the issue of halal vaccines.

The difficulties faced related to immunization activities in Aceh is that the community has not received proper immunization information. Therefore, the community does not fully understand the purpose or benefits of immunization. In West Sumatera obstacles faced are, although health promotion and IEC through the media (banners, leaflets and radio) is provided, it is difficult to control hoax news. Other obstacle comes from the influence of husband and ninik mamak (aunt) in making immunization decisions. For program activities, there are no obstacles faced.

Community acceptance of immunization services include acceptance of vaccines. In Bireuen or Aceh, immunization depends on religious leaders, all immunizations are rejected. If the MPU agrees, immunization coverage will improve. In West Sumatera, acceptance of the community varies, some are receiving immunizations well and some not well. It is difficult to make people with higher education understand as they feel they know.

Immunization was delayed by some parents in Aceh. Although not all parents, but many of them refuse, so intense socialization activities for mothers who have just immunized their children are needed. Many children did not get immunization and it should not have happened, because of ease of access to reach immunization facility. Recently, the reason for delay was COVID-19 pandemic.

In West Sumatera, respondents in the red zone are postponig immunization during this pandemic. The type of immunization that is most often delayed is immunization against measles rubella. Delaying of MR happened because of halal and haram issues.

There are no community concerns about immunization in Aceh because most people did not worry as they don't know the importance of immunization. While in West Sumatera there are still people who feel worried because of the halal of vaccines and the adverse effects of vaccines.

In Aceh, benefit of immunization was believed by people with high education level. It is important to continuously provide information about immunization. The problem is that many village midwives do not live in the village. Senior staff midwives are more patient than junior midwives. In West Sumatera there are still people who don't believe in vaccines.

In Aceh, public belief that immunization can prevent disease is low, because people believe their religious community (Ulama) very much. If health workers violate sharia, she will be ostracized. So, if the officer immunizes the children that are prohibited by sharia, then they are excommunicated. In West Sumatera most community knows that immunization can prevent disease, but due to issues it makes people not take children for immunization. Both in Aceh and West Sumatera, people are still doubtful about immunizing their children because of unclear halalness status of the vaccine.

In Aceh, all communities and related sectors must play a role, because immunization belongs to all. It is especially important to clarify halal haram vaccines issue, while in West Sumatera, there is a need for collaboration with education office and religious leaders to combat halal and haram issues and side effects caused by immunization.

Decision maker has important role in immunization. In Aceh, the decision makers are the husband and parents (mother-in-law for those who still live with their parents). Men have an important role in making decisions about whether children are immunized or not. While in West Sumatera the most important role was said to be Ninik Mamak (mother’s younger brother).

In Aceh if a wife takes their child to be immunized, she can be threatened by her husband (divorce). While in West Sumatera motivation can be seen by those who understand immunization will complement their child’s immunization.

Community in West Sumatera feels comfortable and satisfied with immunization service they received. While in Aceh, they are satisfied. In city areas, there are those who are comfortable and trust more in specialist doctors in administering vaccines.

When people took their children to a government facility for immunization, they did not pay for it. In Aceh, even though it is free of charge, mothers who come to the posyandu do not necessarily want to immunize

their children. They come only to weigh and get food supplement (PMT) as well as in West Sumatera, people come to posyandu to get PMT.

Aceh suggested to approach husband and improve FKMPI performance. Defaulter tracking is needed to track children who have not been immunized, so that the achievement of the immunization program will be even better in the future. While in West Sumatera, there is need for clarification in terms of vaccine refusal due to halal and haram issues

VI. DISCUSSION

6.1. Adaptation of the Tools

Tools of BeSD developed by WHO with the Increasing Vaccination Model have been translated into Indonesian adapted to the Indonesian context and discussed with WHO. Tools of BeSD have been carried out through the cognitively test (the CIS) and pilot tests for the qualitative in-depth interview guides (CIDI) to ensure that the tools could be adapted for the Indonesian context. From the results of the CIS, most questions can be answered easily. The pattern of the questions with the answers is read out and showing an emoticon card to make it easier for the respondent to respond the optional answer. After testing, several questions were revised to make it easier for respondents to understand the questions, and some questions were also added to get more complete information. Some of the questions that were changed were adapted to the Indonesian context, such as for questions on religion and daily language.

Meanwhile, most of the questions after the survey question (cognitive testing guide) were quite difficult for respondents to answer. This is due to the fact that most Indonesians are not used to express their feelings or opinions, especially those with low education and living in rural areas. Thus, adaptation of the tools was needed for CIS cognitively testing.

While all interview guides were generally responded well by informants, the guides needed additional questions or probes in order to could obtain more information. Besides that, additional questions were also needed to ease both interviewer and informant during interview.

6.2. Methods

Methods of this study used quantitative (with the CIS (Childhood Immunization Survey)) and qualitative approach with in-depth interview for key informants such as: caregivers, health providers and community influencers. All key informants in each level (village, health centers, districts and provinces) were asked about pratical issues, motivation of people, social process and what people think and feel about immunization.

For quantitative approach, the survey had 270 samples for each district; enumerators had been adequately trained before the survey. The survey aimed to know the motivation of caregivers, social processes, and the immunization coverage of the children. The bias (information and selection bias) was minimized in the survey.

For qualitative approach, we used content analysis with the aim of observing existing phenomena through the accuracy of the formulation between those being studied and all actions based on the reasons for taking individual actions. Key informants in the qualitative approach were persons who were responsible for caregivers, health providers in health centers and DHOs and community influencers from formal leaders and informal leaders including religious leaders in Aceh and Padang.

6.3. Community Influencers as Social Driver

Community influencers as social drivers in uptaking vaccination from the BeSD study included health workers, health cadres, community and religious leaders, professional and nonprofit organization (including religion organization) such as IBI, PKK, MUI, Muhammadyah, Nahdatul Ulama (NU), etc. They have their own roles. The health workers, health cadres, IBI, and PKK have roles in health sectors including immunization. They have responsibility in their own task to improve the health program. However, community and religious leaders in this study sites also have important roles in uptaking immunization or not. In Aceh and West Sumatera specifically at Bireuen, ulama are very respectful. Communities follow what ulama state, while in Padang City most community are still respectful of ulama, but other are not, because Padang City is an urban area with plural population.

Local religious leaders in study sites specifically in Bireuen (Aceh) needs consideration as an agent to increase immunization coverage in their area. The successes reported by UNICEF for the strategy of seeking partnerships with religious leaders are for developing countries that have just started or expanded their immunization programs and also have high levels of illiteracy [24]. The religious leaders are mainly Islamic imams and catholic priests who explain the duty of parents to secure the well-being of their children to their congregations (i.e., preach about vaccination). Another report of a successful intervention comes from the USA, where the involvement of religious leaders in the campaign to increase influenza vaccination coverage indeed increased coverage among adults [25].

Yet another successful example of partnering with religious leaders concerned the politically-motivated boycott of the polio vaccination campaign in Nigeria on grounds that the vaccine might be unsafe: Religious leaders were successfully convinced to stop the boycott once the safety of the vaccine was guaranteed by foreign biomedical experts of the same religion [26]

The survey found that in Padang City religious beliefs supported immunization was higher (64.8%) than in Bireuen District (46.3%). This reflects that the religious leaders in urban area are more open and accepting in communities. According to UNICEF, in Eradicating Polio (2012) religious leader as influencers is influential and well respected and have mass reach in their respective communities. Therefore, it was important to involve them as influencers to motivate the community.

6.4. Contributing Factors

Some factors contributed in immunization uptake. According to Increasing Vaccination Model, there are factors that people think and feel that consist of disease risk appraisals. These are thoughts and feelings about potential health problems caused by infectious agents (perceived risk and fear); vaccine confidence is the attitude that vaccines are good (effective) or bad (unsafe). Risk appraisals and confidence motivate people to vaccinate or not. Another term for low motivation to vaccinate is hesitancy. In social process social norms, social desirability biases and preferences about vaccination can lead to vaccination uptake. Practical issues, such as convenience and quality of immunization services, are also important factors in this model to uptake vaccination coverage.

6.5. What People Think and Feel

Perception of people was that immunization was very important for the children in Bireuen (80%) and Padang city were (91%). In Bireuen, 58.9% people thought that immunization can prevent their children from the diseases and 43.7% people in Padang city thought so. In both places, people think and feel that immunization is important but can not prevent their children from diseases.

The perception on immunization depended on the people's thinking and feeling. Their thinking and feeling on immunization depended on their knowledge and the information they got from any source of information. In both places, the information on immunization should be provided widely through many ways such as banners, leaflets, midwifes, religious leaders etc.

From multivariate analysis, among all factors in multivariate analysis, three factors contributed to full immunization coverage in Bireuen. These factors were immunization at health centers, motivation to get immunization, missed vaccination and knowledge on TBC immunization. While in Padang city, factors were, intention to get vaccination, motivation to get immunization, mothers decision autonomy, descriptive social norm, missed vaccination, providers encourage for immunization, knowledge on Diphtheriae immunization

The factors contributed to fully immunized status of children were different. It shows the factors in Bireuen and Padang city were different therefore all those factors should be taken into account to be intervened both in Bireuen and Padang city differently. It also shows that Bireuen district and Padang city have different characteristic that is rural and urban respectively.

6.6. Identify beliefs and Social norms

Religious beliefs regarding immunization can influence a mother's decision to immunize her child. In the study sites, especially in Bireuen, Islam as a major belief is very influenced in daily activities. This is reflected from survey results that in Bireuen, only 46.3% responded that their religious beliefs supported immunization whereas in Padang City this percentage was 64.8%.

According to John J. Macionis (1995), Norms are rules and expectations of society that guide all the behavior of community members. In this study, social norm showed that majority of respondents 84.4% in Bireuen and 91.5% in Padang city supported immunization for parents they knew. Similarly majority of respondents, Bireuen (78.9%) and in Padang city (91.9%) said that it was close family who supported or wanted them to immunize their children. Most respondents Bireuen (95.6%) and Padang city (94.8%) said that community leaders supported immunization. This percentage was slightly less for religious leaders Bireuen (93.3%) and in Padang city (81.1%). From the survey, it was found that the caregiver gave good information. In the contrary religious leaders and other influencers both in Bireuen and Padang city said that if the vaccines is stated as haram then it can not be accepted for our religion and the people will follow religious rules. Aceh province has strict religion rules in all districts that people should follow for any acitivity including prosyandu and immunization. On the other hand, at Padang city religion rule was not strictly implemented in any activities.

With the social process above immunization will face religion process more difficult in Aceh compare to in Padang city. In Aceh social process activities in posyandu including immunization should follow the religion rule (called syariah), unlike the condition was in Padang city.

6.7. Practical barriers to vaccine uptake

All mothers (95% or more) knew the place of immunization services and knew the schedule of immunization. The mothers brought their children to Posyandu (72.5%) in Bireuen and (73.4%) in Aceh. Respondents (15.5%) in Bireuen and (34.7%) in Padang city brought their children to clinic. Qualitative results showed that practically, community have ease of access to immunization, because their areas are surrounded by immunization facilities such as posyandu, health center, midwife, clinic or hospital in the city (Padang). However, it was also stated that in some household where both parents work, children are vulnerable to miss out on essential vaccines. In such cases, further review of the clinic operating hours and general convenience of services for households where both parents work outside the home is recommended.

Furthermore, fathers in Bireuen had great decision-making power for the immunization of their children 45.2% compared to Padang city (11.5%). The decision-making autonomy of mothers in Bireuen was at 21.9% and 56.7% in Padang city. This reflected that in Aceh mothers did not have decision making power to immunize the children, while in Padang City mothers had the decision power to immunize their children. From qualitative study, it was found that mothers were actually willing to immunize their children, but their husbands or parents did not give permission due to reasons that they are scared that their children will get fever after immunization.

6.8. Motivation

According to Sumandi Suryabrata in Djaali (2012) motivation is a state contained in someone who encourages him to do activities in order to achieve a goal. CIS results show that 50.7% of respondents in Bireuen District and 67,8% in Padang City want to get all of the immunizations recommended by the government. Additionally, in Bireuen District as many as 18.9% of respondents said they did not want their children to get any of the reccomeneded vaccines, compared with just 3% in Padang City.

From all respondents who wanted to get all or some of the government reccomended vaccines for their children, as many as 16.9% in Bireuen district and 30.5% in Padang City reported high motivation (“very much”) for getting these vaccines. This reflected some factors on what people think and feel and social process have affected the low of motivation to immunize the children. From qualitative study, it was found that parents have misinformation about the issues of the adverse effects, the counterfeit vaccine and the halal/haram issue.

Motivation to immunize is also influenced by who makes the decision. Decision making is a process that occurs in the family and is the result of the interaction between the roles of family members to influence each other (Scanzoni and Scanzoni, 1981). This study found that husband, parent or mother herself may decide whether their children should be immunized or not. By knowing the pattern of household decision making, it can also be seen whether there is gender domination in a household or not.

6.9. Childhood Immunization Survey/CIS

The survey was conducted in Padang City and Bireuen District following a Cluster Immunization Survey WHO (WHO (WORLD HEALTH ORGANIZATION), 2015). The Survey was conducated by six trained enumerators and coordinated by experienced field coordinators in each district. As a survey or cross-sectional study, the results depend on the time of data collection done on the survey time. If data collection was done at a different time, the results will be different compared to the earlier one. This is a disadvantage of the survey and cannot be minimized.

Sample size in this survey is adequate for bivariate or multivariate analysis, but if many variables related to fully immunized status of children were found in multivariate analysis then wide accuracy can not be avoided. The multivariate analysis in Bireuen found 4 variables correlated to fully immunized (these were service delivery at Puskesmas, motivation, delayed schedule and knowledge on BCG vaccine), while in Padang city found 7 variables correlated to full immunization (these were willingness, motivation, mother's autonomy to make decision, social norm, delayed schedule, immunization officer, knowledge on DPT vaccine).

Selection bias had been minimized by random selection of sample. Information bias was also minimized by conducting the training for enumerators before data collection carried out. We recruited graduates having bachelor degree on health science for enumerators in order to ensure that their understanding on questionnaires is clear and they can interview respondents properly.

6.10. Qualitative Approach

In qualitative study, information was gathered from key informants depended on who the key informant is. Key informants will give comprehensive information if they know the information required in the study. Selection of the key informants in the study played a role for successful implementation of the qualitative study. In this study: caregivers, health providers and community influencers were key informants that were selected in this study. The selected informants interviewed were proper key informants both in Bireuen and Padang city, especially for community influencer of religious leader called Provinces Islam Syariah Council (MUI) interviewed in both provinces and district/city.

6.11. Immunization Coverage

Immunization coverage reflects the acceptance or rejection of vaccination and acceptability of vaccination services in communities. If immunization coverage is high, it shows strong community acceptance of vaccination and can be a positive reflection of the quality of immunization services. The increasing vaccination model states that there are 4 factors affecting coverage and uptake of immunizations these are: What people think and feel, Social Process, Motivation, and Practical issues.

The full immunization coverage in Padang City was 32.2% and 23% in Bireuen. Motivation, social process and what people think and feel were more difficult in Bireuen compared to Padang City.

VII. CONCLUSION, RECOMMENDATION, AND REFLECTION

7.1. Conclusion

The behavioural social driver (BeSD) approach using increasing vaccination model had been implemented in Aceh (in Bireuen district) and West Sumatera (in Padang city). Quantitative and qualitative approaches were used in the study. The quantitative approach used the Childhood Immunization Survey (CIS) and qualitative approach gathered information from caregiver, health provider, and community infleuencers in villages, health centers, disctricts and provinces. The finding can be shown below:

7.1.1. Immunization Coverage

- Less than half children received complete or full immunization (23.0%) in Bireuen District and 32.2% in Padang City.
- Most type of immunization received by children is HB0 (80.7%) in Bireuen District and 94.8% in Padang City.
- Posyandu or outreach facility was the place most visited to get immunization services for DTP-HB-Hib 1 antigent (83.5%) in Bireuen District and 65.4% in Padang City.
- Posyandu or outreach facility was the place most visited to get immunization services for Measles/MR antigent (86.4%) in Bireuen District and 67.9% in Padang City.

7.1.2. What People Think and Feel

- There are 88.2% respondents in Bireuen district and 93.9% in Padang City who answered that immunization was somewhat or very important.
- Almost all respondents (80.0% in Bireuen district and 91.1% in Padang city) said that all children should be immunized
- Respondents who believe that immunization can protect children from diseases was 72.2% in Bireuen district and 65.6% in Padang city
- Around 56.3% of respondents in Bireuen District and 64.1% of respondents in Padang City said that immunization can protect other people in their community from disease
- In Bireuen district, respondent who said immunization was somewhat or very safe for children's health was 88.8% and in Padang City it was 95.5%.
- As many as 59.3% of respondents in Bireuen District and 53.7% in Padang City were somewhat worried that immunization could cause a serious reaction, but only 18.5% and 7% were very worried in both places respectively
- Trust in health providers was very high with 84.9% of respondents in Bireuen district trusting their healthcare provider somewhat or very much and 98.1%.in Padang city

7.1.3. Social Process

- As many as 64.8% of respondents in Padang City said that their religious beliefs supported immunization, while in Bireuen District it was only 46.3%.

- Interestingly, much greater proportions of religious leader support were reported; as many as 93.3% in Bireuen District and 81.1% in Padang City said that religious leaders supported them in immunizing their children.
- In Bireuen District, 45.2% respondent said that primary decision-maker was the father and in Padang, the primary decision-makers are mother (56.7%), in both districts about 1/3 reported that both the mother and father were joint decision-makers for immunization.
- There are 88.1% of respondents in Bireuen District and 62.6% of respondents in Padang City who said that they need permission from their husband or family to take their children to immunization service facilities.
- In both districts, just under half of the respondents reported hearing something bad about vaccines in the last year.
- In Bireuen District, negative information that respondents hear most often is the issue of halal and haram (56%) and in Padang City is the side effect of immunization (67.7%)
- There are 84.4% of respondents in Bireuen district and 91.5% of respondents in Padang City who said that most of the parents they knew gave immunizations to their children.
- There are 78.9% respondents in Bireuen District and 91.9% in padang city who said that most of the respondent's family or close friends wanted the respondent's child to be immunized.
- In Bireuen District, 95.6% of respondents and in Padang City 94.8% of respondents said that community leaders supported them in immunizing their children.
- There are 61.1% respondent in Bireuen District and 60% in Padang City who said that health workers were the source they trusted for information on immunization in the community
- Across both places, health providers were cited as the most trusted source of information on immunization (62% in both distrcits), followed by health cadres and then family friends or neighbours.
- As much as 88.5% of respondents in Bireuen district said that health workers had suggested immunizing their children, the percentage was similar in Padang City (84.8%).
- In Bireuen District, the information received most by respondents from health workers was the benefits of immunization (82.2%) and in Padang City was the next immunization schedule (74.4%).

7.1.4. Motivation

- Only about 50.7% of respondents in the Bireuen District and 67,8% in Padang City want to get all types of immunizations recommended by the government.
- In both districts, just under 1/3 reported they wanted their children to get some of the recommended vaccines, and in Bireuen District as many as 18.9% said they wanted none of the recommended vaccines, compared to 3% in Padang City.
- Of all respondents who said they wanted ‘all’ or ‘some’ vaccines recommended by the government, as many as 16.9% in Bireuen district and 30.5% in Padang City said they wanted these vaccines ‘very much’, and a further 66.7% and 63.7% respectively said they were ‘somewhat’ motivated to get them.

7.1.5. Practical Issues

- Mostly respondents know the place of immunization services (98.5%) in Bireuen District and 99.3% in Padang City.
- In Bireuen District 71.5% of the respondents had brought their children to be immunized and in Padang City (91.9%).
- Posyandu was the place most visited to get immunization services (72.5%) in Bireuen District and 73.4% in Padang City
- Mostly respondents said they had easy access to immunization services (94.6%) Bireuen District and 99.3% in Padang City, however of the 94.6% in Bireuen District, only 16.7% said it was 'very' easy, and of the 99.3% , only 35.2% said so in Padang City.
- Mostly respondents said immunization was easy to afford (98.1%) in Bireuen District and 96.3% in Padang City.
- Satisfaction with immunization services was high across both districts with 98% in Bireuen District and 96.7% in Padang City reporting they were very or somewhat satisfied with services during their last visit.
- In Bireuen the reasons cited for low satisfaction was lack of time spent with healthcare staff and staff inability to answer all questions, whereas in Padang City additional reasons cited were lengthy waiting times, and lack of respect from immunization staff.

7.1.6. Multivariate Analysis

Results of multivariate analysis shows that factor associated with fully immunized status of children in Bireuen District are immunization at health centers, motivation for immunization, missed vaccination and knowledge on TBC immunization. While in Padang the factors were: intention to get vaccination, motivation to get immunization, mothers decision autonomy, descriptive social norm, missed vaccination, providers encourage for immunization, knowledge on Diphtheriae Immunization. The factors associated to full immunization status of children in Padang city were very different compared to Bireuen district.

Religious law is determined by the The Ulama Consultative Council (MPU/Majelis Permusyawaratan Ulama) and supervised by the Sharia Council (Majlis Syariah), while in Padang City it is not determined by sharia

The social structure in Bireuen is more determined by Islamic Sharia, while in Padang by combination of religion and social values.

7.2. Recommendation

7.2.1. General

- Social driver concept using increasing model immunization can be implemented in all disctricts and cities in Indonesia and it was easier than other concepts.

7.2.2. Immunization Coverage

- Immunization coverage in Aceh (Bireuen) and West Sumatera (Padang City) can be increased by improving the motivation, social process and pratical issues and what people think and feel as mentioned below.

7.2.3. Motivation

- In Bireuen District, intention of motivation to get vaccines for children is comparatively low. This is possibly related to other challenges associated with immunization, particularly on social support within the household and from religious organisations.

- Motivation can likely be increased by leveraging existing trust in health workers and other social networks, particularly religious leaders and influencers in Bireuen to speak out in support of vaccination.

- Communications and engagement strategies should reinforce the importance of vaccines for the individual as well as the community (explaining the benefits of herd immunity) and aim to build strong social support and peer encouragement for immunization.

- Further investigation into the reasons why almost 20% of respondents did not want any of the government recommended vaccine is advisable for a more targeted approach.

7.2.4. Social Process

- In both districts there is generally very high community support for immunization, with great trust expressed in healthcare providers and health cadres as sources of information on immunization. This must be capitalized and made more visible to showcase support for immunization as a social norm.

- In households where one parent does not have the autonomy to make decisions about immunization, it is key to strengthen the household support for immunization, targeting fathers and other heads of household who have the final say on vaccination.

- While religious leaders are thought to be generally supportive of immunization, in Bireuen District in particular it is thought to be discouraged by the rules of relgion. It will be important to work with religious leaders, in combination with healthworkers and health cadres who are well trusted sources to reinforce religious support for immunization to parents and other members of the community.

- In the future, religious leaders should have a responsibility to mobilize communities and ensure that all children are fully immunized against childhood vaccine preventable diseases. Their participation is very important to promote uptake of vaccination. Therefore, DHO and other sectors need to map the situation in the district and state the roles of religious leaders clearly.

- This study shows that healthcare providers are highly trusted sources of information on immunization. This must be leveraged to reinforce the importance and benefits of full immunization for individuals and the community.

- However, the role of health provider in Aceh is more complicated compared to Padang city, in Aceh the health provider should follow the rule of religion (syariah) and procedure on immunization provision while in Padang city only procedure on immunization provision. Therefore, partnerships between health providers and religious groups and leaders are encouraged to present united public support for immunization.

- The creation of a discussion guide to support healthworkers to address questions about immunization and religion is highly recommended, including how to have productive discussions that will result in acceptance and uptake.

7.2.5. Practical Issues

- Generally, immunization services were thought to be easy to access, but a closer look at results point out rooms for improvement in Bireuen District where satisfaction was lower. Insights from this study point out a need for strengthening the capacity of healthworkers to answer the many diverse questions that caregivers have. It is also important to strengthen healthworkers interpersonal skills to ensure that caregivers feel respected, that their time and perspectives are valued.

- This study indicated that in households where both parents work outside the home children are more likely to miss out on vaccination, immunization programmes should focus on how to make services more convenient for such households. This could be done by extending service hours so parents can immunize children after work, or expanded school-based immunization activities to ensure these children do not miss out on life-saving vaccines.

7.2.6. Thinking and Feeling

- CIS results show that most experience some concern over safety of vaccines, but very few feel very concerned. More effort should focus on reassuring families on the safety of vaccines, and their value for protecting children and communities.

- Haram issue is a major problem in Aceh and West Sumatera, especially in Bireuen and Padang city. For many, it was not clear if religious rules supported vaccination, even where religious leaders could be supportive. Religious organisations and leaders could be better engaged to convey the important benefits of vaccines, and health workers should be prepared to answer questions on this subject accurately.

- Fathers, who are often the main decision-maker in the household, could be better engaged to understand and support immunization. This was suggested by many community influencers in the qualitative interviews. Educational workshops can be organised to support this and

communicate that vaccines are essential for long, healthy and prosperous lives of the next generation.

Finally, it should be noted that these recommendations are made on the analyses presented in this report only. Further, more in-depth analyses of the data collected as part of this study and triangulation with other sources of data could be helpful to inform other important actions for immunization programmes in Bireuen Distric and Padang City, and even in Indonesia more generally.

7.3. Reflections

This study used new concept of behaviour that is very different with early ones such as: Behaviour concept by Lawrence Green (1968), utility of health service by Anderson (1986), and Health Belief Model. This behaviour concept is more practical than former ones. The Behavioural and Social Driver approach used practical approach in looking at coverage and quality of immunization in community, therefore the practical factors of the community should be considered, which are: practical issues on immunization services, motivation on why people visit immunization services, reasons why people think and feel and social processes that influences immunization.

After piloting in urban and rural sites in Indonesia (in Padang city West Sumatera and Bireuen in Aceh), it can be explored why coverage immunization in urban and rural sites were low in Indonesia. From the CIS result in both areas, there were few factors of pratical issues and motivation that affected why the people did not immunize their children. Factors such as how people think and feel and social process become big obstacles for people who bring their children for immunization both in Padang city and Bireuen, although in Bireuen it was more complex because all behaviour should follow the religious rules (Islamic rules).

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ANNEX

1. CIS Instrument and Qualitative Guide after testing
2. Final CIS Instrument and Qualitative Guide
3. Training Agenda
4. Ethical Approval Letter
5. Pictures of Activity
6. Distribution Tables
7. Matrix of Interview Result
8. Data Set

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