THE ROLE OF VOLUNTARY COMMUNITY HEALTH WORKERS (*KADER POSYANDU*) IN PREVENTION OF MOTHER-TO-CHILD-TRANSMISSION (PMTCT) PROGRAM AT PRIMARY HEALTH CARE LEVEL IN INDONESIA

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55th Master of of Science Public Health/International Course in Health Development (MPH/ICHD)

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A thesis submitted in partial fulfilment of the requirement for the degree of
Master of Science in Public Health

By

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Declaration: Where other people's work has been used (either from a printed source, internet or any other source), this has been carefully acknowledged and referenced in accordance with departmental requirements. The thesis "***The Role of Voluntary Community Health Workers (Kader Posyandu) in Prevention of Mother-To-Child-Transmission (PMTCT) Program at Primary Health Care in Indonesia***" is my own work.

Signature:

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Allaah Bless you all.

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ABSTRACT

Background: Community Health Workers (CHWs) or named *Kader Posyandu* in Indonesia play a role in efforts to prevent mother-to-child of HIV transmission during Ante-Natal Care visits (Asmauryanah, et al., 2014). CHWs are faced several issues which requires special attention for better policies, rules, and regulations. Their voluntarily efforts and activities should be more appreciated than their mandatory tasks.

Objective: This study sought to investigate the role of CHWs and factors influencing it in Prevention of Mother-To-Child-Transmission (PMTCT) program and the legal and policy environment in Indonesia.

Methodology: The study was literature and desk review study for which detailed analysis was done using the adapted Huicho et al. (Huicho , et al., 2010) framework exploring the role of CHWs in strengthening Prevention of Mother-To-Child-Transmission (PMTCT) program and factors influencing it in Indonesia.

Results: CHWs are faced several tasks and assignments without maximum support from the government.

Conclusion: The position of CHWs as volunteer and being utilized by several stakeholders will keep slow down the progress of PMTCT program in Indonesia.

Recommendations: Indonesia Ministry of Health should issue certain policy, technical guidelines, and financial dedicated to CHWs in the PMTCT program in relation to the commitment of the UN international goals to end AIDS in 2030.

Keywords: Community Health Workers, HIV-AIDS, PMTCT, Sexual and Reproductive Health and Rights, Maternal and Child Health.

ABBREVIATIONS

AIDS	Acquired Immuno Deficiency Syndrome
ANC	Ante-Natal Care
ARV	Antiretroviral
CHW	Community Health Worker
CSR	Corporate Social Responsibility
FKPI	Indonesia Integrated Health Post CHW National Forum (*Forum Kader Posyandu Indonesia*)
GDP	Gross Domestic Product
HIV	Human Immunodeficiency Virus
IDR	Indonesian Rupiah
ILO	International Labor Organization
PBFW	Pregnant and Breastfeeding Women
PHC	Primary Health Care
PMTCT	Prevention of Mother-To-Child-Transmission
Posyandu	Integrated Health Service Post (*Pos Pelayanan Terpadu*)
Puskesmas	Public Health Center (*Pusat Kesehatan Masyarakat*)
MCH	Mother and Child Health
NHS	National Health System
SDG	Sustainable Development Goals
STI	Sexually Transmitted Infection
UHC	Universal Health Coverage
UNAIDS	United Nations AIDS
UNDP	United Nations Development Programmes
UNICEF	United Nations Children's Fund
USD	United States Dollar
WHO	World Health Organization

DEFINITIONS

Kader Posyandu (Voluntary Community Health Workers / CHW)

The Indonesia Ministry of Health defined CHWs (*Kader Posyandu*) are workers who come from the community, are chosen by the community and work together for the community voluntarily (Mantra, 1983).

CHWS definition by the World Health Organization (WHO): "Community health workers should be members of the communities where they work, should be selected by the communities, should be answerable to the communities for their activities, should be supported by the health system but not necessarily a part of its organization, and have shorter training than professional workers." (World Health Organization, 2007).

The International Labor Organization (ILO) had classified that volunteers are part of classification of workers in relation to the production boundary of the System of National Accounts (International Labor Organization, 2011).

Posyandu (Integrated Community Health Post)

Posyandu (integrated service post) is a form of effort from community-based health services conducted by, from, moreover with the community, to empower community in order to obtain health services for mothers, infants and toddler (Indonesia Ministry of Health, 2012).

PMTCT

Prevention of mother-to-child transmission, refers to interventions to prevent transmission of HIV from an HIV-positive mother to her child during pregnancy, labour, delivery or breastfeeding (World Health Organization, 2019).

INTRODUCTION

Voluntary community health workers (CHWs) play important role in mobilizing the community in public health activities in Indonesia (Indonesia Ministry of Health, 2012). They are attached very close to the community and they are expert of their territory. CHWs understand the region best, but in terms of quality, it is not uncommon for those who still have sufficient knowledge in the health sector.

Working on Corporate Social Responsibility (CSR) sector and my house in home town located in rural village provides integrated community health post (*Posyandu*), I have experienced several cases what CHWs faced in PMTCT program. Stigma and discrimination among pregnant and breastfeeding women (PBFW) living with HIV including their infants still labelled among these groups making them less motivated in accessing PMTCT package at the primary health care services.

This thesis comprised of 5 chapters. Chapter 1 entailed background information on geography, demography, health and social context in Indonesia setting. Problem statement, justification, objectives, methodology, and theoretical framework were presented in Chapter 2 and a conceptual framework was also used in this chapter. The study findings of literature reviews were presented in Chapter 3 followed by the discussion in Chapter 4. Conclusion and recommendations were presented in Chapter 5.

CHAPTER 1.
BACKGROUND

This chapter gives an overview of the Republic of Indonesia (Indonesia) in terms of geography, demography, sociocultural context, health system, health financing, Voluntary Community Health Workers (CHWs), HIV-AIDS situation, and prevention-of-mother-to-child-transmission (PMTCT) program response of the country. This is to provide the reader a concise picture of Indonesian potential role of CHWs in PMTCT program in Indonesia setting.

1.1. Country Profile

1.1.1. Geography

Figure 1. Map of Indonesia
Source: (Lonely Planet, 2019)

Indonesia is situated in Southeastern Asia between the Pacific Ocean and Indian Ocean; see Figure 1. It is a country of around 17,000 islands with space of 1,904,569 square kilometers in total; land 1,811,569 square kilometers and water 93,000 square kilometers, makes it the biggest archipelago country in the world (Central Intelligence Agency, 2019).

Indonesia has 34 provinces and there are 5 (five) main and biggest islands; Java, Sumatra, Kalimantan, Sulawesi, and Irian Jaya (Geografi Organisation, 2018). The nation's capital is Jakarta located in Java Island (Geografi Organisation, 2018); an island belongs to 55% of pregnant women living with HIV (Indonesia Ministry of Health, 2019). The smallest division of Indonesia is village (Indonesia Statistics Bureau, 2016); the place where *Kader Posyandu* / Voluntary Community Health Workers (CHWs) work (Indonesia Ministry of Health, 2012).

1.1.2. Demography

The country's GDP per capita has steadily risen, from USD 807 in the year 2000 to USD 3,877 in 2018 (The World Bank, 2019). Despite heightened global uncertainty, Indonesia's economic outlook continues to be positive, with domestic demand being the main driver of growth. Supported by robust investment, stable inflation, and an active job market, Indonesia's economic growth is forecast to reach 5.2% in 2019 (The World Bank, 2019). The industrial sector is still the most significant contribution to the Indonesian economy. Based on data from the Indonesia Statistics Bureau (BPS), Indonesia GDP 2018 had most significant source from the industrial sector reached IDR 2,947.3 trillion (USD 608 million) or 19.82% of the national GDP of IDR 14,837 trillion (USD 3,060 million) (Indonesia Statistics Bureau, 2019). The second most significant contribution was the trade sector with a value of IDR 1,932 trillion (USD 398 million) or 13% of GDP and the third largest construction sector of IDR 1,562 trillion (USD 109 million) or 11% of GDP (Indonesia Statistics Bureau, 2019). Indonesia's spatial economic structure in 2018 is dominated by provincial groups in Java and Sumatra. Java Island gave the most significant contribution to GDP, which was 58.48 percent, followed by Sumatra Island with 21.58 percent, and Kalimantan Island 8.20 percent (Indonesia Statistics Bureau, 2019). Today, Indonesia is the world's fourth most populous nation. Indonesia has total population 270.6 million spread in 34 provinces in 2018 (World Population Review, 2019). About 56.7% of Indonesia's population lives on Java, the most populous island (World Population Review, 2019).

1.1.3. Literacy and Education

The national literacy rate in Indonesia is 95.7% with most likely similar levels of literacy among the regions aged >15; urban 97.6% and rural 93.3% (Indonesia Statistics Bureau, 2018). Despite an improvement in female education, there is no significant variations between males and females; 98.7% and 96.5% in urban, and 95.7% and 91.0% in rural (Indonesia Statistics Bureau, 2018). Indonesia ranked 104 out of 160 countries on the United Nations Development Programmes (UNDP) gender inequality index 2017, which measures gender disparities in education, reproductive health and economic and political participation. That ranking has changed little in recent years and is below that of most of its Asian neighbours (United Nations Development Programme, 2017).

1.2. Sociocultural context

Indonesia has more 300 ethnic and linguistic groups although the largest and most dominant in terms of politics are the Javanese at over 40% of the population (World Population Review, 2019). The country is the largest Muslim population in the world, with over 227 million people identifying as Muslim. Even though Indonesia is a constitutionally secular state, Islam is by far the dominant religion in the country (World Atlas, 2019).

1.3. Health system in Indonesia

In Indonesia, the National Health System (NHS); named *Sistem Kesehatan Nasional* / SKN; is the decentralization policy formulated in the National Health System based on the Presidential Regulation No.72/2012 (Indonesia Cabinet Secretariat, 2019). SKN is a health management organized by all components of the Indonesian Nation in an integrated and mutually supportive manner to ensure the achievement of the highest degree of public health (Indonesia Ministry of National Development Planning, 2019).

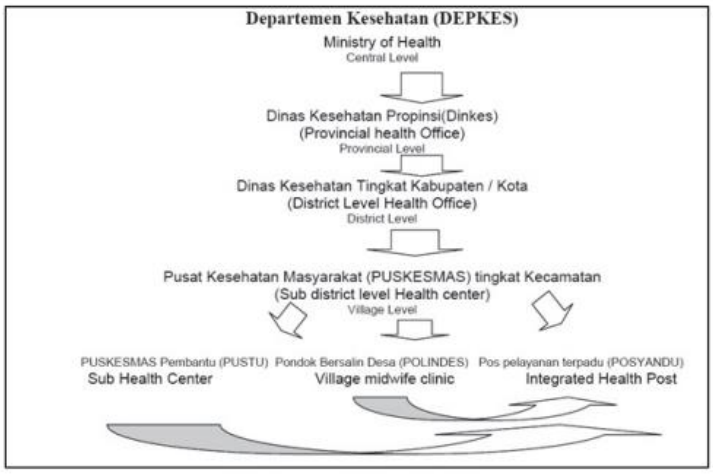

Figure 2. The health care system in Indonesia, including Posyandu (Integrated health post) at the community level
Source: (World Health Organization, 2003)

1.3.1. Health financing in Indonesia

According to Indonesia Ministry of Health, the health funding is conducted by increasing health budget proportion significantly to reach 5% of National Budgetary by 2019 (Indonesia Ministry of Finance, 2019). The increasing of funding can also come from other funding assistance among local government, private sector, and community as well as other sources from tariff/taxes, and customs (Indonesia Ministry of Finance, 2019). Total National Budget in Indonesia is IDR 296 trillion or equivalent to USD 21.1 billion (Indonesia Ministry of Finance, 2019). In order to improve the effectiveness of health development funding, the role and authority of central-regional should also be more productive, as well as the synergy of health development between central-regional and exceptional allocation fund management should be well-targeted (Indonesia Ministry of

Health, 2019). Despite Indonesia's rapid economic growth over the last decade, health expenditures remain relatively low. The share of government spending allocated to health is less than half the Abuja target of 15%, reflecting a relatively low priority of public spending on health and making it more difficult to achieve universal health coverage (Jowett , et al., 2016).

1.3.2. HIV-AIDS situation in Indonesia

People living with HIV-AIDS (PLWHA) in Indonesia were estimated for 620,000 out of a total of 5.2 million people in Asia Pacific infected with HIV-AIDS until June 2018 (Indonesia Ministry of Health, 2019). An estimated 3,200 children were newly infected with HIV due to mother-to-child transmission (UNAIDS, 2019).

1.3.3. PMTCT of HIV program in Indonesia

PMTCT program is part of health implementation program under the Republic Indonesia Law No. 24/2014 stated health implementation was responsibility of state/local government (Indonesia Ministry of Health and UNICEF, 2015). PMTCT program was initiated in 2004 involved various collaboration across programs and sectors. In doing so, the implementation requires coordination with all relevant stakeholders (UNAIDS, 2019). Indonesia Ministry of Health had issued prevention of HIV and Syphilis on mother-to-child-transmission guidelines in order to control the diseases (Indonesia Ministry of Health and UNICEF, 2015).

1.4. Community Health Workers (CHW) in Indonesia

The Indonesian Ministry of Health had set up the Health Strategic Plan 2015-2019 (Indonesia Ministry of Health, 2015) and one of the programs stated on the plan is Community Based Health Efforts/CBHE (Upaya Kesehatan Bersumber Daya Masyarakat/UKBM) in the form of *Posyandu* (Indonesia Ministry of Health, 2012). As a form of CBHE, *Posyandu* is managed and organized from, by, for and with the community in the implementation of health development, in order to empower the community and provide facilities to the community in obtaining basic health services, primarily to accelerate the reduction in maternal and infant mortality rates (Indonesia Ministry of Health, 2012). Consequently, people from the community worked voluntarily for Posyandu; named Kader Posyandu (Cadre) / Community Health Worker (Indonesia Ministry of Health, 2011). Currently Posyandu is required to implement 15 programs covering 5 basic health services and 10 government-mandated basic social services through Domestic Regulation No. 19/2011 concerning Guidelines for Integrating Basic Social Services at Integrated Service Posts. Almost all government agencies use Posyandu as a means of implementing their programs and become a source of public health data without an adequate budget.

CHAPTER 2.
PROBLEM STATEMENT, JUSTIFICATION, OBJECTIVES, METHODOLOGY, AND THEORETICAL FRAMEWORK

2.1. Problem Statement

CHWs are the drive motor of integrated community health post (*Posyandu)* in Indonesia (Akbar, et al., 2015). A study done by Perry et al. have reported that CHWs undertake a wide variety of tasks in primary and public health, and CHWs deliver interventions in primary health care including nutrition, maternal and child health, malaria control, tuberculosis (TB) control, HIV-AIDS prevention and control, mental health, and non-communicable disease. (Perry, et al., 2014). A review also reported that CHWs reduce child morbidity and child mortality, maternal mortality, and increase the likelihood of seeking care for childhood illness (Lewin, et al., 2010).

In Indonesia, CHWs influence the continuity of *Posyandu* (Akbar, et al., 2015). There are 283,370 *Posyandu* registered at the Indonesian Ministry of Health; 173,750 of the total number are actively carrying out *Posyandu* activities (Indonesia Ministry of Health, 2019). This means 39% of *Posyandu* are inactive from carrying out public health activities in the community. Meanwhile, *Posyandu* as part of primary health care level is the most important facility in the community-based approach in Indonesia (Indonesia Ministry of Health, 2012), launched by the government through the Health Strategic Plan 2015-2019 (Indonesia Ministry of Health, 2015). The community-based approach was initiated by the Indonesia Ministry of Health in relation to end HIV-AIDS as implication of the guideline from WHO to end HIV-AIDS in 2030 with prevention of mother-to-child transmission (PMTCT) program as part of the target goals by mobilizing CHWs in the community (Indonesia Ministry of Health and UNICEF, 2015).

In 2017, Indonesia is significantly behind the regional average for PMTCT coverage of just 13% and slightly increased to 15% in 2018 (UNAIDS, 2019). Integration of PMTCT and maternal and newborn child health (MNCH) services has been one of the areas where there has been a shift from a siloed to a more integrated approach (Hiarlaithe, et al., 2014). CHWs worked closely and directly attached with mother and children (Indonesia Ministry of Health, 2012). Improving PMTCT access and utilization required a holistic approach which may include community-based support (availability of peers support, knowledge and attitude of peers support). This is supported by the PMTCT guidelines by Indonesia Ministry of Health on creating community support for PMTCT services. The PMTCT Guidelines for the 4^{th} Prong; giving support on Psychological, Social, Medical and Nursing Support; explained mothers with HIV need psychosocial support in order to get along and work for a living as usual. Such support also needs to be given to children and their families (Indonesia Ministry of Health and UNICEF, 2015). CHW's involvement in the PMTCT program did not receive maximum support from the government in an effort to reduce stigma and discrimination in the community and to increase PMTCT uptake, adherence, and retention.

This study intends to explore the role of CHWs in strengthening PMTCT program coverage at primary health care level in Indonesia.

2.2. Justification

A research in Makasar-Sulawesi Selatan, Indonesia in 2014 conducted by Asmauryanah et al. that many respondents said CHWs play important role in efforts to prevent mother-to-child transmission of HIV during antenatal care (ANC) visits (Asmauryanah, et al., 2014). CHWs work closely with the group and also dealing with the complex realities of caring for the most marginalized groups. This research intends to find what factors influencing the role of CHWs for determinants of uptake, adherence, and retention of

PMTCT at primary health care level in Indonesia related to the low coverage and for better improvement of PMTCT program in Indonesia.

2.3. Objectives

2.3.1. General objective

The purpose of this study is to explore the role of CHWs in the PMTC program at primary health care in Indonesia and factors influencing it.

2.3.2. Specific objectives

Specific research objectives in this area might include the following.

1. To analyse factors influencing the role of CHWs in PMTCT program in Indonesia
2. To analyse current policies and programmes in relation to CHWs involvement in the PMTCT program in Indonesia
3. To give recommendation(s) to the policymakers based on the findings of this research

2.4. Methodology

This is a literature review study. A literature review and desk study were conducted using books, reports, peer reviewed articles, grey literatures including organizational websites. Personal observation was also included.

2.4.1. Search Strategy and Keywords

The search strategy was done using keywords through the following sources of reference libraries to retrieve available published scientific articles such as Google Scholar, Research Gate, Vrije Universiteit (VU) library, PubMed, Cochrane library, and Guttmacher Institute. Organizational websites both international and national were searched to obtain policies, reports, factsheets, and grey literature such as WHO, UNICEF, UNAIDS, The World Bank, Indonesia Ministry of Health, Indonesia Ministry of Finance, and Indonesia Statistics Bureau. Snowballing from references was also done from articles for proper referencing and additional appropriate information.

Table 1. Search Term

Source	Issues/Topics		Factors		Context
Reference from Libraries -Google Scholar -Research Gate -Vrije Universiteit (VU) library -PubMed -Cochrane library -Guttmacher Institute **Organizational Websites** -WHO -UNICEF -UNAIDS -The World Bank -Indonesia Ministry of Health - Indonesia Ministry of Finance -Indonesia Statistics Bureau	Community Health Workers OR Voluntary Community Health Workers OR Health Cadres	AND	Labor market, Organization and management capacity, Regulatory systems, Resources needs, Criteria for choosing interventions, Feasibility analysis, Education, Regulatory, Financial incentives, Management and social support, Attractiveness and intentions, Engagement, Deployment and contracting,	AND	Low and Middle Income Countries OR Asia OR South-East Asia OR Indonesia

			Duration in service, Job satisfaction, Availability, Competence, Productivity, Responsiveness, Accessibility and coverage, Service utilization, Client satisfaction, Performance health service accessibility and utilization, PMTCT uptake, adherence, and retention		

2.4.2. Search Criteria

The study included studies, researches, or articles on community health workers and PMTCT services both in English and Indonesian Language which are the languages the author can read. Term was limited from year 2009 to present, to give updated relevant data and to avoid out of date information. However, sources from before 2009's were sometimes included because; for example; there are laws related to CHWs in the Indonesia and at international level in the past time.

2.5. Theoretical Framework

The proposed adapted framework by Huicho et al (Huicho , et al., 2010) is based on community-based approach and differentiates between inputs (design), implementation, and results (outputs, outcomes, and impact), with regards to the result of intervention of CHWs in the community focusing on PMTCT program in Indonesia. This framework is to capture factors and overcome evaluation challenges due to the complexity of interventions. For each of these divisions, the author provide examples of indicators for evaluating success. Of particular interest for purposes of this report is the emphasis on education during the input phase, retention of CHWs as an output, CHWs performance as an outcome, and improved PMTCT as a measurable impact (Huicho , et al., 2010). Since the study explored role of CHWs in the PMTCT program, some changes had been made from the original framework. Client satisfaction replaced patient satisfaction in the "outcomes" dimension for responsiveness section. In "impact" dimension, improved PMTCT uptake, adherence, and retention has been used replacing improved health status. For indicators, number of CHWs replaced the number of health workers. CHW ratios, coverage rates client satisfaction, Sustainable Development Goals (SDG), and PMTCT uptake, adherence, and retention were also used in the adapted framework.

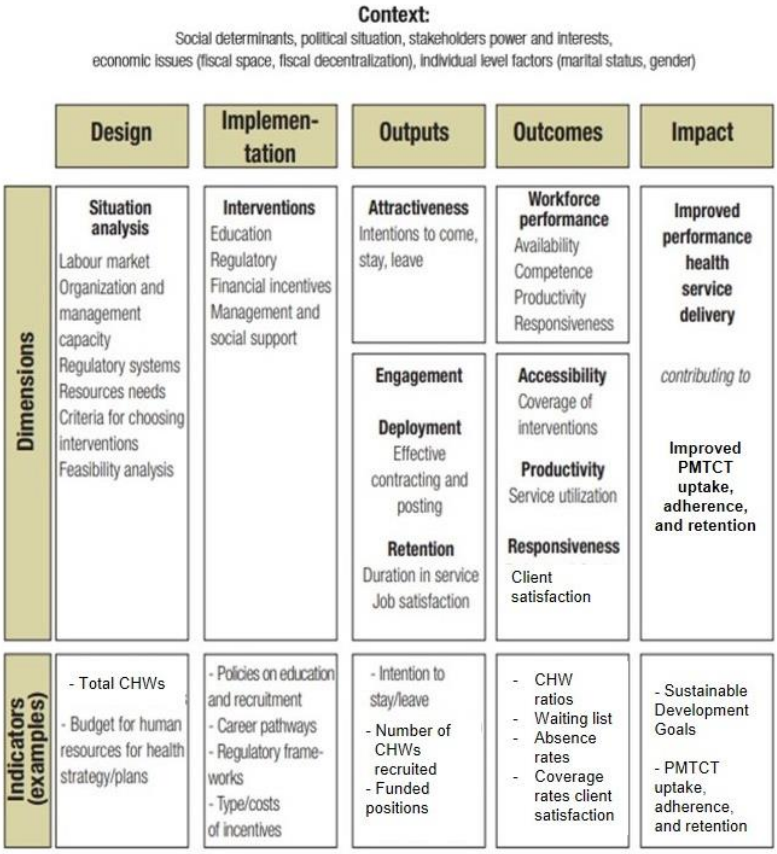

Figure 3. Adapted Conceptual Framework
CHW, Community Health Workers; PMTCT, Prevention of Mother-To-Child-Transmission.
Source: The conceptual framework for measuring efforts to increase access to health workers in underserved areas (Huicho , et al., 2010).

2.5.1. Social determinants, political situation, stakeholders' power and interests, economic issues (fiscal space, fiscal decentralization), individual level factors (marital status, gender)

Social determinants, political situation, stakeholders' power and interests, economic issues (fiscal space, fiscal decentralization), individual level factors (marital status, gender) are the context of the adapted framework of this study.

2.5.2. Design

The design stage should identify the extent to which the chosen intervention was relevant and adequate to the need, the expectations of the population and the health system context, and the reasons for selecting a particular option (Huicho , et al., 2010).

2.5.3. Implementation

The implementation of an intervention responds to evaluate and questions might include: did the activities take place according to plan, did any changes occur in implementation capacity or in the context that influenced the implementation of the intervention components? Did any changes occur regarding the involvement and commitment of stakeholders? Which ones and why? Was any action undertaken to adapt the intervention to the changes? What was done and why? Or why was no action taken? (Huicho , et al., 2010).

2.5.4. Outputs

The level of "outputs" is the direct effect, attributable to the intervention, such as increased attractiveness of the areas/or the CHWs profession, improved recruitment and deployment, and increased retention of CHWs in those areas (Huicho , et al., 2010).

2.5.5. Outcome
The level of intermediate "outcomes" is that of improved CHWs performance (Huicho , et al., 2010).

2.5.6. Impact
The level of "impact" is understood as the effect on health outcomes and an improved PMTCT, and other unexpected effects on underserved communities e.g. attraction/retention of other professionals or services (Huicho , et al., 2010).

2.6. Limitations of the study
Since studies from Indonesia hardly linked to the international online database, the author searched literature from Indonesian online database. Indonesian language and English were used for search terms, and the author specified search term for the role of CHWs in strengthening PMTCT. The author also collected unpublished or locally published literature. Literature reviewed were accessed online; the implication of this is that relevant literature that was not available online might have been left out. Additionally, the study did not use primary data, and this might limit the replication of the actual and current situation on the role of CHWs in PMTCT issues in Indonesia. Information on appointment mechanisms to the approachability of the study was difficult to find. The author collected the last ten years of literature to make this study findings more updated and relevant. View of the literature more ten years was also used related to CHWs historical story and policies at the beginning of their settlement in national and international level.

CHAPTER 3.
FINDINGS

This chapter discusses the role of CHWs in PMTCT program in Indonesia in the context of social determinants, political situation, stakeholders' power and interests, economic issues (in fiscal space and fiscal decentralization), and individual level factors (marital status and gender) using the adapted conceptual framework of Huicho et al. (Huicho , et al., 2010). All findings on the stages and dimensions using the adapted framework will be presented in each subheading in this chapter. The interaction among factors will be discussed in the next chapter.

3.1. Context: social determinants, political situation, stakeholders' power and interests, economic issues (fiscal space, fiscal decentralization), individual level factors (marital status, gender)

How does the context influence the role of CHWs in PMTCT program, and to what extent are they accountable to the role of CHWs in PMTCT program in Indonesia?

In Indonesia, Posyandu was established in 1984 to improve the capacity of the community in the healthcare sector and for a better community life. The concept of Posyandu is basically similar to the Primary Health Care (PHC) stated in the Alma Ata Declaration in 1978 which is a primary or essential healthcare service that makes healthcare recognized as a human right regardless of social, economic, racial, citizenship, religious status and gender (World Health Organization, 2019). At the beginning of its establishment, it had several activities such as nutrition improvement, diarrhea prevention, and community treatment in rural areas, immunization and family planning (Indonesia Ministry of Health, 2011).

According to the Ministry of Home Affairs Regulation No.19/2011, mentioned that Posyandu is one form of community healthcare effort that is managed and organized from, by, for and with the community in the implementation of healthcare development, in order to empower the community and provide convenience to the community in obtaining basic healthcare services for accelerate the decline in maternal and infant mortality (Indonesia Ministry of Home Affairs, 2011). From this understanding, Posyandu is one unit or place of healthcare service at the lower level that directly in contact with the community. The goal is to empower communities in the health sector, so that communities themselves can solve healthcare problems in their own areas. As a form of healthcare effort, Posyandu is assisted by Posyandu cadres (Community Health Workers/CHWs) who work voluntarily to deliver healthcare programs to the community.

'Posyandu National Day' is celebrated every April 29th and this year remark the 35th (Indonesia Ministry of Health, 2019). *Why the Posyandu Day celebration is important?* With the celebration every year, the Indonesia Ministry of Health has effort to always remind Indonesian people, especially mother and child to regularly access Posyandu for health service once every month. For the celebration this year, there was a progress concerning Posyandu and their CHWs. The Indonesia CHW Posyandu National Forum (*Forum Kader Posyandu Indonesia or FKPI*) was just initiated on April 2, 2019 in Palembang-South Sumatra, Indonesia. On the inauguration day, several important actors attended the event such as the Indonesia Ministry of Transportation, the Governor of South Sumatra province, the Mayor of Palembang city, and the Head of CHW Posyandu Indonesia National Forum (Indonesia Ministry of Home Affairs, 2019). The national forum's mission was to gather all CHWs into a legal form of workforce and to become registered worker nationwide across the country, and Palembang city as headquarter of the forum.

As stated previously that CHWs in Indonesia are considered volunteer workers from the community (Mantra, 1983). Their existence is an important part of community (Effendi, 2018). CHWs work directly to several stakeholders including the community, Head of Posyandu, Head of Village, Public Health Center at region level, and Health Office in the district (Indonesia Ministry of Health, 2016). In carrying out their work, CHWs were mandated to provide data and report on mother and children to the village midwife and the public health center in their area every month (Indonesia Ministry of Health, 2012). Compensation on local transportation cost and paper copying cost were not always available in doing to hand in the monthly manual data and report while CHWs had to reach the midwife's place or the public health center in the area (personal observation). The Indonesia Ministry of Health had issued a Regulation No.2/2019 on technical guidance of health budget for regional government (provincial level), district / city level, and village level (Indonesia Ministry of Health, 2019). Since the regulation was only a technical guidance, CHWs incentives and their operational budget related were not mentioned explicitly. CHW's operational cost and incentives are under the decision of the village head and the budget is part of '*Dana Desa'* (Village Budget). Therefore, CHW's operational cost and incentives are vary across the country. The 'village budget' was allocated by the regional government under the Ministry of Home Affairs in the country.

In Indonesia, CHWs usually are married women and housewives (homemakers) (Andriani, et al., 2016). In terms of gender, there is no limitation on whether females or males should be a CHW in Indonesia; both females and males could be voluntary employed at the grass-roots level as a CHW. There may be differences across countries, depending on their role and responsibilities, and the culture.

3.2. Design: situation analysis

Under the design stage using the adapted framework, this study explored findings in situation analysis on labor market, organization and management capacity, regulatory systems, resources needs, criteria for choosing interventions, and feasibility analysis on the role of CHWs in the PMTCT program in Indonesia.

3.2.1. Labor market

The term CHW is broad, and CHWs can be defined as health workers who have been trained to some extent but do not possess a formal professional certificate, many live and work in the community. It encompasses a wide range of health workers, paid and unpaid, professional and lay, experienced and inexperienced, including traditional birth attendants, village health workers, peer supporters, community volunteers, and health extension workers (World Health Organization, 2019). According to Indonesia Health Profile Data and Information 2018 issued by Indonesia Ministry of Health, there were more less 283,000 Posyandu spread in 34 provinces of Indonesia (Indonesia Ministry of Health, 2019). Each Posyandu was served by 3-4 CHWs (Indonesia Ministry of Health, 2012). In total, Indonesia had more than 1 million CHWs (Indonesia Ministry of Health, 2012); see Figure 4. The number showed that 39% of Posyandu were not active. High drop-out rates among CHWs have been observed.

No	Province	Grand Total Posyandu	Total Active Posyandu	Percentage Active Posyandu
1	Aceh	7.229	1.772	24,51
2	Sumatera Utara	15.475	7.933	51,26
3	Sumatera Barat	7.564	6.043	79,89
4	Riau	5.508	2.985	54,19
5	Jambi	3.471	1.760	50,71
6	Sumatera Selatan	6.550	4.347	66,37
7	Bengkulu	2.010	1.050	52,24
8	Lampung	423	297	70,21
9	Kep. Bangka Belitung	1.095	707	64,57
10	Kepulauan Riau	1.405	738	52,53
11	DKI Jakarta	4.382	4.202	95,89
12	Jawa Barat	50.894	29.048	57,08
13	Jawa Tengah	46.701	33.609	71,97
14	DI Yogyakarta	5.723	4.286	74,89
15	Jawa Timur	46.746	36.451	77,98
16	Banten	9.309	4.301	46,20
17	Bali	4.689	2.875	61.31
18	Nusa Tenggara Barat	7.226	3.817	52,82
19	Nusa Tenggara Timur	10.130	5.144	50,78
20	Kalimantan Barat	4.946	1.509	30,51
21	Kalimantan Tengah	2.587	503	19,44
22	Kalimantan Selatan	3.891	1.178	30,27
23	Kalimantan Timur	4.348	1.859	42,76
24	Kalimantan Utara	687	374	54,44
25	Sulawesi Utara	2.219	2.200	99,14
26	Sulawesi Tengah	3.288	1.182	35,95
27	Sulawesi Selatan	9.697	5.988	61,75
28	Sulawesi Tenggara	3.182	1.440	45,25
29	Gorontalo	1.284	628	48,91
30	Sulawesi Barat	2.034	899	44,20
31	Maluku	2.259	179	7,92
32	Maluku Utara	1.606	728	45,33
33	Papua Barat	1.291	1.124	87,06
34	Papua	3.521	2.594	73,67
Indonesia		283.370	173.750	61,32

Figure 4. Total Number of *Posyandu* by Province in Indonesia, 2018
Posyandu; integrated health post.
Source: (Indonesia Ministry of Health, 2019)

3.2.2. Organization and management capacity
The position of Posyandu as CHWs' working place is directly under the unit head to whom he/she supervised by the village head; see Figure 5.

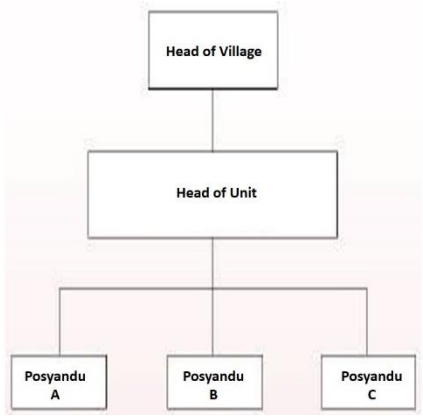

Figure 5. *Posyandu* Management
Posyandu; integrated health post.
Source: (Indonesia Ministry of Health, 2011)

The relationship and working mechanism in order to coordination function is carried out in stages between the central government and the regional government. Organizationally, the Posyandu Central Board in the regional government is responsible to the Minister of Home Affairs through the Director General of Community and Village Empowerment. While in the regions, the position of the Posyandu Central Board is functionally responsible to the governor at the province level, to the regent/mayor at the district/city level, and to the village head at the sub-district/village level. Each Posyandu is located in the village and responsible to the village head (Indonesia Ministry of Health, 2011).

In the reality, because CHWs work at Posyandu which is part of Indonesia health care system stated in the previous chapter, CHWs were given tasks and assigned by the village midwife and or the head of public health center (Puskesmas) in the district, not by the village head. Supervision remains among the weakest aspects of many CHWs programs. Effective CHWs supervisory systems are now viewed in terms of 3 overlapping general objectives:

- Quality assurance: continuous monitoring and improvement of CHW performance through measurement, feedback, and learning to ensure activities adhere to policies and procedures

- Communication and information: communicating, gathering, and sharing information related to CHWs activities, health guidelines, and planned events
- Supportive environment: coaching, problem solving, team building, and other activities that provide CHWs with emotional support (Crigler, et al., 2013).

In Indonesia, CHWs were supervised directly by the head of Posyandu to whom she/he is also a CHW (Indonesia Ministry of Health, 2012).

3.2.3. Regulatory systems

In the selection of CHWs, the criteria include able to read and write, possess social in spirit and willing to work voluntarily, knowledgeable about the customs and habits of local people, willing to commit the time required, residing in the village, friendly and sympathetic, and accepted by the local community (Indonesia Ministry of Health, 2012). In the recruitment process, CHWs were appointed by the village heads in Indonesia (Cherrington, et al., 2010). Some of CHWs were also recruited based on relationship in the family (personal observation). During recruitment process, CHWs received a week of training to carry out and ready for the Posyandu activities (Indonesia Ministry of Health, 2011). CHWs were trained by the public health center in the district (Indonesia Ministry of Health, 2012). The public health center in the district also trained CHWs for other various and new programmes (Indonesia Ministry of Health, 2012). Health trainings to CHWs sometimes were also provided by health students who did internship field program in the area (personal observation).

Basically, Posyandu is required to implement 15 programs covering 5 basic health services and 10 government-mandated basic social services through Minister of Home Affairs Regulation No. 19/2011 concerning Guidelines for Integrating Basic Social Services at Integrated Service Posts (Indonesia Ministry of Home Affairs, 2011). Thus, the existence of Posyandu becomes important in the government's efforts to achieve the SDGs target (Goals 3 and 5), especially on targets to reduce Maternal and Infant Mortality (Indonesia Ministry of Home Affairs, 2011). To implement the efforts, a general guidebook for the management of Posyandu was issued by the Indonesian MOH in collaboration with the Central Posyandu in 2011. This book contains guidelines on how Posyandu is run in Indonesia, the background for the implementation of Posyandu, Posyandu history, basic concepts, implementation, activities, and development of Posyandu (Indonesia Ministry of Health, 2011).

3.2.4. Resources needs

In Indonesia, the needs of CHWs involvement in the PMTCT program based on the low coverage of PMTCT, stigma, and discrimination in the community (Indonesia Ministry of Health and UNICEF, 2015). Also, critical shortages in the health workforce in many developing countries - specifically the number, skills and geographic distribution of health workers - pose a significant challenge to the achievement of Universal Health Coverage (UHC) and the Sustainable Development Goals (SDGs) (World Health Organization, 2019). Similarly, the number of Indonesian Civil Servants (Indonesia State Employee) was recorded at 4.1 million as of the end of 2018 (Indonesia National Civil Service Agency, 2019). Of these, 14.15% of them were health workers (Indonesia National Civil Service Agency, 2019). The Head of Indonesia National Civil Service Agency had stated the figure of health worker was very small compared to the vast territory of Indonesia (Indonesia National Civil Service Agency, 2019). Increasing attention has therefore been focused on the role of community health workers (CHWs) to expand access to essential health services, particularly in low- and middle-income countries (World Health Organization, 2019).

Committed to end HIV-AIDS by 2030, Indonesia government had involved CHW in the PMTCT program since 2015 (Indonesia Ministry of Health and UNICEF, 2015). As explained in the background chapter, CHWs work at Posyandu at village level in Indonesia. Indonesia Ministry of Health provides the Management Guidelines for the Prevention of HIV and Syphilis Transmission Programs from Mother to Child; published

by UNICEF and the Indonesia Ministry of Health in 2015 (Indonesia Ministry of Health and UNICEF, 2015). At Prong 4 (Psychological, Social, Medical and Care Support), mothers with HIV need psychosocial support so they can get along and work as usual. Medical support and care is needed to prevent complications due to a decrease in endurance. This support also needs to be given to children and their families. Providing psychological and social support to mothers with HIV and their families is quite important, considering mothers with HIV and other PLWHA face psychosocial problems, such as stigma and discrimination, depression, exclusion from the social and family environment, work, economic and childcare problems. Psychosocial support can be provided by couples and families, peer support groups, health cadres (CHW), religious and community leaders, health workers, and the government (Indonesia Ministry of Health and UNICEF, 2015). In the guidelines, factors that are motivated PMTCT of HIV counseling, belief in the efficacy of antiretroviral (ARV) attained through personal or peer experiences, and a partner who does not prevent women from seeking PMTCT care. Key barriers for PMTCT efficacy, particularly for symptomatic women, unsupportive partners who actively prevent women from seeking treatment, and women concerns about community stigma and discrimination.

3.2.5. Criteria for choosing interventions

CHWs can successfully perform a variety of services and activities, including the delivery of basic health care, health education, and promoting uptake of facility-based health care (Ahorlu, et al., 2009). As part of the community, CHWs would be much easier to deliver health programs because they are closer to the community compare to the public health officials (Andriani, et al., 2016). Role of community, community leaders and health service officers in the region, support of community, and government leaders are crucial and determines the success and continuity of Posyandu activities (Budi, 2011). Stakeholders who have a primary role in outreach programs and assisting pregnant women in preventing HIV-AIDS transmission from mother to baby in rural areas are midwives including CHWs (Kurniawan, et al., 2018). Based on these, the intervention of CHWs in the PMTCT program was chosen (Indonesia Ministry of Health and UNICEF, 2015).

3.2.6. Feasibility analysis

Indonesia has one of the regions' highest infant and child mortality rate; providing professional health care to all or even most citizens is not economically or logistically feasible (Cherrington, et al., 2010). Therefore, as many as one million volunteer CHWs are appointed by village heads to provide basic maternal and child health care (Cherrington, et al., 2010). Findings indicated the policy initiative is feasible to health system (Gilson, 2012). A strong basis within the health system for task-sharing in maternal health rests on health leadership and governance that open an opportunity for training and supervision, financing, and inter-sector collaboration (KPMG International, 2016). Support from good infrastructure accessibility and resources in CHWs region provide potential for a continuity of care (Institute of Medicine, 2015). Nevertheless, feasibility is challenged by gaps between policy and practices, inadequate support system in technologies and information system, assigning the workforce and strategies to be applied, and the lack of practical guidelines to guide the implementation (Surjaningrum, et al., 2018).

3.3. Implementation: interventions

On the implementation stage using the adapted framework, this study explored findings on the CHW intervention in the PMTCT program in Indonesia by looking at education, regulatory, financial incentives, and management and social support factors.

3.3.1. Education

Capacity building is an essential aspect for health workers in doing their job specifically in advocacy public health in the community. CHW received training as part of the intervention (Crigler , et al., 2013). They have received limited training focused on

activities they need to carry out in the context of the intervention(s) they implement; and they have received no formal professional or paraprofessional certificate or tertiary education degree (Lewin, et al., 2010). The trainings took place at District Health Office and or Village Head Office (personal observation). Training of CHWs lasts less than one week, meaning that only a few technical skills can be learned during that short duration of training. To improve the competencies of CHWs conducted PMTCT program, other stakeholders involved as donors such private company under Corporate Social Responsibility (CSR) program (Pertamina, 2018).

A study in Banjar-Kalimantan Selatan, Indonesia, showed that CHWs had insufficient knowledge and never joined any training, and also illiterate. The facilities and infrastructure in Posyandu were minimal. Posyandu activity was also low. Unscheduled and unstable of incentive numbers and awards received by CHWs was also a problem. The level of community participation depends on the activeness of CHWs in reminding the schedule of integrated health post activities (Akbar, et al., 2015).

A study in Ciherang-Jawa Barat, Indonesia, showed Posyandu is one of the community participation approach in health sector that is managed by cadres, with the main problem arises is the declining number of visits of mothers of infants and toddlers. The aims of this research were to analyze the level of performance of posyandu cadres, and to analyze the factors that influence performance. Research conducted in Ciherang village with 30 samples that was selected using random sampling. Most of the cadres including productive age, junior secondary education, medium families size, and has been married to a third have children under five. The average of job length was 9 years old, had attended training related to posyandu, CHW motivation is the desire to help the community. Average cadres incentives was IDR 20,000 per person per month with the support of family and community leaders. The result showed that most of cadres' performance can be categorized high. The higher the incentives and the more participation of cadres in training at least once influenced significantly for the improving of cadres' performance (Simanjuntak, 2012). Nine women aged 25 to 33 years old were selected as respondents for qualitative study. Majority of them had contracted HIV from their spouse, who formerly injected drugs. All of them perceived low or no risk factor for HIV. HIV positive women valued high acceptance of HIV testing in primary health care with conditions; ensure confidentiality and quality of counselling. Lack of information about PMTCT and unintended pregnancies presumably correlated with late initiation of ARV prophylaxis among HIV infected pregnant women. Despite almost all of the respondents were expressing no intention to have more children, there was unmet need for contraception. Stigma and discrimination remain exist in various forms; fear of being isolated/separated from friends and family, sub-optimal treatment in hospitals by healthcare workers. Findings from this study provide a basis for establishing PMTCT program responsive to the need and demand of women as subject of intervention. Comprehensive interventions need to be integrated into existing health systems and utilize resources at the local disposal. A successful and sustainable PMTCT of HIV program requires a close collaboration with stake holder e.g. governmental institutions, non-governmental organizations, and civil society representatives (Oktavia, et al., 2012).

Trainings with HIV-AIDS and PMTCT contents were conducted by members of the health workers team. In addition to specific knowledge about HIV-AIDS and PMTCT including pregnancy and maternal and child health, the training included communication and counseling skills, monitoring and evaluation of health interventions, data collection, and management. A study by Angkasa & Heryana in Jakarta, Indonesia showed that CHWs involvement on delivering the important of nutritional support in blocking the rapid development of HIV is very beneficial for those with HIV-AIDS. However, most CHWs did not have enough knowledge about the nutritional support. The result showed that there is no significant different between the knowledge score of the CHW at pre and post test. However, there is a tendency that improvement of knowledge scores among CHW.

Further intensive training is needed to enable CHWs to give good intervention (Angkasa & Heryana, 2018).

3.3.2. Regulatory

The Indonesian government has issued several regulations and policies related to CHWs activities. In 1984, a Joint Instruction was issued between the Indonesia Minister of Health, the Head of National Population and Family Planning Board, and the Indonesia Minister of Home Affairs which stated all integrated various activities in the community should be formed into a single body called the Integrated Service Post (Posyandu). The joint instruction was carried out in order to accelerate the reduction in maternal and infant mortality rates at that time (Indonesia Ministry of Health, 2011).

At present, several regulations and policies had been issued by Indonesia Ministry of Health included Health Strategic Plan 2015-2019 (Indonesia Ministry of Health, 2015), General Guidelines for Posyandu Management (Indonesia Ministry of Health, 2011), Community Health Workers Training Module (Indonesia Ministry of Health, 2012), Let's Visit to Posyandu Every Month Guidelines (Indonesia Ministry of Health, 2012), and Prevention of HIV and Syphilis on Mother-to-Child-Transmission Guidelines where CHWs are involved in the PMTCT program in the 4th Pronge (Indonesia Ministry of Health and UNICEF, 2015).

In Indonesia, decentralisation rules and regulations are not clear, the central government fails to provide sufficient detail on functional and operational responsibilities, which has resulted in confusion at the sub-national level. In order to control HIV transmission from mother to child, integration needs to be done on PMTCT services to antenatal services. Each level of basic health care facilities and reference are as stated in the Regulations of Indonesia Minister of Health No. 51/2013 concerning prevention of mother to child transmission of HIV (Indonesia Ministry of Health and UNICEF, 2015). Also, the Puskesmas is one of the network services for HIV treatment in a regency/city in accordance with the community-based services framework based on the 6 pillars below:

1. Coordination and partnership with all stakeholders on every line.
2. Coordination with the community including PLWHA and families.
3. Integrated services and decentralized according to local conditions.
4. Comprehensive HIV including PMTCT service package.
5. Referral systems and networks.
6. Guaranteed service access.

(Indonesia Ministry of Health, 2016). Puskesmas provides ARV, trains and involves CHW to supervise and assist ARV (MOH, 2017); see Figure 6.

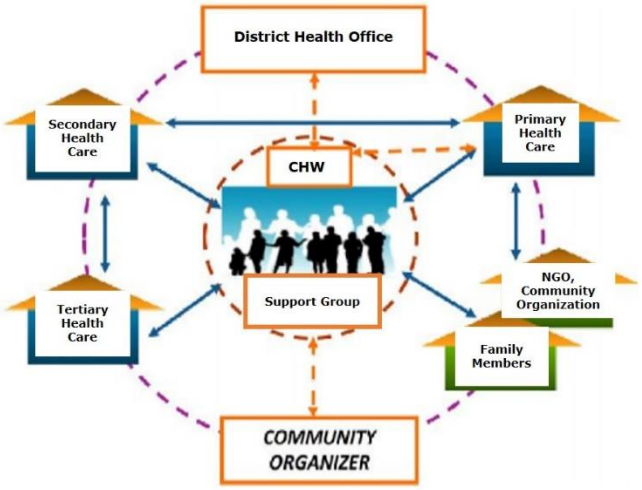

Figure 6. Comprehensive Sustainable HIV-STI Service Workflow in Indonesia
HIV; Human Immunodeficiency Virus, STI; Sexually Transmitted Infection,
CHW; Community Health Workers, NGO; Non Government Organization
Source: (Indonesia Ministry of Health, 2016)

3.3.3. Financial incentives

For the incentives' allocation, as stated above, CHW's operational cost and incentives are under the decision of the village head and the budget is part of '*Dana Desa'* (Village Budget). Therefore, CHW's operational cost and incentives are on the decision of the village head. For financial incentive for their work, the negotiation would have never discussed because CHWs had understood on the CHW voluntary job. CHWs would have liked to have been paid, but barring that, would at least have appreciated more recognition by community residents (World Health Organization, 2012) many of whom never thanked or even acknowledged them for their work (Cherrington, et al., 2010). But another research showed that incentives could cause friction for the interface role of CHWs between communities and the health sector (Ormel, et al., 2019). There is almost no finance requirement after it gets started. Any money is a bonus and used to do what the committee decides on. Financing for the program serves to fund operational activities, nutritional foods for children under 5, kader transportation costs, start-up capital for posyandu commercial activities, and costs for transport for patients requiring referral. The program is financed through a variety of sources, including:

- Community members, attendee donations, community health savings, donations from community members, and donations from social or religious groups;
- Private commercial sources, such as some companies that adopt a posyandu and provide sponsorship;
- Commercial activities undertaken by the posyandu itself (such as selling herbal medicine); and
- Government sources (mainly for the early stage of posyandu development, particularly for establishing facilities and infrastructure) (Indonesia Ministry of Health, 2011).

There are shifts of financial burden from central to regional levels, with regional government for account most routine spending. However, local government still continues in regard to the central government. In this case, Indonesia Ministry of Health acts as a key supplier of financial resources for personnel, health research, drugs and vaccines, not for CHWs and Posyandu. In the context of the budget, although Posyandu is used by many government agencies to implement its programs but is not accompanied by an adequate budget for the provision of Posyandu services and CHWs incentives. Under The Minister of Home Affairs Regulation No.19/2011 concerning Guidelines for Integrating Basic Social Services at Posyandu, incentives for CHW are taken from village funds, separate operational funds from the Posyandu. For Posyandu in district level, operational funds were budgeted through the regional government revenue

and expenditure budget. Whereas Posyandu in village, the budget is allocated through the village revenue and expenditure budget (Indonesia Ministry of Home Affairs, 2011).

Variables related to CHWs performance were providing operational support, charter, transport, and training (Wirapuspita, 2013)**.** Because CHWs are volunteer community health workers who come from the community, the closeness of the CHWs to the community increasing commitment in carrying out the work as volunteer in the field of health. They have a unique challenge in providing health services because they tend to be unpaid (Bidayati, 2017). Limited incentive, material and non-material supports frequently become their performances constraints (Iswarawanti, 2010). Looking at CHWs in India, incentives are given in a form small loans to establish revolving funds, which they use to make some money by selling health products at a small markup (Perry, et al., 2013). Another example from a study in Yogyakarta, Indonesia, where health sector reforms with elements of health insurance system was introduced. The Yogyakarta provincial government used donor funds to secure technical assistance and conduct assessment, trials, benchmarking, training and workshop for health workers. The provincial government also established a board of trustees and fund holder institutions to run the health care services for local residents. Centrally funded health scheme occurred alongside a proliferation of policy making at sub-national level in the context of decentralization (Aspinall, 2014).

3.3.4. Management and social support

The Posyandu and its CHWs serve as a community empowerment unit on health-related issues that is supervised institutionally by a village committee. Medical and technical supervision is provided by the clinical staff at the Puskesmas, where a physician, 5–8 nurses, and several midwives work (Indonesia Ministry of Health, 2011). The selection of the supervising village committee and CHW is based on consensus reached within a village-level meeting conducted by staff from the Puskesmas and attended by village leaders, other respected people in the village, and selected members of committee. (Indonesia Ministry of Health, 2011). A full-time CHW intervention coordinator liaised with the Puskesmas at village level or district level, with a position of midwife. In addition, the midwife organized monthly meetings with the CHWs. At these meetings, CHWs shared and discussed obstacles they were facing in performing their work and possible approaches to overcome them. In addition, the coordinator shared with the intervention team the latest data on the number of pregnant women visited in each ward. She/he also coordinated supportive supervision and a mentorship program for the CHWs. CHWs who work in their area ensured that pregnant and breastfeeding women living with HIV who missed Posyandu appointments received CHWs visits, and served as a conduit between the CHW and Puskesmas staff (Indonesia Ministry of Health, 2011).

3.4. Outputs

3.4.1. Attractiveness: Intentions to come, stay, and leave

The satisfied employees are more productive than those who are dissatisfied. It is also believed that satisfied employees are more committed to their job than their dissatisfied counterparts (Robbins & Judge, 2011). A study in Kuningan-Jawa Barat, Indonesia, showed that CHWs motivation was important as the drive for the success of Posyandu (Djuhaeni, et al., 2010). As a consequence of Regulation No.2/2019 from Indonesia Ministry of Health, CHWs incentives were under the decision of head village (Indonesia Ministry of Health, 2019).

3.4.2. Engagement

There is a high cultural value placed on doing something for one's neighbors, so volunteering as a CHW is highly esteemed but there is no formal bond to become a CHW in Indonesia because of voluntary from the community. A formal letter can be issued by the village/district head stated one as CHWs in the area. CHWs can come and leave at any time (personal observation). It also appears that appreciation, self-actualization,

achievement, and responsibility have a positive and meaningful contribution in shaping internal motivation. Likewise social and environmental relations can form external motivation except incentives (Djuhaeni, et al., 2010). In Indonesia, CHWs provide voluntary service without financial compensation. Motivation was mentioned negatively influenced by incentive-related "expectation gaps", including lower than expected financial incentives, later than expected payments, fewer than expected material incentives and job enablers, and unequally distributed incentives across groups of CHWs (Ormel, et al., 2019). However, CHWs in Indonesia may receive informal types of compensation, such as free medical treatment from higher levels in the health system (Perry, et al., 2013). Incentives influence motivation in a similar and sometimes different way across contexts. The mode of CHW engagement (employed vs. volunteering) influenced how various forms of incentives affect each other as well as motivation (Ormel, et al., 2019). In Indonesia, formal and paid CHWs are not available.

One of the most important component of the health system in Indonesia is community empowerment, especially Posyandu, which depends on their CHWs and the community. It was hypothetically assumed that motivation will increase the participation for both CHWs and community in the Posyandu. A study already conducted in Kuningan-Jawa Barat, Indonesia to analyze the effect of motivation and also determine which motivation factors that had the most influence towards participation. The results showed that motivation were actually had influence towards participations for CHWs and community in Posyandu. However, the effect varies between groups. On active CHWs, external motivation had more influence compared to internal motivation. The exact opposite happened in inactive CHWs (internal more than external) and community. It can be concluded that CHW motivation is important as the drive for the success of Posyandu.

3.4.3. Deployment: Effective contracting and posting
CHWs experience specific challenges while carrying out their duties, such as conducting emotionally- and physically-demanding tasks with often inadequate training, supervision and compensation. CHWs have also been poorly integrated into health systems, which not only impacts quality of care, but can hinder their prospects for promotion and lead to CHW disempowerment. As we argue, these challenges can be addressed if a set of ethical principles is prioritized, which specifically entail the principles of respect for persons, justice, beneficence, proportionality and cultural humility (Mundeva, et al., 2018).

3.4.4. Retention: Duration in service and Job satisfaction
High drop-out rates among CHW have been observed in Indonesia. CHW would have liked to have been paid, but barring that, would at least have appreciated more recognition by community residents, many of whom never thanked or even acknowledged them for their work (Cherrington, et al., 2010). The success of the Posyandu implementation is closely related to the active role of CHW and the community. The Ministry of Health awarded "KADER LESTARI" (Lifetime achievement CHW) award to CHWs who have devoted themselves for being Posyandu cadres for more than 10 (ten) years in service. The award was given in the form of pin pinning, giving placards, and award certificates (Indonesia Ministry of Health, 2013). There is a significant association between experience and the activeness of CHWs. CHWs who have experience of > 5 years tend to be more activeness of CHW (Bidayati, 2017).
The performance of CHWs is crucial to the quality of health of pregnant women and children under five years of age. The excellent work of CHWs is influenced by commitment and motivation in doing the work. The attention of the public and the government towards the work of cadres in providing health services, can increase the commitment and motivation of the cadres. Research related to commitment and motivation to social workers such as CHWs can be developed by revealing in more detail what can improve their performance. Educational background, age and year of services as cadres, also affect performance (Bidayati, 2017).

A research done by Simanjuntak in Ciherang Village-West Java, Indonesia showed that most of CHW's job satisfaction can be categorized high, despite the visit of mother and toddlers tended to decline. It means that the decline was more due to the factor of the target or the mothers themselves, not the factor of Posyandu as organizers. The higher the incentives received by the CHWs and the more participation of CHWs in training influenced significantly for the improving of CHW's job satisfaction. In term of the strategies to increase the job satisfaction, in general, all the items associated with the work of CHWs should be retained or categorized low priority, in other words there is no necessary to increase the job satisfaction of CHWs (Simanjuntak, 2012).

3.5. Outcomes

3.5.1. Workforce performance: Availability, Competence, Productivity, Responsiveness

Availability

To eliminate HIV infection including Mother-To-Child-Transmission, Indonesia Ministry of Health disseminated regulation of health. In the Regulation on Chapter V about Resources, stated Article 15 in the context of Elimination of Transmission, support is required human resources, pharmaceutical preparations and medical devices, and funding. In the Article 16, human resources as referred to health workers who have competence and authority in accordance with the provisions of the legislation. In addition to health workers as referred, the implementation of elimination transmission of HIV can involve the community (Indonesia Ministry of Health, 2016). Several provinces and cities have done to include their CHWs participation in accordance to PMTCT program.

Competence

Writing measurable competencies and linking the competencies to a workforce framework are significant advances for CHWs' development. CHWs played a prominent role as the gatekeepers of health care in the rural community. In supporting hypertension management, one study showed that CHWs served clients by facilitating blood pressure checks and physical exercise and providing health education (Rahmawati & Bajorek, 2015). Clients reported various benefits, such as a healthier feeling overall, peer support, and access to affordable health care (Rahmawati & Bajorek, 2015). Clients felt that such program could do more to provide routine blood pressure screening and improve the process of referral to other health care (Rahmawati & Bajorek, 2015). CHWs are trained by midwife as coordinator at village/district level about PMTCT and HIV-AIDS knowledge. Most CHWs have sufficient knowledge about HIV-AIDS transmission from mother to child. Sufficient knowledge can be obtained from various sources such as: mass media, books, and information obtained from health workers (Elba, et al., 2018).

Productivity

Each Posyandu serves approximately 100 under-5 children or about 700 persons in the community (Perry, et al., 2013). The service by Posyandu followed the international policy from the World Health Organization (WHO) which recommends frequent antenatal care (ANC) visits spaced at regular intervals during pregnancy (World Health Organization, 2016).

Responsiveness

In the spirit of mutual cooperation of Indonesian people especially in rural areas, CHWs play important role in the integration of basic social services (Heryana, 2019). CHWs live and stay close in the community than other health workers at public health center in the district. CHWs were found responsive of things happened in their community which sometime the public health center being informed and updated from (Heryana, 2019).

3.5.2. Accessibility: Coverage of interventions

Increased access to PMTCT programs and services is further enhanced to control transmission HIV from mother to child, along with pregnant women living with HIV. In 2013, Indonesia Ministry of Health issued a Minister of Health Circular Letter concerning PMTCT Services accompanied by the National Action Plan 2013-2017. With the publication of the circular, PMTCT activities were integrated into the MCH services, family

planning, and youth counseling (Indonesia Ministry of Health and UNICEF, 2015). In the Letter, CHW can give their role on Pronge 4 of PMTCT on psychological, social, medical and care support to the mothers with HIV. The mothers with HIV need psychosocial support so they can get along and work for a living as usual. Medical support and care is needed to prevent complications due to a decrease in endurance. Such support also needs to be given to children and his family. In providing psychological and social support to mothers with HIV and their families, this support is quite important considering mothers with HIV and other PLWHA face psychosocial problems, such as stigma and discrimination, depression, exclusion from the social and family environment, work problems, economy and childcare. Psychosocial support can be given by couples and families, peer support groups, health cadres, religious and community leaders, health workers and government. The form of psychosocial support can be of four types, namely:

- Mental support, in the form of empathy and compassion;
- Award support, in the form of positive attitudes and support;
- Instrumental support, in the form of support for the family economy;
- Information support, in the form of all information related to HIV-AIDS and all supporting services, including information about contact of health workers/NGOs/peer support groups.

3.5.3. Productivity: Service utilization

Home visits by CHWs can be useful in identifying pregnant and breastfeeding women living with HIV who are not and do not want to check her health status. By doing so, home visits considered a way that helps in improve prenatal and antenatal care (Sando, et al., 2014). A study from Pasuruan District, East Java, Indonesia, showed that the result was not in line with the facts on the ground that not all of foster CHWs visit home to every foster child for monitoring pregnant and breastfeeding women and make sure the women check their pregnancy and health status to the health workers in the area (Pangestu, et al., 2017). The trend for increased utilization at the Puskesmas will continue, particularly since a national health insurance scheme went into effect in early 2014 and over the next 5 years will cover everyone in the country. However, the need for Posyandu will also continue—for growth monitoring of children, for attention to mental health issues, for chronic disease management, and for many other services that can be effectively provided at that level.

In the other hand, CHWs are burdened with administrative work in the form of making reports in addition to the main task of providing services for babies and pregnant women. During this recapitulation of data is still done manually so that human error often occurs in the process. In addition, Posyandu service data records are still in the form of paper so that they are prone to damage or loss. An electronic based Posyandu management information system needs to be made that can automatically recapitulate data so as to reduce the occurrence of human errors and can display baby development data electronically (Santoso, 2018).

3.5.4. Responsiveness: Client satisfaction

Pregnant and breastfeeding women living with HIV with support from CHWs in the PMTCT program had feeling being supported (Kurniati, et al., 2015). Positive attitude and HIV-AIDS knowledge from CHWs in the PMTCT program were appreciated by the clients.

3.6. Impact

3.6.1. Improved performance health service delivery

The Indonesia Ministry of Health continued to implement PMTCT program with the impact to enhance HIV testing at Posyandu at village level and supports from CHWs (Indonesia Ministry of Health and UNICEF, 2015). A study in Central, Indonesia showed it needed designing the explicit rules in the region to the people who living with HIV-AIDS who nondisclosure with their partner, health provider and deliberate to

transmission her virus to the other. Counselling when voluntary counselling and testing (VCT) also explained about PMTCT focus on dealing with social factors, and behavioural beliefs that impact on disclosure of HIV status. Management should address health system factors that result in non-disclosure of HIV status (Anindita, et al., 2013).

3.6.2. Improved PMTCT uptake, adherence, and retention

PMTCT coverage remains low and slowly progress in Indonesia (UNAIDS, 2018). On the World AIDS Day 2018, the Minister of Health has stated for mandatory HIV testing to all Indonesian pregnant women during (Indonesia Ministry of Health, 2018).

CHAPTER 4.
DISCUSSION

This chapter discusses the interactions between factors in the previous chapter and by giving examples when necessary.

In labor market context, Indonesia is facing shortage of professional health workers. Meanwhile, Indonesia had launched integrated PMTCT program involving CHWs in the community. As a result, several tasks were added and done by CHWs in PMTCT related program. Due to the shortage of professional health workers, it seems that CHWs are utilized by the government with more workloads including PBFW living with HIV assistance in the PMTCT programs. CHWs are involved in the PMTCT program considering the spread of HIV-AIDS tends to increase. The transmission is not only among sex workers, injecting drug users, unprotected sex, but also among pregnant women. HIV-AIDS prevention approach did not directly involved community participation resulting in a prolonged stigma towards PLWHA in Indonesia. With the number of CHW and Posyandu that are currently available in Indonesia, it is a great opportunity to be maximally empowered in the PMTCT program.

CHWs play important role what community needs. The community-based approach has a strategic role in efforts to combat HIV-AIDS. Experience shows that promotive-preventive efforts tend to be mostly carried out by the community. Community participation is a potential aspect to support HIV-AIDS prevention. Therefore, it is very important that the government take action to improve and participate in public awareness. Actions can be taken in the form of disseminating information, creating programs related to HIV-AIDS prevention, increasing capacity for non-governmental organizations to provide appropriate information about HIV-AIDS in residents. Such activities need to be carried out to prevent new infections in the wider community and reduce stigma and discrimination on PLWHA in Indonesia.

WHO recommends providing paid CHWs with a written agreement specifying role and responsibilities, working conditions, remuneration and workers' right (World Health Organization, 2018). As stated in the previous chapter, CHWs incentives were under the decision of head village's decision. Consequently, it made the incentive vary or even unallocated in different regions under the pretext that CHWs are volunteer work. In the previous chapter it was also known that the incentive component could be one of the motivations of CHWs to improve their performance. Most of CHW tendency remain in their work as volunteer CHW, with or without incentives. Even if someone resigns, it is due to being busy working or having other activities. Limited incentive, material, and non-material supports frequently become their performances constraints (Iswarawanti, 2010). Djuhaeni et al. in their research stated many factors affect the condition of CHW to be involved in the whole Posyandu activities such as CHW knowledge, Posyandu activity information, and CHW motivation. Motivation is the most dominant factor, both comes from within themselves or originating from their environment. The results showed that motivation were actually had influence towards participations for CHW in posyandu (Djuhaeni, et al., 2010)

Community-based health services are more specific to the activities of peer support groups or PLWHA assistants proven to be effective in improving the quality of pregnant and lactating women with HIV. Apart from various problems in interpreting assistance to pregnant and lactating women with HIV, it sometimes makes dependence on them accessing health services (Indonesia Ministry of Health and UNICEF, 2015). To make social changes requires active involvement of community activists who can mobilize community. It is stated that the role of CHWs are bridging the needs of the community with health service facilities, strengthening knowledge and capacity for CHWs to empower communities in the surrounding environment especially marginalized groups,

and organizing CHW especially to marginalized group to fight for the interests of the local community (Indonesia Ministry of Health, 2012). Low PMTCT uptake, adherence, and retention among pregnant and breastfeeding women in Indonesia contributed by social factors in the community. The need to support more women to adhere to ART during breastfeeding is a growing priority for PMTCT program. This is because it is common for women to gradually stop taking ARV drugs after giving birth, which not only compromises their health but also puts their infant at an increased risk of acquiring HIV during breastfeeding. Support from CHW as the 4th Pronge in PMTCT program is expected to improve uptake, adherence, and retention of ARV. The limitation was limited number and quality of studies included. Study literatures were quantitative, qualitative, and cross sectional study with various numbers of samples in certain places/regions of Indonesia. Only several of my studies provided results on CHW and PMTCT services. However, my literature review raised some issue for further research especially on potential role of CHWs in community-based approach for determinants of uptake, adherence, and retention in PMTCT of HIV at primary health care level in Indonesia.

Reflections on Conceptual Framework

The conceptual framework used put forward the factors looking at the potential role of CHWs in the PMTCT program not as a single entity but within other conditions as influenced by situation analysis, interventions, attractiveness, engagement, deployment, retention, workforce performance, accessibility, productivity, and responsiveness elements. Hence, it proved to be a useful framework for the research study. No considerations of the framework were found to be irrelevant, and no new factors have identified that merit to add.

CHAPTER 5.
CONCLUSION AND RECOMMENDATION

5.1. Conclusion

Objective one: factors influencing the role of CHWs in PMTCT program in Indonesia

The adapted framework used discussed factors influencing the role of CHWs in PMTCT program in Indonesia. The findings indicate several factors influencing their performance such as workload burdened CHWs, uncertainty of incentives and other operational cost, limited resources in education and training, and several actors (stake holders) in the supervision and task assignments. Task-shifting from formal health workers to voluntary CHWs was used concerning lack of formal health workers even though Posyandu has become the front guard in monitoring and improving the nutritional status and health of mothers and children in the community since launched in 1984. Posyandu program practices and the role of CHWs, especially in the PMTCT program do not get maximum support from the government regarding the accuracy of policies, programs, and budgets. The role of CHWs is very influential because CHWs have better understanding of physical and psychological conditions with frequent interaction will greatly affect the sense of trust. HIV-positive mothers can accept the presence of CHWs as well as education and counseling provided. CHWs can give support to HIV-positive mothers utilizing PMTCT services.

Objective two: current policies and programmes in relation to CHWs involvement in the PMTCT program in Indonesia

Policies on CHWs operational activities related are ambiguous. The policy and program are maintained to present. It can be seen from many Posyandu programs that have occurred in Indonesia. Even though this integrated service post has an essential role as the spearhead of community health and basic services to achieve the targets of the Sustainable Development Goals (SDGs) which are the third and fifth goals, especially targeting the reduction of mother and baby mortality. The support from the government was very minimal. CHWs, the majority of whom are female housewives, is the implementing staff in the field. They, mostly homemakers (housewives), are required to run government programs with a limited budget, capacity, facility, and infrastructure. However, in this condition, the government also utilized the concept of community-based self-help and the spirit of volunteerism which is actually to shift the government's responsibility in fulfilling their citizens' fundamental rights related to the field of maternal and child health, especially in the PMTCT program. Because this does not get maximum support, a crucial problem arises. CHWs are burdened with the demands to fill in documents and reports for government data requirements that are very numerous and complicated. Government agencies use the results of reports and data collection from CHWs for their interests. However, unfortunately, no government agency is genuinely responsible for Posyandu institutions. The existence of overlapping policies and weak coordination between government institutions and the intervention program then made it difficult for CHWs to implement it.

5.2. Recommendation

The recommendations are based on the findings, discussion, and conclusion from this study.

It should be not forgotten that HIV/AIDS is not just a health problem, because the spread of an infection disease is highly correlated with socioeconomic, environmental and ecological factors such as population growth, environmental and land-use changes, changing human behaviours and political reorganizations (World Health Organization, 2019).

At policy level

1. Indonesia Ministry of Health should issue and declare a clear and explicitly regulation and guidelines including financial support on the role of CHWs and involvement in the PMTCT program. Financial and budget for the intervention should be more explicitly clear and transparent.
2. Implementation and technical guidelines are considered the most important stage and should be applicable. The purpose of the policy is achievable with involvement of other related multi-sector stakeholders such as religious leaders, educational institutions, youth groups, media, etc.

At intervention level

1. Providers, policy makers, programmers, and communities must continue to advocate strongly for PMTCT, a platform that saves the lives of both mother and infant while preventing HIV and promoting family health.
2. It should also have regular dialogues with law enforcement authorities to help them understand PMTCT.
3. Appropriate and directed interventions on involvement in Posyandu increase CHWs activities and have a large leverage to the achievement of health development programs, especially in the PMTCT program.
4. To ensure CHWs supporting pregnant and breastfeeding women and children living with HIV inclusivity, representatives needed from the vulnerable group. It should be actively involved especially in tailoring interventions regarding PMTCT uptake, adherence, and intervention.
5. Monitoring, evaluation, and supervisory management system based on CHWs monthly report.
6. Develop CHWs capacity building in PMTCT in the region. Therefore, to support the development of Posyandu, it is necessary to take steps to educate the community among others by efforts to increase the capacity of CHWs through training.

Research

1. Indonesia Ministry of Health should undertake further research on CHWs intervention in the PMTCT program related. The research should explore obstacle and barriers, including opportunities and best practices in the intervention program.

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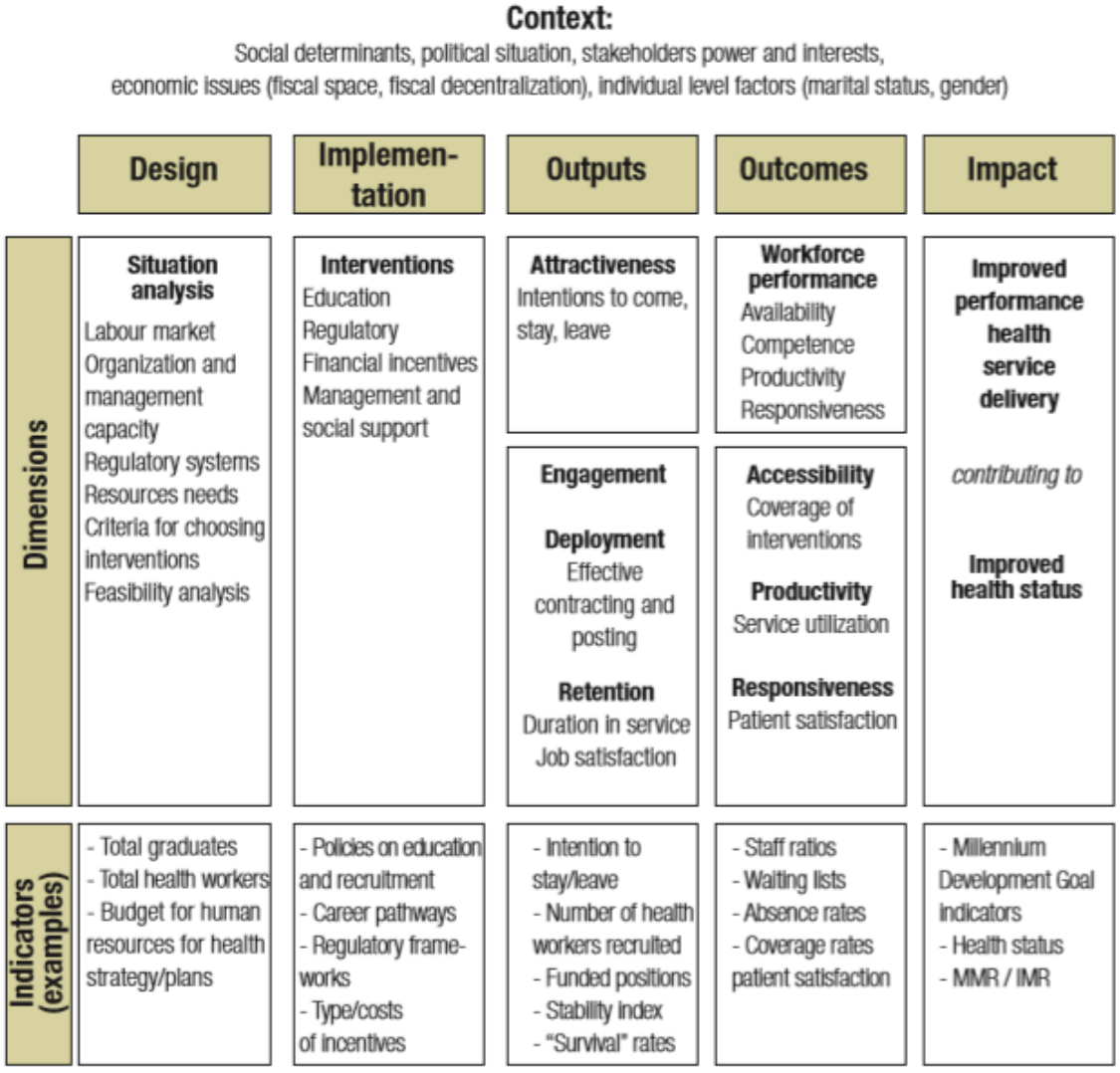
Annex 1. The conceptual framework for measuring efforts to increase access to health workers in underserved areas



IMR, infant mortality rate; MMR, maternal mortality rate.

Source: (Huicho , et al., 2010).

Annex 2. Total Number of *Posyandu* by Province in Indonesia, 2018 (original in Indonesian language)

JUMLAH POSYANDU AKTIF MENURUT PROVINSI
TAHUN 2018

No	Provinsi	Total Posyandu	Posyandu Aktif	Persentase Posyandu Aktif
(1)	(2)	(3)	(4)	(5)
1	Aceh	7.229	1.772	24,51
2	Sumatera Utara	15.475	7.933	51,26
3	Sumatera Barat	7.564	6.043	79,89
4	Riau	5.508	2.985	54,19
5	Jambi	3.471	1.760	50,71
6	Sumatera Selatan	6.550	4.347	66,37
7	Bengkulu	2.010	1.050	52,24
8	Lampung	423	297	70,21
9	Kep. Bangka Belitung	1.095	707	64,57
10	Kepulauan Riau	1.405	738	52,53
11	DKI Jakarta	4.382	4.202	95,89
12	Jawa Barat	50.894	29.048	57,08
13	Jawa Tengah	46.701	33.609	71,97
14	DI Yogyakarta	5.723	4.286	74,89
15	Jawa Timur	46.746	36.451	77,98
16	Banten	9.309	4.301	46,20
17	Bali	4.689	2.875	61.31
18	Nusa Tenggara Barat	7.226	3.817	52,82
19	Nusa Tenggara Timur	10.130	5.144	50,78
20	Kalimantan Barat	4.946	1.509	30,51
21	Kalimantan Tengah	2.587	503	19,44
22	Kalimantan Selatan	3.891	1.178	30,27
23	Kalimantan Timur	4.348	1.859	42,76
24	Kalimantan Utara	687	374	54,44
25	Sulawesi Utara	2.219	2.200	99,14
26	Sulawesi Tengah	3.288	1.182	35,95
27	Sulawesi Selatan	9.697	5.988	61,75
28	Sulawesi Tenggara	3.182	1.440	45,25
29	Gorontalo	1.284	628	48,91
30	Sulawesi Barat	2.034	899	44,20
31	Maluku	2.259	179	7,92
32	Maluku Utara	1.606	728	45,33
33	Papua Barat	1.291	1.124	87,06
34	Papua	3.521	2.594	73,67
Indonesia		**283.370**	**173.750**	**61,32**

Sumber: Direktorat Jenderal Kesehatan Masyarakat, Kemenkes RI, 2019 per Januari 2019

Posyandu; integrated health post
Source: (Indonesia Ministry of Health, 2019)

Annex 3. *Posyandu* Management (original in Indonesian language)

Posyandu; integrated health post
Source: (Indonesia Ministry of Health, 2011)

Annex 4. Comprehensive Sustainable HIV-STI Service Workflow in Indonesia (original in Indonesian language)

Source: (Indonesia Ministry of Health, 2016)