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## Barriers of PMTCT (Prevention Mother to Child Transmission) Program: Systematic Review



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### Abstract

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HIV infection during pregnancy is a serious problem that requires special attention because the number of case increasing every year. According to UNAIDS data, more than 36.9 million people were living with HIV on 2017. An increase of 1.8 million new cases and 940,000 deaths occurs in the same year. In Indonesia especially, there were about 630,000 HIV cases on 2017 and nearly 49,000 new cases reported. This number consists of cases of vertical transmission from mother to child during pregnancy. The government has implemented PMTCT (Prevention Mother to Child Transmission) program as a solution to reduce the number of HIV cases. Nevertheless this program has not been running well due to several barriers regarding to its implementation. This study aimed to provide an understanding of various barriers to PMTCT program implementation. A systematic review approach by PRISMA design was used to study literatures from databases. Stigma or discrimination from community and health care, experienced by HIV patients, was major barrier that impede PMTCT program. In addition, lack of support from partner or family, depression, economic factors, stigma from health workers, and health workers' income-workload discrepancy were also significantly affected the implementation. Contrary, the active role of health workers to provide counseling and education about HIV/AIDS among community as well as to client's families was a success key of PMTCT program.

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## INTRODUCTION

Human Immunodeficiency Virus (HIV) is a kind of Ribonucleic Acid (RNA) virus which can specifically attack human immunity, causes Acquired Immunodeficiency Syndrome (AIDS). HIV during pregnancy is a serious problem that requires special attention because the numbers of cases increase every year resulting in maternal and neonatal mortality (Nimasdan Tri, 2019).

UNAIDS (United Nation Program on HIV and AIDS) stated that in 2017, more than 36.9 million people were living with HIV consisted of 35.1 million adults and 1.8 million children, 1.8 million new HIV cases and 940,000 deaths occurred as its effect. Indonesia contributed about 630,000 HIV cases in 2017 consisted of 49,000 new cases and 39,000 death cases (UNAIDS, 2018).

HIV / AIDS contributed to mortality rates at reproductive age in several developing countries. Data in Indonesia showed that there are 220,000 women aged  $\geq 15$  years and 13,000 children, were living with HIV (UNAIDS, 2017). The number of HIV cases will continue to increase along with the increasing of prevalence of women with HIV infection at reproductive age who have possibility to give birth to children with HIV as well. HIV infection occurred on approximately 5-10% pregnancy, 10-20% through labor, 10-15% during breastfeed period. The risk of vertical transmission increased by 15-45% when mother's infection left untreated during the period of fetal growth (Kementerian Kesehatan RI, 2015).

Mother to child HIV transmission which was not quickly treated caused *pneumocystis carinii pneumonia* (PCP), which is opportunistic infection that often found in HIV positive children. This infection generally occurred at first 3 to 6 months of life, then generate to Mycobacterium avium complex (MAC) at the age of 5. This infection generated another disease, such as candidiasis esofagus, recurrent bacterial infections, and tuberculosis (Lindegren, et.al, 2000).

Opportunistic infection prevention consisted of primary and secondary prevention. Primary prevention is preventing infection, while secondary prevention is administering drugs after infection. This prevention can be stopped if there was an increase in CD4+ more than 200 / mL for 3 months (Djauzi and Djoerban, 2002).

Indonesian government has implemented PMTCT program as the best solution to prevent

mother to child HIV transmission. PMTCT expected to reduce the case of HIV positive children, and HIV/AIDS transmission among reproductive women as well as cases of HIV positive pregnancy (WHO, 2009). The targets of the PMTCT program are adolescents, childbearing aged women, health cadres, and health workers. Health education could be given to youth group and childbearing aged women to increase their knowledge and awareness of HIV and any other STIs (Sexually Transmitted Infections) transmission and prevention. Also to convince them the benefits of VCT (Voluntary HIV Counseling and Testing) in risk groups (Kementerian Kesehatan RI, 2015).

PMTCT programs implemented since 2005 in a whole country, targeted to 100% pregnant women who checked their pregnancy. The information provided includes: safe motherhood, how to have safe sexual intercourse, prevention and treatment of STIs (Sexually Transmitted Infections), the objectives of PMTCT program, post-test counseling and further services/ treatment (Kementerian Kesehatan RI, 2015).

Based on the result of ARV (Anti Retro Viral) follow-up treatment on 2017, as many as 12,000 pregnant women were registered to be ARV receptor, but there were only 10% of them, approximately 1,239 pregnant women who got those medication. On the other hand, only 12% of HIV positive adult ( $\geq 15$  years old) and 23% of HIV positive children who got those medication obediently. These inobedient on PMTCT programs should be underlined and evaluated by various parties.

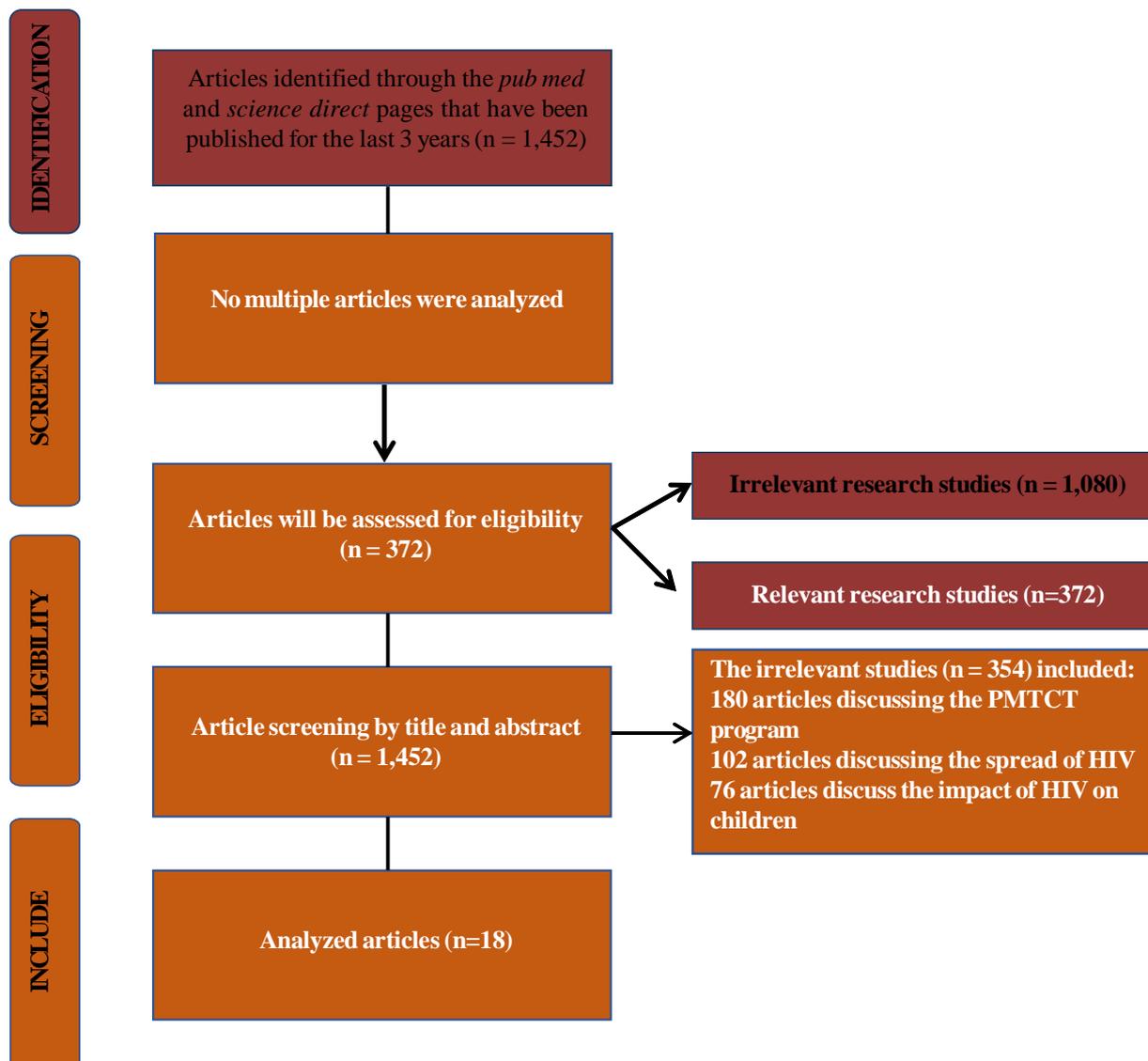
Problems arose on PMTCT implementation need to be carefully studied in order to achieve its targets. There were many studies carried out to examine factors related to PMTCT implementation, both supporting and impeding factors. In order to provide an outline of those studies, it is important to carry out a systematic review.

## METHODS

Systematic review was conducted to analyzed publications related to the topic. This study used PRISMA (Preferred Reporting Items for Systematic Reviews & Meta-Analyses) design and instrument and also a flowchart based on the 2009 PRISMA checklist. Articles from primary study were found in ScienceDirect and Pub Med. Keywords used were "HIV positive woman",

“PMTCT (Prevention Mother to Child Transmission)”, and “Barriers or Challenges”. 1,452 study were found on the first place based on keywords used. Restriction criteria that been used was year of publication. Only studies from 2018 to 2020 have been selected to be reviewed. It should be done to find the novelty of those studies that can be analyzed further. The other criteria of restriction used in this study were the ability of those original papers to be downloaded, while reports and case studies were excluded. Based on those criteria, there were 1,452 original articles has been found. The next step was

analyzed those articles based on titles and abstracts. Approximately, 1,080 articles were eliminated because those found to be irrelevant which were discussed about the risk factors for HIV occurrence, the impact on HIV infection and the epidemiology of HIV. As many as 372 relevant articles have been analyzed thoroughly and leaved 18 articles which were met the eligibility standards, while the other 354 articles were discussed the spread of HIV, the impact of HIV on children and PMTCT programs related to evaluation, objectives, benefits, and review of PMTCT services generally.



## RESULTS

The result barriers of PMTCT Program (*Prevention Mother To Child Transmission*) presented in Table 1.

**Table 1** The Research Indicate on Barriers to PMTCT (*Prevention Mother To Child Transmission*) Program

No	Name, Year of Publication and Title	Research Methode	Number of Sample	Research Place	Research Conclusion
1	Christina Lumbantoruan, Michelle Kermode, et. all, 2018 <i>Understanding women's uptake and adherence in Option B+ for prevention of mother-to-child HIV transmission in Papua, Indonesia: A qualitative study</i>	Qualitative Study	40 respondents	Indonesia	The importance of motivating factors that outweigh barriers to PMTCT uptake and adherence at five levels of the socio-ecological framework. The adoption of option B + as a policy for pregnant women in Papua as a screening for antenatal care has increased the identification of HIV-positive women and their participation in the PMTCT program (Christina L. et.al, 2018)
2	Nishi Suryavanshi, Vidya Mave, et. al, 2018 <i>Challenges and opportunities for outreach workers in the Prevention of Mother to Child Transmission of HIV (PMTCT) program in India</i>	Qualitative Study	60 respondents	India	Overcoming challenges that have been implemented in the PMTCT program is to increase patient interaction, access, and retention in care (Nishi S. et.al, 2018)
3	Melissa H. Watt, Cody Cichowitz, et al, 2018 <i>Predictors of postpartum HIV care engagement for women enrolled in the prevention of mother-to-child transmission (PMTCT) programs in Tanzania</i> Euphemia L. Sibanda, Sarah Bernays, et. al, 2018 <i>"Well, not me, but other women do not register because..." - Barriers to seeking antenatal care in the context of prevention of mother-to-child transmission of HIV among Zimbabwean women: a mixed methods study</i>	Cohort Study	200 respondents	Tanzania	The findings suggest that care engagement remains a concern in PMTCT programs, and must be addressed to realize the goals of PMTCT. Comprehensive counseling on HIV disclosure, along with community-based stigma reduction programs to provide a supportive environment for people living with HIV, are crucial to address barriers to care engagement and support longterm treatment. Women presenting to antenatal care with an established HIV status require support for care engagement during the crucial period surrounding childbirth, particularly those pregnant for the first time (Melisa H. et.all, 2018)

4	Euphemia L. Sibanda, Sarah Bernays, et. al, 2018 <i>“Well, not me, but other women do not register because...”- Barriers to seeking antenatal care in the context of prevention of mother-to-child transmission of HIV among Zimbabwean women: a mixed methods study</i>	Mixed methods study	21 respondents	Zimbabwe	ANC uptake is sub-optimal particularly in poor communities where ANC fees are levied. We identified additional barriers to ANC that are a result of integration of PMTCT and ANC services. Interventions to increase ANC uptake in the context of PMTCT need to address general ANC barriers and those related to the fear of HIV testing. This is important for the success of Option B+ and ‘treat all’ initiatives (Euphemia L. et. all, 2018)
5	Berhanu Elfu Feleke and Belaynew Wasie, 2018 <i>Challenges of PMTCT Service Utilization in Amhara Region: A Comparative Cross-sectional Study</i>	Comparative Cross-sectional Study	2615 respondents	Amhara	PMTCT service utilization was low in the study area. The presence of internal referral system significantly increases PMTCT service utilization (Berhanu E and Belaynew W. et.all, 2018)
6	Natasha Mehta, Jennifer Ho, et. al, 2018 <i>Investigating the role of stigma on fertility desire among HIV positive women in Bangkok, Thailand: a qualitative study</i>	Qualitative Study	10 respondents	Thailand	We found that while discrimination experienced with WLHIV within the reproductive healthcare setting in Bangkok is less of an issue now than in previous years, internal stigma and fear of discrimination from the community remained relevant concerns for this population. In addition to describing how these sources of stigma contributed differently to fertility desire among Thai HIV-positive women, our study highlighted areas for future interventions. As the national programme moves towards zero discrimination against all PLHIV, addressing the effects of community-based and internalised stigma on fertility desire among HIV-positive women is one avenue to reach this goal (Natasha M. et.all, 2018)
7	Karl Peltzer, Suat Babayigit, et. all, 2018 <i>Effect of a multicomponent behavioral PMTCT cluster randomized controlled trial on HIV stigma reduction among perinatal HIV positive women in Mpumalanga province, South Africa</i>	Randomized controlled trial	342 respondents	South Africa	This study examined the longitudinal experience of stigma, and the impact of an enhanced PMTCT intervention, including stigma reduction, on stigma outcomes. The intervention, which was administered by trained lay health workers, had a

significant effect on the reduction of HIV related stigma. Future interventions to reduce HIV related stigma among perinatal women could build on the stigma reduction components utilised in the intervention and expand them to develop a more comprehensive stigma reduction programme appropriate to the South African context (Karl Pet all, 2018)

8	Abby DiCarlo, Ruby Fayorsey, et.all, 2018 <i>Lay health worker experiences administering a multi-level combination intervention to improve PMTCT retention</i>	Qualitative Study	340 respondents	Kenya	This study assessed the experiences of lay health workers administering a combination of evidence-based interventions to improve retention among HIV-positive women initiating PMTCT services and their infants in Kenya. Findings demonstrate the fundamental role lay health workers play in supporting mothers engaged in PMTCT services by addressing behavioral, social, and structural factors associated with retention in care. Study findings also highlight the need for future interventions to include strategies to ensure privacy and decrease stigma within communities and facilities. This study adds important insight to the small but growing body of research on lay health worker experiences in HIV and PMTCT (Abby D.et all, 2018)
9	Dlama Nggida Rasmussen, Holger Werner Unger, et.all, 2018 <i>Political instability and supply-side barriers undermine the potential for high participation in HIV testing for the prevention of mother-to-child transmission in Guinea-Bissau: A retrospective cross-sectional study</i>	Retrospective Cross-Sectional Study	31.443 respondents	Genia	This study reveals that rapid scale-up PMTCT HIV testing services is possible even in settings with limited resources and political unease. Nevertheless, HIV programmes such as that in Guinea-Bissau must not only be supported in regards to treatment and testing supplies but also importantly aided in establishing proper management of stocks and back-up plans for periods of political and financial instability. While this study did not include specific data on socioeconomic status it shows an important association between marital status and

education with reduced testing uptake which must be taken into consideration in the provision of opt out HIV testing. Strengthening antenatal counselling and testing and insuring proper registration and documentation of HIV testing could reduce the need for testing at delivery and improve overall care in Guinea-Bissau (Dlama N.et.all, 2019)

10	Zibusiso Nyati-Jokomo, Inam Chitsike, Elizabeth Mbizvo, et. all, 2019 <i>If nurses were in our shoes would they breastfeed their own babies? A qualitative inquiry on challenges faced by breastfeeding mothers on the PMTCT program in a rural community in Zimbabwe</i>	Qualitative Study	108 Respondents	Zimbabwe	HIV and AIDS programmes should pay attention to women's readiness for interventions. There is need to understand women's life experiences to ensure informed and targeted programming for PMTCT (Zibusiso N.et.all, 2019)
11	Nicole B. Carbone, Joseph Njala, Debra J. Jackson, et all, 2019 <i>"I would love if there was a young woman to encourage us, to ease our anxiety which we would have if we were alone": Adapting the Mothers2Mothers Mentor Mother Model for adolescent mothers living with HIV in Malawi</i>	Qualitative Study	72 respondents	Malawi	HIV-infected adolescent mothers expressed a preference for peer-led, non-judgmental PMTCT support services that bridge communities and facilities to pragmatically address barriers of stigma, poverty, health system complexity, and food insecurity. Future research should evaluate implementation and health outcomes for adolescent mentor mother services featuring these and other client-centered attributes, such as provision of livelihood assistance and peer-led psychosocial support (Nicole B.et.all, 2019)
12	Sydney Chauwa Phiri 1, Sandra Mudhune, Margaret L. Prust, et al, 2019 <i>Impact of the Umoyo mother-infant pair model on HIV-positive mothers' social support, perceived stigma and 12-month retention of their HIV-exposed infants in PMTCT care: evidence from a cluster randomized controlled trial in Zambia</i>	Randomized controlled trial	28 respondents	Zambia	Low-cost interventions, such as the Umoyo program, have no impact on increasing HEI retention in PMTCT and do not reduce the stigma internalized and enforced using GEE estimates and t-weighted un-estimated comparison tests. Regarding pre support and HIV stigma (Sydney C.et.all, 2019)

13	Maricianah Onono, Tobias Odwar, Lisa Abuogi, et al, 2019 <i>Effects of Depression, Stigma and Intimate Partner Violence on Postpartum Women's Adherence and Engagement in HIV Care in Kenya</i>	Qualitative Study	200 respondents	Kenya	These cross-sectional results indicate that stigma, depression, and IPV experienced by HIV-infected women may impact their adherence to medication and clinic visits, which are critical for PMTCT and maternal health. The high prevalence of these issues underscores the importance of developing tailored psychosocial and structural interventions to improve mental health and reduce stigma and IPV to improve adherence and engagement in care within PMTCT (Maricianah O.et.all, 2019)
14	Babayemi O. Olakunde, Daniel A. Adeyinka, et.all,2019 <i>Correlates of antiretroviral coverage for prevention of mother-to-child transmission of HIV in sub-Saharan Africa</i>	Qualitative Study	266 respondents	Africa	Access to ARV drugs by HIV-infected pregnant women is essential to the elimination of mother-to-child transmission of HIV. While some countries in sub-Saharan Africa have achieved near-universal ARV coverage for PMTCT, many still have a huge gap. From our results, stigma appears to be an important factor that influences ARV coverage for PMTCT in sub-Saharan Africa. Thus in eliminating perinatal transmission of HIV, interventions that will address stigma-related barriers to uptake of PMTCT services may play a significant role (Babayemi O.et.all, 2019)
15	Kamonga M. Zacharius, Namanya Basinda, et.all, 2019 <i>Low adherence to Option B+ antiretroviral therapy among pregnant women and lactating mothers in eastern Tanzania</i>	Qualitative Study	305 respondents	South Africa	The option B+ adherence level was low and much lower among urban residents as compared to their counterparts in rural areas. The low proportion of good adherence of option B+ for PMTCT in eastern Tanzania might be signaling a regression of the PMTCT program in eastern Tanzania. Male partner support, time on ART and area of residence were significant predictors of adherence to option B+ treatment. Arraying more efforts to enhance male partner support and involvement and focusing on those on treatment for a longer duration in the PMTCT program may yield more significant outcome. Moreover more efforts

to monitor option B+ adherence should be made in urban settings while implementing cohort monitoring and evaluation of the barriers as well as regular viral load measurements (Kamonga E.et.all, 2019)

16	Osasuyi Dirisu, George Eluwa, Eseoghene Adams, et all, 2020 <i>"I think this is the only challenge... the stigma"</i> <i>Stakeholder perceptions about barriers to Antenatal care (ANC) and Prevention of mother-to-child transmission (PMTCT) uptake in Kano state, Nigeria</i>	Qualitative Study	200 respondents	Nigeria	Most of the barriers to uptake of PMTCT were hinged on issues around stigma, sociocultural beliefs and poor organization of health services. The implementation of effective PMTCT programs require innovative strategies that leverage improvement of ANC uptake as an entry point for PMTCT. In addition, ensuring that engagement in care is sustained requires creating a supportive stigma-free environment in the community and spousal support to ensure women can navigate the socio-cultural barriers that limit access to health services. Future research that deepens the understanding of social norms for healthcare decision making as well as male involvement in women's health will be useful to guide health promotion practice (Osasuyi D.et.all, 2020)
17	J.M. Abbamontea, S.Ramlaganb, T.K. Leed, et all, 2020 <i>Stigma interdependence among pregnant HIV-infected couples in a cluster randomized controlled trial from rural South Africa</i>	Randomized controlled trial	201 respondents	South Africa	Reduced stigma was associated with participation in the intervention, male involvement and condom use, while increased stigma was associated with participation in control conditions, pre-pregnancy HIV diagnosis and alcohol consumption (J.M. Abbamontea.et.all, 2020)
18	Christina Psaros, PhD, Jennifer A. Smit, PhD, MS, Nzwakie Mosery, BSocSc(Soc), et all, 2020 <i>PMTCT Adherence in Pregnant South African Women: The Role of Depression, Social Support, Stigma, and Structural Barriers to Care</i>	Qualitative Study	200 respondents	South Africa	This study provides evidence that depressive symptoms and lack of social support probably play an important role in managing adherence to ARVs during pregnancy and highlights the intersecting role of depressive symptoms, stigma, and social support in outcomes for this population (Christina P.et.all, 2020)

Table 1 showed the synthesis of the study population based on the research studies or articles reviewed. The research studies obtained were derived from 20 selected studies and the majority were conducted in several countries (Indonesia = 1, India = 1, Tanzania = 1, Zimbabwe = 2, Amhara = 1, Thailand = 1, South Africa = 4, Kenya = 2, Guinea = 1, Malaysia = 1, Zambia = 1, Africa = 1, Nigeria = 1). Of the 18 research studies, 11 qualitative studies, 3 RCT studies, 1 mixed-method study, 1 comparative cross-sectional study, 1 retrospective cross-sectional, 1 quantitative study, 1 cohort. The eligibility criteria contained in these 20 research studies are the number of samples in the study varied from 10 to 31,443 respondents, research studies were published in the last 3 years (2018-2020) and studies that show vertical HIV transmission and PMTCT program problems.

Based on the research that had been analyzed, most of the barriers were found in patients and health professionals. Patients often experienced stigma and discrimination in society. Stigma could be categorized into 3 scopes, i.e. internal stigma, in the community, and in health services. Several studies revealed the internal stigma in women who often get inappropriate treatment. The disclosure of their HIV status to the partner was not as expected, the majority of client partners did not accept this disclosure. The patient's feeling of sadness and disrespectness made their condition decrease, this could reduce their viral load. Discrimination in the community also made them feel gloomy, therefore most patients moved to the other residence and chose hospitals that were isolated from the community to make it easier for them to get ARV treatment. Another stigma in health care was that unfriendly and unfavored treatment has been accepted by patients. Health workers who know their status could not maintain client confidentiality, so the clients start to feel reluctant to follow their routine treatment.

A study conducted in South Africa was different from other studies, the results of that study revealed that family and partner support for HIV positive clients in rural areas was much better than HIV positive clients in urban areas. These results are also supported by data showed that HIV-positive clients in rural areas carry out ARV treatment routinely accompanied by their family or partners, but the opposite happens in urban areas. Studies in Malaysia showed that most young pregnant women

with HIV were living alone, and experiencing an economic crisis. They stated that the expenses for medical treatment were much greater than their income.

Other barriers also existed for health workers or facilitators in the implementation of PMTCT program, i.e. the stigma in the community, several health workers frequently got negative perception. Usually, health workers visit clients' homes to provide information about PMTCT program or confirm clients by carrying out routine medical therapy, but to minimize this stigma, health workers prefer to give treatment without direct contact (cellphones) and no longer visit clients. In addition, there was a mismatch between workload and income earned by health workers.

## DISCUSSION

In line with the UNAIDS program, 3 zero is zero new infection, zero death related AIDS and zero discrimination which targets that in 2020 around 90% of people know their HIV status, 90% of people infected with HIV get ARV and 90% of people who get ARV experience decreasing in their viral load. The success of this program can be done by preventing HIV transmission, increasing access to HIV testing, increasing the consumption of ARV / ARV treatment, improving the welfare of PLHA, mitigating the socioeconomic impact of the HIV epidemic on individuals, families and communities to maintain productivity and human resources in Indonesia (Komisi Penanggulangan HIV AIDS, 2015)

The government policy to prevent mother-to-child transmission of HIV is by enforcing the PMTCT program. Prevention of mother to child transmission (PMTCT) is a program to prevent mother-to-child transmission of HIV to reduce the risk rate for babies (WHO, 2017). According to the Ministry of Health (2015), efforts to prevent HIV transmission from mother to baby have four pillars/ programs, including: (1) Preventing HIV transmission to women of reproductive age, (2) Preventing unplanned pregnancies in mothers with HIV status, (3) Preventing HIV transmission from mother to baby, (4) Continuing the VCT program which aims to provide moral support, HIV testing services, counseling, therapy for opportunistic infections and ARVs (Kementerian Kesehatan RI, 2015).

The government implements a policy that is enforced for health workers called PITC (Provider Initiated Testing and Counseling). PITC is one of the HIV testing and counseling services provided by health workers to someone who comes to a health facility as a standard component of medical services (Peltzer K, 2015). PITC services have a requirement that is a supportive environment aimed at prevention, treatment, and social support. The implementation of PITC has wider coverage than VCT and is able to avoid delays in diagnosis and the support of adequate human resources, infrastructure, and medicines (Kementerian Kesehatan RI, 2010)

In the provision of programs that have been implemented, health workers are not able to deal with it as a whole. Many obstacles often arise in providing information about HIV, offering HIV testing, carrying out HIV testing, delivering test results, post-test counseling, and referral to care units and support from multiple parties if the client gets a positive result (Sudrani, 2018).

According to Green's theory in Priyoto (2014), it is stated that the support of husband or family is one of the factors in the occurrence of behavior change (Priyoto, 2014). This explanation is in line with Kuncoro (2007) that the support of a husband or partner that is spontaneous has a good impact on clients psychologically (Kuncoro, 2007).

The majority of studies revealed that clients who did not get social support from their families and partners so tend to not follow their treatment routinely. Disclosure of HIV status to families and partners was the origin of that problem, many women received an inappropriate treatment from their partners. Feelings of sadness, gloom and disrespect were the impact of the client's decline which resulted in the decreased viral load. Feelings of sadness could be associated with depression or stress which correlates with ARV adherence. This problem was the role of health workers to approach client families in improving PMTCT services and efforts to prevent mother-to-child HIV.

Other barriers that often arise were community stigma and discrimination. Stigma arises when people do not understand information about HIV completely and correctly (Darmoris, 2011), especially regarding HIV transmission, groups of people at risk of HIV disease, and ways to prevent HIV infection (Guma JA, 2011). Stigma is one of the biggest

problems preventing clients from taking ARV treatment. Then for people who are at risk of HIV, sometimes they don't want to do an HIV test because they are afraid to know the fact that they are having HIV (Maman S, 2009). This fear experienced by clients has an impact on relationships between families, partners, and society. Stigma that occurs in the community can also interfere with client social activities (Campbell C, 2010). Often clients close themselves and are not willing to interact with family, neighbors and friends. Society assumes that people with HIV positive status are people who do not deserve to live in that society and are seen as bad people (Lestari, 2013).

This is in line with several research studies that have revealed that stigma and discrimination can affect ARV adherence. Not a few of them are discouraged from moving their residence so that the treatment they were undergoing could be carried out properly and routinely. Promoting HIV education from millennials and adults by health workers or facilitators is necessary to minimize the occurrence of stigma and discrimination for those with HIV and reduce the risk of HIV transmission, especially from mother to child.

Economic problems are also one of the barriers to HIV treatment. The treatment administered by the client is quite large to bear (Han N. et al., 2009), the costs include laboratory blood tests and opportunistic infection treatment (Kumarasamy N. et al., 2005), many clients have to seek out loans or sell their goods to cover the needs (Badahdah AM and Pedersen DE, 2011). This problem also occurs in Malaysia, showing that young mothers who are pregnant with HIV status reveal that they cannot receive regular treatment because the income they get from their work does not fully cover their needs for ARV treatment.

Health workers also experienced funding problems. The workload carried out by health workers was monitoring, recording and reporting of HIV cases as well as running programs that ensure client commitment to ARV treatment. It is conveyed that the workload and wages earned were incomparable. The heavy workload they bear reduced the number of human resources or the non-distribution of health workers in areas where data collection required. The relationship between those two could reduce morale and performance of health workers to improve PMTCT services.

## CONCLUSION

This review could answered the objectives of the research study regarding the barriers to the PMTCT program, as this research was conducted to provide information about the various barriers that often exist in the implementation of PMTCT program and provide support for its implementation. The active role of health workers to minimize various obstacles could be implemented by providing early counseling and education among millennials and adults as well as to client families to get social support.

## SUGGESTION

This study does not cover the barriers of the PMTCT program as a whole. Need to study about distance between the house to the health facility, the knowledge of pregnant women about HIV and HIV testing, the occupation of pregnant women which affects ARV adherence and the availability of HIV testing kits and ARV drugs.

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