

ARTICLE INFORMATION

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## HIV: Prevention of mother-to-child transmission basic knowledge of HIV and PMTCT of women in Indonesia

Astri Mutiar\*, Agus Hendra, Nunung Nurhayati

Sekolah Tinggi Ilmu Keperawatan PPNI Jawa Barat

\*Corresponding author. E-mail: [astriamut15@gmail.com](mailto:astriamut15@gmail.com)

### Abstract

**Background:** The HIV-infected population is experiencing a shift in trends that lead to public health problems. This causes an increase in the incidence of HIV among housewives or women. Knowledge of mother-to-child transmission in women has an important aspect in the success of prevention practices. Having limited knowledge may cause women to avoid screening and testing for HIV.

**Purpose:** To identify the HIV prevention of mother-to-child transmission basic knowledge of HIV and PMTCT among women in Indonesia.

**Method:** A cross-sectional study design was conducted with a sample size of 137 women. Convenience sampling method was used to recruit the sample between June to September 2020. Demographic characteristics and knowledge of the Indonesian version of PMTCT from V.N ADDO were used for data collection. Descriptive analysis and cross tabs for statistical analysis.

**Results:** The majority of respondents don't know their own HIV status (93.4%). Most respondents answered that HIV is a sexually transmitted infection disease (94.1%), having no cure (46.3%), and can be prevented by being faithful to partner (93.4%), selected before birth is the time of transmission infection from mother to baby (76.5%), and giving medication to pregnant women is the way to prevent transmission (43.3%). On the other side, most of the respondent doesn't know time from infection to appearance of symptoms (83.8%) and in terms of MTCT knowledge, here are still 36.8 women don't know how to prevent PMTCT.

**Conclusion:** Improving comprehensive information dissemination from healthcare professionals by using mass media is needed to improve knowledge and service uptake to succeed in the PMTCT program.

**Keywords:** HIV; Knowledge; Mother; PMTCT; Women

### INTRODUCTION

HIV infected population is experiencing a trend shift that leads to public health concerns. Where the population having sex with men, which is the population at greatest risk in HIV cases, changes their sexual orientation to be bisexual (World Health Organization, 2018; United Nations Programme on HIV and AIDS, 2013). This has led to an increase in the incidence of HIV among housewives or women,

which occurs because of infection by their husbands (United Nations Programme on HIV and AIDS, 2013). Mother to child transmission (MTCT) is one of the most common routes of spreading HIV infection in women, especially pregnant women (Mazia, Narayanan, Warren, Mahdi, Chibuye, Walligo, & Hainsworth, 2009; Schuster, McMahon, & Young, 2016). Without intervention, the risk of MTCT varies until 45%

prevalence. Meanwhile, with intervention, the rate of risk of MTCT can decrease to 2% (World Health Organization, 2016). Despite the success of Prevention of Mother to child transmission (PMTCT) globally, this program still leaves a gap in the difference in the estimation of the number of pregnant women infected with HIV with those who use antiretroviral prophylaxis and perform screening.

In Indonesia, the prevention of mother to child transmission (MTCT) has been carried out by launching an HIV screening program for pregnant women, but this program has only recently been implemented in several health care centers. This has resulted in low screening coverage. HIV screening for pregnant women was carried out in about 13% (761,373 people) of the total pregnant women in Indonesia totaling 5,291,143 people (World Health Organization, 2018). This is contrary to the fact that almost 98% of pregnant women in Indonesia have undergone antenatal checks, which should be accompanied by screening and testing for HIV. Previous research said that the small number of ARV screening and therapy in pregnant women in Indonesia was caused by several things such as lack of knowledge about HIV, the unwillingness of pregnant women to get blood tests, poor perception of HIV testing, and difficulties in access which not all health care center have facilities for HIV testing (Isni, Shaluhayah & Cahyo, 2017; Haile, Teweldeberhan, & Chertok, 2016; Alviana, & Romdiyah, 2020).

Knowledge and awareness of MTCT in women is having a crucial aspect of successful prevention practice. Women can protect themselves and their relatives from HIV infection and take HIV testing is likely to have adequate knowledge (Alemu, Habtewold, & Alemu, 2017; Haile, Teweldeberhan, & Chertok, 2016; Yakasai, 2021). Otherwise, women who likely to avoid screening and testing uptake commonly having limited knowledge and awareness of MTCT (United Nations Programme on HIV and AIDS, 2013). Various studies have already been conducted around the world

to examine the knowledge of PMTCT among women, especially pregnant women on antenatal care, but few studies found investigating women in the general population who had intended to expecting again. Whereas, examining only in focus population such as women in antenatal care possibly resulted in overestimate the level of knowledge. Thus, to carry out a piece of more comprehensive information, the current research aim is to identify basic knowledge of HIV and PMTCT of women in Indonesia.

## RESEARCH METHOD

A cross-sectional study was conducted to identify the knowledge of HIV prevention of mother to child transmission among women in Indonesia. Convenience sampling was used to recruit a sample with the inclusion of the criteria of worth 18 years or older, understand Bahasa Indonesia, using a smartphone, and expecting or planning to pregnant again. Illiterate women were excluded. The data collection was conducted from June to September 2020. Estimation of sample size was calculated via G-Power Software Version 3.1.9.2 using F-test with the assumption  $\alpha = .05$ , medium effect size = .25 (Cohen, 1998), power level = .80, considering a number of predictors = 18, a sample size of 96 was needed with 30% attrition rate, 125 total sample would need to be recruited. A total of 136 women were recruited.

Demographic characteristics and the Indonesian version of PMTCT-Knowledge from V.N ADDO were used for data collection. The questionnaire consists of 10 items divided into 7 items of basic knowledge of HIV and 3 items of PMTCT knowledge. The translation process was conducted using forward and backward and did content validity. Descriptive analysis and cross-tab for statistical analyses were used to identify the characteristic of the respondent in all category data. All statistical analysis was performed using SPSS software version 25.

**Astri Mutiar\*, Agus Hendra, Nunung Nurhayati**

Sekolah Tinggi Ilmu Keperawatan PPNI Jawa Barat

\*Corresponding author. E-mail: [astriamuti5@gmail.com](mailto:astriamuti5@gmail.com)

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## RESULTS

Table 1. Demographic Characteristic of Respondent (N=136)

Variables	Result
<b>Age(Mean±SD)(Year)</b>	(32.33±9.805)
<b>Marital Status(n/%)</b>	
Married	116/85.3
Single	20/14.7
<b>Religion (n/%)</b>	
Islam	136/100
<b>Level of Education (n/%)</b>	
Elementary School	9/6.6
Junior High School	28/20.6
Senior High School	68/50
College	31/22.8
<b>Family Income (n/%)</b>	
Rp. 5.000.000 to Rp. 10.000.000	11/8.1
Rp. 2.000.000 to Rp. 5.000.000	43/31.6
Rp. 0 to Rp. 2.000.000	82/60.3
<b>Employment Status (n/%)</b>	
Employee	31/22.8
Unemployed	105/77.2
<b>Living Area (n/%)</b>	
Rural	119/87.5
Urban	17/12.5

Table 1 presents the demographic questionnaire of respondents. From the total of 136 respondents, the majority (85.3%) were married, having Islam as religion (100%), having senior high school level of education (50%), getting at least Rp. 2.000.000 monthly income, unemployed (77.2%) and living in rural areas (87.5%). Mean respondent age was 32.33 years.

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**Table 2. Access to Get Information About HIV and MTCT (N=136)**

Items	n/%
<b>Have you ever heard about HIV/AIDS information?</b>	
Yes	136/100
<b>If yes, where you got that information?</b>	
Internet	25/18.4
Mass Media	90/66.2
Healthcare Professional	21/15.4
<b>Have you ever heard about mother to child transmission information?</b>	
Yes	128/94.1
No	8/5.9
<b>If yes, where you got that information?</b>	
Internet	20/15.6
Mass Media	83/64.8
Healthcare Professional	25/19.6
<b>Do you know where to take an HIV test?</b>	
Yes	134/98.5
No	2/1.5
<b>If yes, where are the possible place for HIV testing?</b>	
Clinic	4/2.9
Laboratories	23/17.2
Hospital	86/64.3
Primary Health Care	21/15.6

Table 2 showed the access information to get information about HIV and MTCT. All participants claimed ever heard about HIV information and the majority got information from Mass media (66.2%). Otherwise, almost all participants also ever heard about MTCT (94.1%) and also got information from Mass Media (64.8%). The majority of participants claimed to know where to take HIV testing (98.5%) and said that the hospital is a possible place to do HIV testing (64.3%).

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Sekolah Tinggi Ilmu Keperawatan PPNI Jawa Barat

\*Corresponding author. E-mail: [astriamut15@gmail.com](mailto:astriamut15@gmail.com)

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**Table 3. Knowledge of HIV and MTCT (N=136)**

Items	n/%
<b>What is HIV/AIDS?</b>	
STI (Sexually Transmitted Infection)	128/94.1
Life-threatening disease	7/5.2
Blood disease	1/0.7
<b>How long does it take from infection to the appearance of symptoms?</b>	
>1 to 5 years	5/3.7
>5 to 10 years	13/9.6
Less than 1 year	4/2.9
Don't know	114/83.8
<b>What is the cure/treatment for AIDS?</b>	
No cure	63/46.3
No cure but palliative	14/10.3
By medicine	59/43.4
<b>How can HIV be prevented?</b>	
Being faithful to a partner	127/93.4
Abstain for sexual intercourse	7/5.1
Not sharing sharps	2/1.5
<b>Can an HIV positive woman transmit HIV to her baby?</b>	
Yes	128/94.1
No	7/5.2
Don't know	1/0.7
<b>When transmission from m infected mother to her baby occur?</b>	
Before birth	104/76.5
During labor	12/8.8
During breast-feeding	20/14.7
<b>How to prevent the transmission from mother to child?</b>	
Giving medicine to pregnant women	59/43.3
Don't breastfeed	27/19.9
Don't know	50/36.8

The knowledge of HIV and MTCT showed in Table 3. Most respondents answered that HIV is a Sexually transmitted infection disease (94.1%), don't know the time from infection to appearance of symptoms (83.8%), having no cure (46.3%), and can be prevented by being faithful to partner (93.4%), Otherwise, in terms of MTCT knowledge, most of the respondent know the HIV can be transmitted from mother to baby (94.1%), selected before birth is the time of transmission infection from mother to baby (76.5%). Meanwhile, there are still 36.8% of women don't know how to prevent PMTCT. And in terms of knowing their HIV status, the majority of participants don't know their status (93.4%).

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## DISCUSSION

This study found out that, the majority of participants were aware and having a basic knowledge of HIV and MTCT. Most of the respondents know about basic knowledge of HIV, that is, they know what HIV is, how it is transmitted, and how it can be prevented. However, only a few respondents don't know about the incubation period. A previous study in around Africa found that the level of knowledge is high such in Ghana (25%), South Africa (23.1%), Ethiopia (60%), and Malawi (68%) (Boateng, Kwapong, & Agyei-Baffour, 2013; Abebe, Kassaw, & Shewangashaw, 2020). Meanwhile in Indonesia, two studies in different provinces found similar results that most of the respondents having sufficient knowledge (43.3% and 56.7%) and comparable with the current study (Wardhani, Dinastiti, & Azizah, 2019; Ramadhana, Rochmawati, & Lestari, 2016). Variation findings might be happening due to the cultural or demographic characteristics of the respondent.

This study found that most of the respondents have level education in senior high school. Likely said by previous research that level of education determines the knowledge, education has a strong association with the correct knowledge, women who had a higher educational level having 3.25 more likely to have correct knowledge (Luba, Feng, Gebremedhin, Erena, Nasser, Bishwajit, & Tang, 2017). Higher-level educational women likely to have more information access and easily literate (Luba et al, 2017; Teshale, Tessema, Alem, Yeshaw, Liyew, Alamneh, & Worku, 2021). Refer to the characteristic of the respondent in this study, most women get information easily from Mass media such as television and the internet.

Even though the level of knowledge is quite high, there is an interesting fact that found in this study, most of the respondent still don't know how long does it take from infection until symptoms appear. This is in line with previous research which states that although the question of what HIV is, how it is transmitted and how to prevent it is answered correctly, only a few respondents can answer how long symptoms occur from the onset of infection (Luba et al, 2017; Abteu, Awoke, & Asrat 2016). Refer to the characteristics of respondents in this study who mostly get information

from mass media than health care professionals, that could be the reason why this happened. Although this study did not dig more into the reasons why information searches were carried out mostly in the mass media, it is possible that this interest occurred because Indonesia occupied the 6th highest internet user country, especially housewives (Nugroho, & Syarief, 2012). The need for innovative interventions by health care professionals to increase interest while maintaining comprehensive information.

About MTCT knowledge, this study showed that most of the respondents having correct knowledge about transmission, transmission time from mother to child, but some of the respondents still having misleading information about how to prevent transmission. The high percentage found that the way to prevent transmission are don't breastfeed and even some respondent doesn't know how to prevent transmission. Based on the cross-tabulation result, found that most of the respondents who answered don't know how to prevent transmission are living in rural areas. Awareness and access to correct information could be an explanation of it.

On average, they don't know their HIV status, because they feel they are not at risk. The results of previous research and why the heck can be like this from the research results even though the knowledge is good. The stigma about HIV in society still becomes the most challenging event, and it becomes an inhibiting factor for carrying out HIV testing (PMTCT) (Yiu, Mak, Ho, & Chui, 2010). Another cause based on previous research is the lack of information obtained during counseling about HIV testing (PMTCT). Counseling time is only done briefly (Larasaty, & Purwanti, 2016). Intervention to improve screening uptake is needed.

## CONCLUSION

The overall level of knowledge of respondents is quite high, but in some crucial points, such time of symptoms occur, don't know how to prevent transmission from mother to child and don't know their HIV status. Improving comprehensive information dissemination from healthcare professionals by using

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\*Corresponding author. E-mail: [astriamuti15@gmail.com](mailto:astriamuti15@gmail.com)

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mass media is needed to improve knowledge and service uptake to succeed in the PMTCT program.

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transmission of HIV/AIDS, its prevention and associated factors among reproductive-age women in sub-Saharan Africa: Evidence from 33 countries recent Demographic and Health Surveys. *PLoS one*, 16(6), e0253164.

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