



Knowledge, attitudes, and practices of male partners on antenatal human immunodeficiency virus screening for the prevention of mother-to-child human immunodeficiency virus transmission in a private tertiary hospital

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Abstract:

Background: Human immunodeficiency virus (HIV) transmission remains to be a significant problem in the country despite preventive efforts in the past years. In children, mother-to-child vertical transmission during pregnancy is the most common route. The World Health Organization has implemented the Prevention of Mother-to-Child HIV Transmission (PMTCT) program, which promotes a comprehensive approach in addressing this problem. Male partner involvement in antenatal voluntary HIV counseling and testing has been proposed to be a vital part of this approach. Their role in the process has not been studied in depth in the local setting.

Objectives: The study aimed to describe the knowledge, attitudes, and practices of male partners of pregnant women toward antenatal HIV screening in a local private tertiary hospital using a survey created by Belato *et al.* in 2016.

Methodology: A descriptive analysis was done to present the sociodemographic and clinical characteristics of the participants. The association between the level of male partner involvement and independent variables was also tested.

Results and Conclusions: The results of the study revealed a high level of male partner involvement in the PMTCT of HIV services at 69.1%. Age of the male partner and the duration of the couple living together were significant factors associated with male partner involvement. However, there was lack of knowledge regarding HIV transmission, antenatal HIV testing, and PMTCT services among majority of the male partners. Community sensitization of men about the benefits of antenatal HIV testing and PMTCT services need to be prioritized to improve their awareness and their involvement in the program.

Keywords:

Antenatal human immunodeficiency virus screening, human immunodeficiency virus, male partner involvement, prevention of mother-to-child human immunodeficiency virus transmission

Introduction

Human immunodeficiency virus (HIV) transmission remains to be a significant

health problem in developing countries despite the increasing availability of effective prevention methods. In children, the most common mode of transmission

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How to cite this article: Sangalang AJ, Clemente-Chua LR. Knowledge, attitudes, and practices of male partners on antenatal human immunodeficiency virus screening for the prevention of mother-to-child human immunodeficiency virus transmission in a private tertiary hospital. *Philipp J Obstet Gynecol* 2021;45:55-60.

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Submitted: 27-Apr-2021

Revised: 09-May-2021

Accepted: 28-May-2021

Published: 20-Jul-2021

is through mother-to-child transmission during pregnancy and childbirth. In 2007, the World Health Organization (WHO) developed the Prevention of Mother-to-Child HIV Transmission (PMTCT) program, which includes (1) primary prevention of HIV infection among women of childbearing age, (2) preventing unintended pregnancies among HIV-positive women, (3) preventing transmission from an HIV-positive woman to her infant, and (4) providing treatment, care, and support to HIV-positive women, their children, and their families.^[1]

In 2017, there were 68,000 Filipinos living with HIV, 9.11% of which were women 15 years old and above. The WHO PMTCT program was implemented as part of the effort to eliminate mother-to-child HIV transmission in the Philippines. Despite the existence of the program, a low percentage of pregnant women actually availed of the services. In 2017, 500 pregnant women out of 1,700,618 pregnancies were detected to have HIV. Among these, only 53 (11%) actually received the WHO-recommended treatment.^[2]

Male partner involvement in voluntary HIV screening has been proposed to be a vital part in fulfilling the PMTCT program. Studies in South Africa and North America have concluded that male partner involvement in antenatal care significantly improves the health-seeking behavior toward HIV testing in pregnancy.^[3] In the local setting, antenatal HIV screening remains to be low for both the pregnant patient and the male partner.^[2] Due to lack of research, factors possibly correlated with this poor compliance remain to be unknown. Given the available evidence from studies done in other developing countries with high HIV prevalence, there is a need to investigate whether similar findings apply locally to provide recommendations to improve the PMTCT programs.

Objectives

Following the landmark study done by Belato *et al.* in 2016 in Southern Central Ethiopia, the study aimed to describe the knowledge, attitude, and practices of male partners of pregnant women toward antenatal HIV screening for PMTCT in a local tertiary hospital and to determine whether these were associated with their involvement in PMTCT services.

Methodology

Study treatment and setting

Based on the abovementioned landmark study, to have a prevalence of 30.9%,^[3] a minimum of 270 subjects were required to have a statistical power of 95% and confidence interval of 90%. The target population included male partners, aged 18 years old and above, of pregnant women who sought consult at the pre-labor

room (emergency room) of a private tertiary hospital, from December 2019 to April 2020. Biological paternity of the partner was not considered for the selection of the study population as long as the subject was the one who accompanied the patient in her antenatal checkups. Male partners who were younger than 18 years old and who did not return the questionnaire were excluded from the study. The informed consent was explained thoroughly by the principal investigator (or the assigned surveyor) to the respondent [Appendix A].

The survey tool was a questionnaire designed by Belato *et al.* who conducted a similar study in Southern Central Ethiopia [Appendix C]. A pilot study was done to test the validity of the questionnaire. It comprised four sections that determined the sociodemographic profile and assessed the knowledge, attitudes, and practices of the subjects. This included their knowledge on PMTCT services, sociocultural factors that influence their involvement, and their level of involvement in the program. The survey was made to be completed within 20 minutes. Three items in the sociodemographic aspect of the original questionnaire were modified to fit the local setting (i.e. race, ethnicity, and monthly income). Furthermore, the section on “male partner’s experience and opinion regarding PMTCT services related factor” was omitted due to the lack of applicability in the local setting where antenatal clinics specific to HIV are not existent.

Data collection

The questionnaire was distributed to the respondents during their pregnant partner’s consult at the pre-labor room. Subjects’ inclusion in the study remained to be anonymous to maintain confidentiality. Accomplished questionnaires were collected by the primary investigator and placed in a sealed brown envelope. The data were collated by the primary investigator through Microsoft Excel and stored in her personal computer for confidentiality purposes. Subjects were identified using randomized number.

Data analysis

Descriptive statistics was used to summarize the sociodemographic and clinical characteristics of the participants. Frequency and proportion were used for nominal variables, median and range for ordinal variables, and mean and standard deviation for interval/ratio variables.

The attributes included in analysis were age, marital status, residence, living status with partner, religion, level of education, and occupation. The association between the level of male partner involvement in PMTCT program and independent variables was tested using Chi-square tests and Pearson’s correlation. Odds ratio

and corresponding 90% confidence intervals were used to quantify the degrees of association.

All valid data were included in the analysis. Respondents with missing data were not included. Null hypothesis was rejected at 0.05 α level of significance. SPSS version 22 (IBM Corp. Released 2013. IBM SPSS Statistics for Windows, Version 22.0. Armonk, NY: IBM Corp) was used for data analysis.

The study underwent the processes imposed by the institution's Clinical and Translational Research Institute and was approved by the institutional review board. Adverse events or conflict of interest were not expected in the study.

Results

Study participant characteristics

A total of 102 respondents were given questionnaires,

Table 1: Sociodemographic characteristics of male partners of pregnant women (n=97)

Sociodemographic variables	Frequency, n (%)
Residence	
Urban	85 (87.6)
Rural	12 (12.4)
Religion	
Catholic	76 (78.4)
Protestant	5 (5.2)
Muslim	2 (2.1)
Adventist	1 (1.0)
Others ^a	13 (13.4)
Marital status	
Married	80 (82.5)
Cohabiting	14 (14.4)
Separated/divorced	0
Others	3 (3.1)
Living with partner	
Yes	94 (96.9)
No	3 (3.1)
Highest educational attainment	
None	0
Grade school	0
High school	4 (4.1)
College	81 (83.5)
Postgraduate	12 (12.4)
Others	0
Occupation	
Unemployed	3 (3.1)
Self-employed	12 (12.4)
Government employee	6 (6.2)
Employed in a private corporation	62 (63.9)
Businessman	7 (7.2)
Others ^b	7 (7.2)

^aOther religions include Iglesia ni Cristo, Dating Daan, Church of Jesus Christ of the Latter Day Saints, Born Again Jesus the Messiah, ^bOther occupations include Overseas Filipino Workers, Sea Farers, Lawyers and Academe

but only 97 were valid for data analysis [Table 1]. Majority of the respondents were 35 years old and below (70, 72.16%), with a median age of 33 years. Most of the respondents were from urban areas (85, 87.6%), whereas the remaining were from rural areas. The dominant religion was Roman Catholic (76, 78.4%), whereas others were from various religious groups. Majority of the respondents were married (80, 82.5%), and others were cohabitating (14, 14.4%), whereas only a few (3, 3.1%) were not living together. The average number of years that they are living together with their pregnant partner was 4.9 years. Most of the respondents were college graduates (81, 83.5%), and some finished a postgraduate course (12, 12.4%). Most of the respondents were employed in a private corporation (62, 63.9%), whereas others were self-employed (12, 12.4%). Only a small percentage (3, 3.1%) of the respondents were unemployed.

Sociocultural factors that influence involvement

Majority of the respondents (76, 78.4%) strongly agreed that they should accompany their partner to prenatal checkups. However, some of the respondents also agreed (47, 48.5%) that it would be enough if other less busy relatives accompany their partner.

In terms of HIV testing, more than half of the respondents (56, 57.7%) disagreed that it is taboo for men to discuss HIV testing during pregnancy. Moreover, majority of the respondents agreed (32, 33%) and strongly agreed (48, 49.5%) that a pregnant woman can be tested for HIV even without the partner's consent. Most of them (69, 71.2%) disagreed that it is better to live with an unknown HIV status than live depressed with a positive HIV status. Majority (83, 85.6%) of the respondents believed that even if they are faithful to each other, they should still be tested for HIV together. However, more than half of them (56, 57.7%) thought that it is better to postpone HIV testing to postdelivery since pregnancy in itself is already stressful.

In terms of the HIV results, 66 of the respondents (68.1%) believed that being positive does not necessarily prove that their pregnant partner is unfaithful; hence, majority also disagreed (80, 82.5%) that they should be divorced.

Knowledge on Prevention of Mother-to-Child HIV Transmission services

Almost all of the respondents knew that HIV could be transmitted by unprotected sexual intercourse (90, 92.8%), contaminated sharps and needles (85, 87.6%), and blood transfusion (89, 91.8%). Majority (83.5%) also knew that HIV could be transmitted from mother to child (81, 83.5%) during pregnancy (79, 81.4%) and during labor and delivery (62, 63.9%). Most were aware (81, 83.5%) that HIV cannot be transmitted by sleeping in

the same bed. However, only half knew (57, 58.5%) that HIV can be transmitted during breastfeeding.

In terms of HIV transmission, majority knew that HIV counseling and testing for both pregnant mothers (94, 96.9%) and their male partners (93, 95.9%) can help reduce transmission. However, only half knew (49, 50.5%) that use of contraception can prevent transmission. A lot of respondents were not aware that provision of antiretroviral drugs to infected mother and baby (54, 55.7%), delivery via cesarean section (55, 56.7%), and avoidance of breastfeeding in untreated mothers (45, 46.4%) can help reduce transmission.

In terms of the PMTCT program, more than half of them have not heard of it (70, 72.2%) and were not aware that its services are being offered in government hospitals (68, 70.1%).

Level of male partner involvement

Almost all of the respondents (90, 92.8%) accompanied their partner at least once to a pre-natal checkup during the pregnancy and entered the clinic together with their partner (90, 92.8%). Most of them (72, 74.2%) have also reminded their partner of their follow-up schedule, covered medical expenses (72, 74.2%), and asked about the information that they got from the consult (54, 55.7%).

However, majority (78, 80.4%) of the respondents have never self-initiated the discussion on the importance of PMTCT services or have even requested their partner to be tested for HIV during the pregnancy (87, 89.7%). During prenatal checkup, majority (77, 79.4%) of the respondents were not counseled and tested for HIV.

If they are to be tested, majority (65, 67%) will confide with their pregnant partner if ever they test positive. On the other hand, assuming that their pregnant partner tests positive, most of the male partners will help in the follow-up until the HIV status of the newborn is known (83, 85.6%). Majority also agree for their partner and the newborn to take antiretrovirals (67, 69.1%). In the event that the female partner tests positive and the respondent tests negative, more than half of them (57, 58.8%) will not consider this as a reason to discontinue their conjugal relationship. If the situation

is reversed, most of them (69, 71.1%) are willing to use condom consistently to prevent transmission.

Factors affecting involvement in Prevention of Mother-to-Child HIV Transmission services

Bivariate analysis [Table 2] revealed a positive correlation between male partner involvement and both his age and the number of years he is living together with his partner. The significance was high with age. The older the male partner was, the less likely that he was involved ($P = 0.01$). Similarly, the longer the partners lived together, the less the male partner was involved ($P = 0.041$).

Among the sociocultural factors, there was an association between the male partner's opinion on postponing HIV testing and their involvement. Those who were not involved more strongly agreed in postponing the testing after delivery ($P = 0.026$).

In terms of knowledge, male partner involvement was significantly associated with their knowledge on avoidance of breastfeeding as well as with their knowledge about counseling and testing services. Those who agreed to avoid breastfeeding to reduce risk of HIV transmission were 3.89 times more likely to be more involved than those who disagreed (95% confidence interval). Those who were more knowledgeable about counseling and testing at antenatal care clinics are 3.24 times more likely to be more involved than those who had little knowledge (95% confidence interval).

Discussion

Among those who participated in the study, the level of male partner involvement in the PMTCT services was 69.1%. This is higher than the result of the study by Belato *et al.* in Southern Central Ethiopia, which revealed a 30.9% male partner involvement.^[3] The discrepancy may be attributed to the differences in the sociodemographic characteristics of the study participants, including the dominant religion (Catholic versus non-Catholic), residence (urban versus rural), level of education (college graduate versus Grade 5–8), and occupation (employed in a private corporation versus farmer). This might also be due to the difference in socioeconomical accessibility and availability of health care,

Table 2: Bivariate analysis of factors associated with male involvement in prevention of mother-to-child human immunodeficiency virus transmission

Variables	Pearson correlation	Significant (two-tailed)	OR (95% CI)
Age	0.261 ^a	0.010	
Number of years living together	0.208 ^b	0.041	
Attitude on postponing HIV testing	11.022	0.026	
Knowledge on avoidance of breastfeeding	4.748	0.038	3.892 (95)
Knowledge on counseling and testing services at antenatal care clinics	4.485	0.044	3.240 (95)

^a Correlation is significant at the 0.01 level (two-tailed), ^b Correlation is significant at the 0.05 level (two-tailed). OR: Odds ratio, CI: Confidence interval, HIV: Human immunodeficiency virus

given that the study was conducted in a tertiary hospital in an urban area, where majority of the respondents probably have better access to information and health-care services.

Interestingly, the study found a significant correlation between male partner involvement and his age [Table 2]. Younger male partners are more likely to be involved in PMTCT services. Similar result was found in another study done in Northwest Ethiopia by Zenebe and colleagues, where they attributed this to the increased communication and better knowledge among younger couples (between 20 and 39 years old), and increased fear of HIV testing in the older age group.^[4] This is in contrast to the study done by Byamugisha and colleagues in Eastern Uganda, where age was not associated with male partner involvement. Instead, level of education and occupation were significantly correlated to involvement.^[5] Since majority of the study's respondents were from urban areas, most had access to education, completed at least a college degree (95.9%), and are employed (96.9%). Although these factors may have affected the high percentage of involvement, no significant correlation was found in the study.

Another factor that had a significant correlation with male partner involvement is the number of years he was living together with his partner [Table 2]. The longer the duration, the less the male partner was involved. This is contrary to the study conducted in Northern Tanzania, where partners living together were more likely involved in PMTCT services.^[6] Although living together has an advantage of being able to discuss about health-related issues which may increase male partner involvement, the longer duration of living together may actually be a hindrance to the interest of male partners in the health of their pregnant partner.

Findings also revealed important misconceptions regarding HIV transmission, and this is a critical deterrent to the elimination of mother-to-child HIV transmission in the country. For one, the lack of knowledge on the use of contraception is crucial to the first goal of the PMTCT program on primary prevention of HIV infection among women of childbearing age. Second, the misconception about transmission during breastfeeding is a hindrance to the third goal of preventing HIV transmission from an HIV-positive woman to her infant. Finally, the lack of knowledge on provision of antiretrovirals does not support the fourth goal of providing treatment to HIV-positive women and their children. Although majority of the respondents had high educational attainment, this does not seem to translate to having better knowledge regarding HIV transmission. Moreover, despite the PMTCT program's existence in the country for more than 10 years, more than half of the respondents have not heard of it and were not aware that its services are being offered

during prenatal consults. Along with this, most of the respondents have never self-initiated the discussion of PMTCT services or have even requested their partners to be tested for HIV during the pregnancy.

In the study, 92.8% of the male partners accompanied their partner to a prenatal checkup at least once during the pregnancy and all of them have actually entered the clinic with their partner. This is significantly higher compared to studies conducted in Northwest Ethiopia (69.3%), Northern Ethiopia (20.1%), Southern Central Ethiopia (15.2%), and Eastern Uganda (5%).^[5,7,8] This most likely stems from the African culture that views pregnancy and childbirth as solely a woman's affair.^[5] On the other hand, it is part of Filipino culture that male partners become part of the entire process of pregnancy and childbirth, whether or not they are conjugally bound to their partner. Nonetheless, despite being present during consults, majority of the respondents claim that they were not counseled and tested for HIV.

The study also showed that there is a positive correlation between male partner involvement and their disagreement to postpone HIV testing of their pregnant partners. This is comparable to the study in Mekelle, Northern Ethiopia, where most of the mothers were actually encouraged by their partners to get tested during pregnancy.^[8] The results also revealed an association between knowledge about counseling and testing services at antenatal care clinics and male partner involvement. Having information about PMTCT services may have helped the partners in determining the benefits of HIV testing during pregnancy and the risks of delaying it until postpartum.

Conclusion

Majority of the male partners had high involvement in PMTCT services. Younger age and shorter duration of living together were significantly correlated with male partner involvement. However, findings showed lack of knowledge among male partners regarding HIV transmission, including the use of contraception for prevention, HIV transmission during breastfeeding in untreated mothers, and the provision of antiretroviral drugs to infected mother and baby.

Limitations

One of the major limitations of the study was its low sample size. The target sample size was not met, primarily due to the low census of pregnant patients seeking consult at the pre-labor room during the time of the COVID-19 pandemic. Another limitation was that the study was done in only one private tertiary hospital in an urban area. Hence, the findings may not be applicable to rural communities or to government hospitals.

Recommendations

A multicenter study involving multiple tertiary hospitals, lying-in centers, or public hospitals both in the urban and rural setting would be interesting to better understand the differences in the knowledge, attitudes, and practices of male partners as well as their level of involvement in the PMTCT services. A larger sample size would also increase the significance of the study.

A comprehensive strategy to increase the awareness of male partners regarding HIV transmission prevention and treatment is needed not to put to waste their high level of involvement. Despite the existence of the PMTCT program in the country, majority of the male partners were not aware of the services; hence, they were not able to self-initiate HIV testing for both himself and his pregnant partner. It is therefore recommended to improve public health promotion of PMTCT services to reach out to the male partners, highlighting the benefits of antenatal testing for both him and his pregnant partner. Online platforms such as a website that provides infographic materials are very timely in this modern age. More importantly, health-care providers should also be encouraged to educate the male partners when they accompany their pregnant wife during antenatal visits on the benefits of antenatal HIV screening and the PMTCT services.

Acknowledgments

I would like to thank my research adviser for the guidance in the process of writing this manuscript. I would also like to thank my fellow residents in training for their help during the data collection. I would like to acknowledge the hospital's in-house statistician for his outstanding work for the statistical analysis of the study.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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