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Original Research Article

Awareness, attitude and practice on prevention of mother to child transmission of human-immunodeficiency virus among pregnant women in Taungoo Township, Myanmar

Thidar Han[1]*, Kyaw Myo Tun[2]

[1]Faculty of Health and Social Sciences, University of Bedfordshire, Luton, United Kingdom
[2]Department of Health and Social Sciences, STI Myanmar University, Yangon, Myanmar

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***Correspondence:**
Thidar Han,
E-mail: thidarrhann@gmail.com

ABSTRACT

Background: Globally, about 1.3 million human-immunodeficiency virus (HIV)-positive women get pregnant once a year, and about 160,000 children are born with the HIV. This study was conducted to investigate pregnant women's awareness, attitude, and practice regarding the prevention of mother to child HIV transmission (PMTCT).
Methods: This cross-sectional study collected qualitative data from 152 pregnant women registered in the health facilities in Taungoo township. Simple random sampling was applied to cull three out of total rural health centres and systematic random sampling was exercised to recruit the required pregnant women from all registered pregnancies. The semi-structured questionnaire and statistical package for the social sciences (SPSS) version 23 were used for data collection and analysis accordingly.
Results: In overall, the pregnant women studied had good awareness (56.6%), favourable attitude (60.5%), and good practice (55.3%) on PMTCT services. 78.3% were aware of the PMTCT project and knew that a baby can be prevented from HIV transmission by an HIV mother, 57.8% agreed that counselling and testing for HIV during pregnancy are important and 85.5% were tested for HIV. The awareness was associated with the family type (p=0.049), the attitude was associated with age (p=0.048), residence (p=0.024), and frequency of antenatal visits during current pregnancy (p=0.021), and practice was associated with antenatal care delivery sites (p=0.038), husband's support for antenatal care (p=0.004) and taking antenatal services during a previous pregnancy (p=0.033).
Conclusions: Many unsatisfactory findings regarding PMTCT services were noted. So, strategic interventions and effective approaches for getting the full coverage of PMTCT programs should be strengthened.

Keywords: Awareness, Knowledge, Attitude, Pregnant women, HIV, Prevention of mother to child transmission

INTRODUCTION

Globally, about 1.3 million human-immunodeficiency virus (HIV)-positive women get pregnant once a year, and about 160,000 children were born with HIV in 2018.[1] Although the global health community, governments, and civil society organizations are advanced in HIV prevention and control, the pregnancies who have no access to HIV testing programs or other HIV-related services are too many and many HIV pregnancies do not receive treatment and management for HIV-related infections.[2] As reported by the Joint United Nations Programme on HIV/AIDS (UNAIDS) in 2010, more than half of global pregnancies did not have access to preventing services for mother-to-child transmission of HIV and did not keep their babies alive. Despite progress in the prevention of mother to child transmission (PMTCT) services, more than 20% of global pregnancies remain less access to proficient and effective PMTCT services until 2017.[3] For preventing both mothers and their babies from acquiring HIV, it is very important

to start PMTCT services before conception. The most significant source of HIV infections in infants and children is pregnant women living with HIV and the babies can be transmitted HIV during pregnancy, labour, and breastfeeding. Without proper preventive measures, the likelihood of transmission from pregnant women who are living with HIV to their babies is 15% to 45% (5% to 10% during pregnancy, 10% to 15% during childbirth, and 5% to 20% during breastfeeding). However, if HIV-positive pregnant women have timely access to PMTCT services, the HIV transmission risks of the children can be reduced to below 5%.[4] Nowadays, the comprehensive PMTCT program provides the recommended integrative HIV services by focusing on mothers and their babies. This program is mainly implemented for identifying HIV-positive pregnant women during antenatal care services, providing comprehensive HIV and maternal healthcare to HIV-positive mothers and administrating ART to mothers and initiating antiretroviral (ARV) prophylaxis to HIV exposed children. The effective implementation of this program is capable of reducing mother to child HIV transmission to less than 2%.[5] However, it is very difficult to succeed in many countries because of poor awareness, attitude and practice of pregnant women in PMTCT services. A report by Lynne, Munderi and Mofenson argued that one of the most effective ways for decreasing mother-to-child transmission of HIV is to promote maternal awareness of the PMTCT services first.[6]

In Myanmar, there was still a stable prevalence of HIV among pregnant women from 2011 to 2013 and the incidence of new HIV infections including among children and infants continues to rise.[7] Since the PMTCT services were implemented in 2005, HIV counselling, testing and referral services were integrated into the antenatal care of the health centres and lifelong ART was recommended to administer to all HIV-positive pregnant and breastfeeding women, the coverage of antiretroviral therapy among pregnant women was 77% in 2015.[8] The project coverage of PMTCT of HIV in Myanmar was increased from 10% to 30% and from 50% to 100% in 2005 and 2010 respectively.[9] A report by UNICEF showed a decline in HIV prevalence to under 0.6% in the general population of Myanmar. However, 24% of HIV mothers' babies have been facing a risk of new transmission of HIV infections from their mothers.[10] This percentage was mainly due to low awareness and poor attitude toward the PMTCT services of pregnant women and their partners, their poor practices and less access to the PMTCT services and HIV-related stigma. Besides, the low national financial investment in PMTCT awareness promotion activities is the major challenge for being successful in HIV prevention and control programmes among pregnant women.[11] Primarily, promoting the level of knowledge, attitude and practice of pregnant mothers towards PMTCT of HIV is the most cost-effective way and one of the pillars for PMTCT.[9] This study was conducted to investigate pregnant women's awareness, attitude, and practice regarding the PMTCT services. The finding of this study will be applied to the PMTCT programmers to know current gaps and the associated factors from the sides of the service consumers and to draw better health literacy promotion strategies for mitigating the risk of mother-to-child HIV transmission.

METHODS

In this cross-sectional study, a quantitative approach was employed to examine the levels of knowledge, attitude and practice of PMTCT of HIV among a single sample of pregnant women. Among 28 Townships in Bago Region, Taungoo Township was purposively selected as the study area. In this study, all registered pregnant women at public health departments such as the maternal and child health (MCH) centre and rural health centres (RHCs) were targeted. The researcher excluded or substituted the pregnancies who were unwilling to participate, did not live in Taungoo Township, registered from other townships and unregistered pregnant women during the study period. The required sample for this study was determined according to the reported prevalence (90%) of knowledge about PMTCT from a similar Ethiopian study by Tigabu and Dessie.[12]

$$n = z^2 p\ (1 - p)/d^2$$

Here, standard normal deviation (z), the confidence interval (CI) and the margin of error were specified as 1.96, 95% and 5% respectively. Accordingly, 138 pregnancies were primarily required, but this study considered the non-response rate of 10% and therefore a total of 152 pregnancies were recruited. Thereafter, the researchers based the urban/rural ratio (1:1.942) of the pregnant women population of Taungoo Township to proportionately cull the predefined sample as 34% of all registered pregnancies from MCH and 66% from RHCs. Further, the researchers randomly selected three out of the total RHCs within Taungoo Township to be a generalizable and unbiased selection of the rural pregnancy population. Thus, 52 urban pregnancies and 100 rural pregnancies were selected through a systematic random sampling technique by applying the registered numbers of the antenatal registers from MCH and the selected RHCs.

The researchers used a semi-structured questionnaire including 48 questions (12 questions for background characteristics, 9 questions for reproductive history, 8 questions for knowledge, 13 questions for attitude, and 6 questions for practice).

The researchers conducted a preliminary test on 10% (15 pregnancies) of the total 152 sample population in Yangon to determine the feasibility of the interview techniques and procedures between reviewers and participants, language appropriateness, questionnaire sensitivity, the relevancy of the study field guide and the average duration of the interview. Well-trained interviewers conducted the face-to-face interviews with the selected pregnancies separately and validated the collected data by checking and counter-checking.

In data analysis, the researchers applied an Excel sheet to make a computerized data entry and the data were analysed by using the statistical package for the social sciences (SPSS) software version 23. The categorical data were grouped according to their matching qualities and analyzed to present the outcomes in the form of frequencies and percentages while the numeric data were statistically analyzed and presented with means and standard deviations. In the scoring system, each correct or acceptable response regarding knowledge, attitude and practice of PMCTC was rated 1 point. When determining the overall levels of knowledge, attitude and practice toward PMTCT, 40% and above of total knowledge scores and 60% and above of the total attitude and practice scores were used to determine the high. Although the statistical tests were considered according to the basics of the distributed variables and their natures, the Chi-square test was mainly used to measure the significance of the associations. The statistical significance levels were determined at less than and equal to 0.05.

RESULTS

Background characteristics

Because of the responses from all recruited pregnancies, the participation rate yielded 100%. The ages of the study pregnancies were distributed in the range of 18 to 44 years and their mean age and standard deviation were 28.78±6.01 years. As forementioned, the study sample was composed of 52 (34.20%) rural pregnancies and 100 (65.80%) urban pregnancies. Of the study pregnancies, 133 (87.5%) were Buddhists and 19 (12.5%) were from other religions which were Islam (3.3%), Christian (7.2%) and Hindu (2%). Among the study pregnancies, 40.1% passed primary school levels, 52% passed middle and high school levels and 7.9% were graduated. The current occupational types of the pregnancies we studied included housewives (67.1%), causal workers (13.2%), shopkeepers (10.5%), farmers (5.9%) and government/private staff (3.3%). 65.8% of the study pregnancies' monthly family incomes were under 1,000,000 MMK and 34.2% were above 1,000,000 MMK. Almost all (99.3%) of the study pregnancies were married and their husbands worked in the types of occupations like causal workers (44.1%), office staff (21.7%), businessmen (17.1%), and farmers (14.5%). Of the pregnancies we studied, 62.5% lived in the nuclear family type and 37.5% in the extended family type.

Reproductive health history

About half (49.3%) of the study pregnancies gave birth 2-4 times, 41.4% gave birth 5 and more times and a few (9.2%) gave birth once. Out of all pregnancies we investigated, 25.7% had one alive child, 19.1% had two alive children, 5.3% had three alive children and 7.2% had four and more alive children, but 42.8% had no previous pregnancy. Among the study pregnancies, nearly half (49.3%) took antenatal care services during the last pregnancy, and 8.6% did not take antenatal care during the last pregnancy. Besides, 87.5% received antenatal care during current pregnancy from basic health staff while 12.5% from medical doctors or specialists. Further, 61.8% took their antenatal care at the RHCs, 23.7% at MCH, 9.9% at the township hospital and 4.6% at private clinics.

Knowledge about PMTCT

When assessing the knowledge about PMTCT, 61.2% of the study pregnancies were aware of PMTCT activities, 49.3% were aware of HIV counselling services, 98.7% were aware of HIV testing services at the healthcare facilities and 78.3% knew that a baby can be preventable from vertical transmission of HIV. When assessing four main ways of HIV transmission, the responses of the study pregnancies were sexual contact with an HIV-infected person (79.6%), sharing HIV-infected needles (70.6%), transfusion of HIV infected blood (71.1%), and vertical transmission from HIV-infected mother to child (69.7%). In the exploration of time to transmit HIV from mother to child, the study pregnancies responded that an HIV-infected mother can transmit HIV to her baby during pregnancy (69.7%), childbirth (67.8%) and breastfeeding (68.4%). For the question "what are the main functions of PMTCT?", the responses of the study pregnancies included HIV testing during antenatal care (98.7%), HIV counselling during antenatal care (40.03%), contraception for unintended pregnancy (38.2%), provision of antiretroviral regimen (98.7%) and support for infant feeding (26.97%). In examining the knowledge about the prevention of vertical transmission, the response rates of the study pregnancies were 98.7% for taking anti-HIV drugs by both mother and child, 27.6% for careful choice of delivery methods, and 26.3% for choice of feeding technique.

Regarding the overall knowledge about PMTCT services, 56.6% of the total study pregnancies were awarded a 40% and above knowledge score which meant a high knowledge level while 43.4% had a low knowledge level because they got less than 40% knowledge score. Additionally, 19.7% of urban pregnancies and 36.9% of rural pregnancies we studied had high knowledge score levels.

Attitude towards PMTCT

Of all study pregnancies, 98.02% agreed that every pregnant woman should be tested for HIV, 57.8% agreed that HIV testing during pregnancy is important and valuable for both mother and child, 49.3% agreed that HIV counselling should be received before HIV testing, 61.2% agreed that a baby can be prevented from HIV transmission of his/her HIV-infected mother, and 55.9% agreed that the husbands should participate in the PMTCT services. In the agreement on the vertical transmission of HIV, the study pregnancies stated their agreement that vertical transmission can occur during pregnancy (71.1%), childbirth (69.7%) and breastfeeding

(68.4%). Of all pregnancies we studied, for infants of HIV-positive mothers, 12.5% agreed that exclusive breastfeeding for six months is the best choice, 13.8% agreed that exclusive breastfeeding for six months is nutritionally complete, 7.24% agreed that complementary feeding after six months is necessary and 19.74% agreed that mixed feeding had a risk of HIV infection. Besides, 89.5% had a favourable attitude that taking adequate PMTCT services can reduce the risk of vertical transmission of HIV from HIV-positive mother to child. Overall, 60.5% of the total pregnancies we studied were awarded a 60% and above attitude score and defined as the group who had a favourable attitude whereas 39.5% with a less than 60% attitude score were in the group of unfavourable attitudes. Besides, favourable attitude score levels were found among 16.4% of urban pregnant women and 44.1% of rural pregnant women we studied.

Practice on PMTCT

When investigating the practice of PMTCT among the study pregnancies, 85.5% received HIV testing during antenatal care, 36 (23.7%) were tested for HIV during the first trimester of current pregnancy, 86 (56.6%) during the second trimester of current pregnancy and 8 (5.3%) during the third trimester of current pregnancy. Besides, 60 (39.5%) were counselled before HIV testing, (28) 18.4% were counselled after HIV testing, and (43) 28.3% were counselled before and after HIV testing during antenatal care. Further, 73.7% of the study pregnancies shared HIV results with their partners and 57.2% of the husbands of the study pregnancies were tested for HIV. Additionally, the proportions of the study pregnancies who participated in a community conversation on HIV/AIDS and discussed PMTCT services among peers and their husbands were 37.5% and 55.3% respectively. Regarding the overall practice of PMTCT services, 55.3% of the study pregnancies got 60% and above of the total scores which meant good practice whilst 44.7% got less than 60% of the total score which meant poor practice. Further, 22.4% of urban pregnancies and 32.9% of rural pregnancies we investigated had good practices in PMTCT services.

Associated factors

Here, a good knowledge level regarding PMTCT activities was more likely to be found in the study pregnancies who live in the nuclear family types than those who live in the extended family types and a significant association was noted between knowledge levels and the family types of the pregnancies (p=0.049). Although the proportions of knowledge score levels were variable according to the different background characteristics (age, residence, religion, educational status, occupation, family income per month and occupation of the husband) and reproductive history of the study pregnancies, no statistically significant association was found.

Among the study pregnancies, those aged under 29 years (p=0.048), rural pregnancies (p=0.024) and those who received antenatal care visits (three times and above) (p=0.021) were more likely to have favourable attitudes towards PMTCT services than their counterparts. However, there were no significant associations between the attitude towards PMTCT services and other background characteristics such as family monthly income, religion, educational status, occupation, marital status, type of family, number of family members, and husband's occupation. In determining the statistical associations between the practices of PMTCT and background characteristics of the study pregnancies, taking antenatal care during a previous pregnancy (p=0.033), the place of taking antenatal care (p=0.038) and the support of their husband for antenatal care (p=0.004) were statistically associated with practice on PMTCT, but no significance was not found among others.

Table 1: Background characteristics and reproductive history of the study pregnancies (n=152).

Background characteristics	Frequency	Percentage
Age (years) (mean±SD=28.78±6.1)		
<20	6	3.9
20-29	78	51.3
30-39	58	38.2
>40	10	6.6
Residence		
Urban	52	34.2
Rural	100	65.8
Religion		
Buddhist	133	87.5
Others	19	12.5
Educational status		
Primary school level	61	40.1
Middle and high school level	79	52
Graduate	12	7.9

Continued.

Background characteristics	Frequency	Percentage
Occupation		
Housewife/dependent	102	67.1
Casual worker	20	13.2
Shopkeeper	16	10.5
Farmer	9	5.9
Office staff	5	3.3
Family income per month (MMK)		
Median (±IQR)=205,000 (150,000-300,000)		
<1,000,000	151	99.3
>1,000,000	1	0.7
Current marital status		
Married	151	99.3
Divorced	1	0.7
Husband's occupation		
Businessman	26	17.1
Casual worker	67	44.1
Farmer	22	14.5
Office staff	33	21.7
Others	4	2.6
Type of family		
Nuclear	95	62.5
Extended	57	37.5
Reproductive history		
Parity		
Para 1	63	41.4
Multipara	75	49.3
Grand multipara	14	9.2
Number of alive children		
None	65	42.8
One	39	25.7
Two	29	19.1
Three	8	5.3
Four and above	11	7.2
Frequency of antenatal visit (current pregnancy)		
One	34	22.4
Two	24	15.8
Three	30	19.7
Four and above	64	42.1
Antenatal care during last pregnancy		
Yes	75	49.3
No	13	8.6
No previous pregnancy	64	42.1
Who care current pregnancy?		
Basic health staff	133	87.5
Medical doctor or specialist	19	12.5
Where do you take antenatal care?		
Rural health centre	94	61.8
Township hospital	15	9.9
Private clinic	7	4.6
MCH	36	23.7
Husband's support for antenatal care		
Yes	123	80.9
No	29	19.1

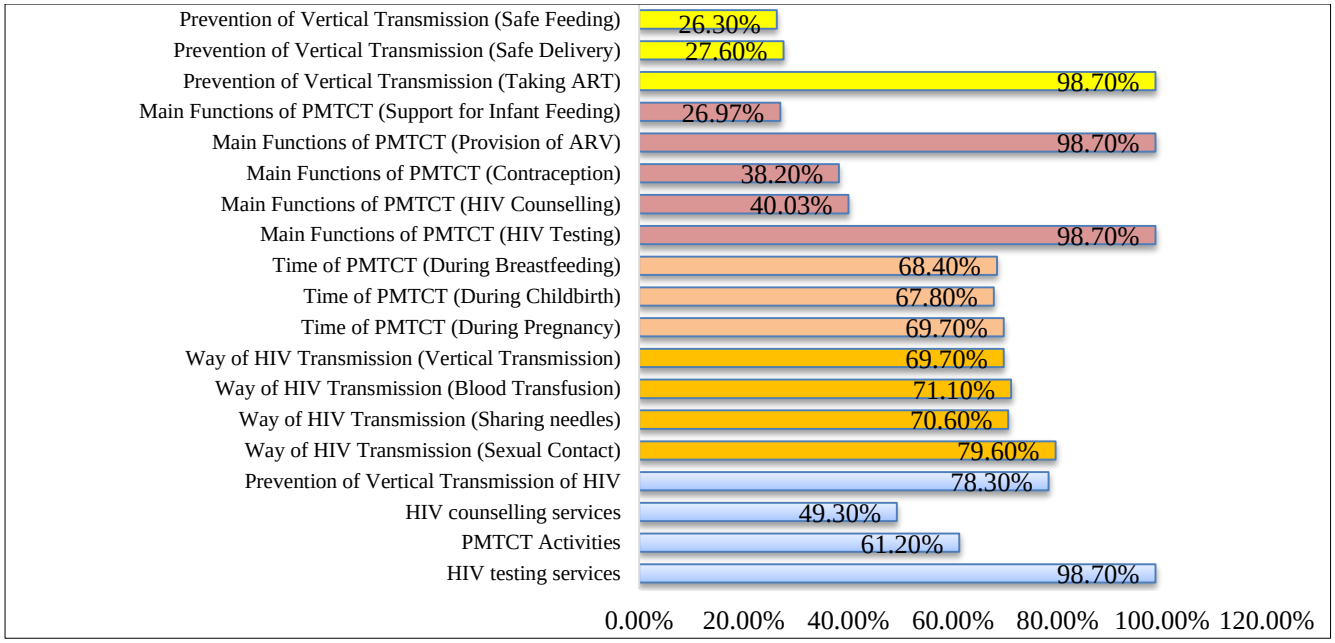

Figure 1: Status of good awareness on the nature and services of PMTCT program among study pregnancies (n=152).

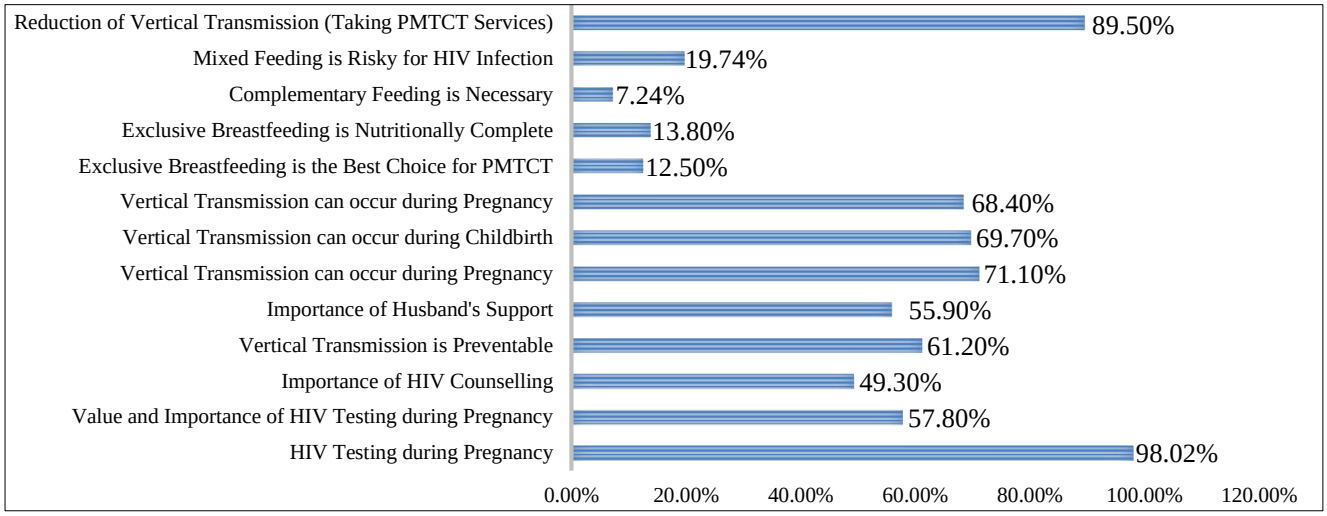

Figure 2: Status of positive attitudes toward the nature and services of PMTCT program among study pregnancies (n=152).

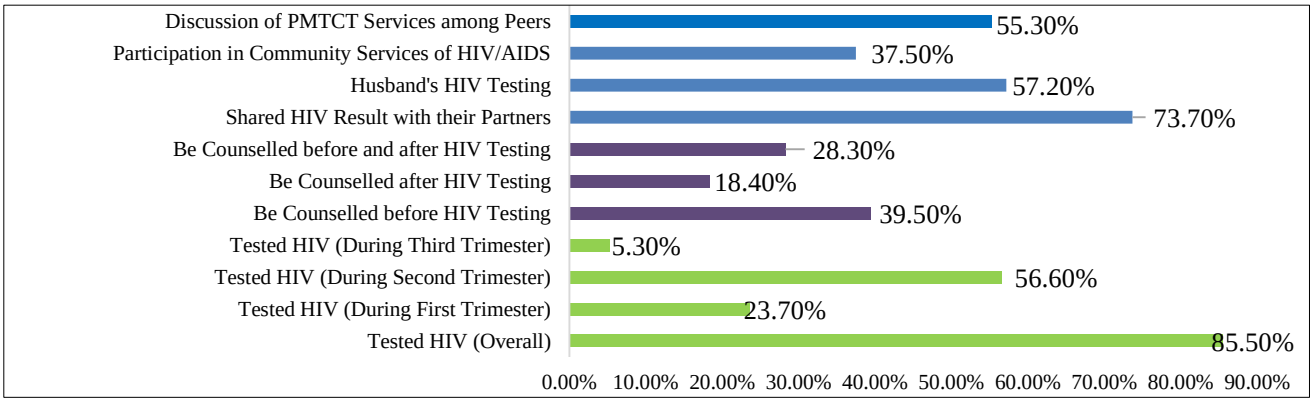

Figure 3: Status of good practice on PMTCT activities among study pregnancies (n=152).

Table 2: Associated factors of awareness, attitude and practice of PMTCT services among study pregnancies (n=152).

Factors	Awareness on PMTCT			Attitude toward PMTCT			Practice on PMTCT		
	Good (n)	Poor (n)	P value	Good (n)	Poor (n)	P value	Good (n)	Poor (n)	P value
Age group (years)									
<29	44	40	0.64	59	25	0.048*	43	41	0.468
≥30	42	26		33	35		41	27	
Residence									
Urban	30	22	0.842	25	27	0.024*	34	18	0.07
Rural	56	44		67	33		50	50	
Religion									
Buddhist	78	55	0.174	80	53	0.802	72	61	0.459
Others	8	11		11	8		12	7	
Educational status									
Primary	35	26	0.718	38	23	0.727	32	29	0.349
Middle and above	51	40		54	37		52	39	
Occupation									
Dependent	58	44	0.559	62	40	0.24	56	46	0.173
Employed	28	22		30	20		28	22	
Family income (MMK)									
<1,000,000	60	40	0.379	62	38	0.418	66	34	0.367
>1,000,000	26	26		27	25		28	24	
Type of family									
Nuclear	61	34	0.049*	52	43	0.169	51	44	0.256
Extended	25	32		40	17		33	24	
Parity									
Para 1	35	28	0.483	44	19	0.134	39	24	0.183
Multipara	51	38		48	41		45	44	
Number of alive children									
None and one	58	46	0.887	64	40	0.303	62	42	0.468
Two and above	28	20		28	20		22	26	
Frequency of antenatal visit (current pregnancy)									
Three and less	46	42	0.202	55	33	0.021*	46	42	0.317
Four and above	40	24		37	27		38	26	
Antenatal care during last pregnancy									
Yes	44	31	0.701	40	35	0.109	41	34	0.033*
No	42	35		52	25		44	43	
First antenatal visit (current pregnancy)									
1st trimester	48	41	0.704	57	32	0.566	51	38	0.256
2nd/3rd trimester	38	25		35	28		33	30	
Who care current pregnancy?									
Basic health staff	74	59	0.536	80	53	0.802	71	62	0.218
Doctor/specialist	12	7		12	7		13	6	
Where did antenatal care take?									
Health facilities	72	48	0.507	78	52	0.712	69	61	0.038*
Hospital	14	8		14	8		15	7	
Husband's support for PMTCT service									
Yes	68	55	0.507	74	49	0.85	75	48	0.004*
No	18	11		18	11		9	20	

*Statistically significance

DISCUSSION

HIV transmission from HIV-positive mother to child is a common route of HIV spread and one major cause of increasing HIV incidence. Vertical transmission of HIV is preventable, for which the pmtct program is effective. For

successful implementation of the pmtct program, it is very important to evaluate how pregnant women are aware of pmtct services, how they perceive the objectives and functions of PMTCT and how they participate in the pmtct activities. This study was conducted to evaluate the levels of awareness, attitude and practices on pmtct services and intended to support the scientific information that might be useful for the establishment of four pillars of the pmtct program and the development of the PMTCT's applicability in the maternal and child health, beyond HIV.

In the finding of this study, about four-fifths of the study pregnancies knew that the vertical transmission of HIV can be preventable for a baby. This number was greater than the numbers revealed among the pregnancies of other similar Southeast Ethiopia studies by Kassa et al and Bhise and Deo.[13,14] In the revelations of their studies, less than 6 in 10 pregnancies knew that the PMTCT service could reduce the transmission risk of the HIV-infected mother in a baby. In this finding, although the vast majority of pregnancies were aware of the HIV testing services of PMTCT, around half of the pregnancies knew about other PMTCT-associated services and HIV counselling services. When comparing this finding with the result of a similar South African study, more knowledge about PMTCT services was found among the Myanmar pregnancies than the African pregnancies. Among African pregnancies studied by Kerr, only 12% had well knowledge in respect of PMTCT services, but Kerr's study could not represent many African pregnancies because it was conducted among pregnancies attending a clinic in Durban. Further, Kerr's study discussed that many African pregnancies were low in knowledge levels concerning PMTCT but high in good perception toward PMTCT.[15]

Besides, among pregnancies in this study, about two-thirds knew the risk of HIV transmission from an HIV-positive mother to her baby and three main routes of vertical transmission of HIV. In investigating the main activities of PMTCT, about two-fifths could provide the correct responses to the HIV counselling service and support for unwanted pregnancies of the HIV-positive couples and about three-fourths did not know about the supportive activities for infant feeding and the preventive measures of vertical transmission especially the choice of delivery methods and feeding techniques. In the judgement of overall knowledge level, about half were defined as low level. These findings were comparable with a recent cross-sectional Indian study on 366 pregnant women.[16] Nonetheless, providing more information about the nature of the PMTCT and associated activities should be enforced to promote a better understanding of pregnant women concerning preventive measures for HIV/ALDS.

In the revelations of this study regarding attitude toward PMTCT services, the vast majority of the pregnancies had positive attitudes toward HIV testing of both pregnant women and their husbands during antenatal care and about half perceived the benefits of HIV counselling and testing during pregnancy. Besides, three-fifths also had good attitudes toward the advantages of HIV prevention in a baby by the PMTCT services and the participation of husbands in the PMTCT services. Further, approximately 15 in 100 pregnancies we studied had a positive attitude toward the importance of the choice of feeding methods for the likelihood of HIV transmission in children from their HIV-positive mothers. In the analysis of the overall attitude level toward PMTCT services, three-fifths had good attitudes. Here, there were slight differences between the findings of this study and another study by Kerr reporting that the proportions of study pregnancies having good attitudes were 97.6% for the effectiveness of HIV testing, counselling, and preventive services of PMTCT and 83.1% for good support of PMTCT.[15] These discrepancies might be because the implementation of the PMTCT program in South Africa was earlier than in Myanmar and the African pregnancies received the advantages of the PMTCT services earlier than the Myanmar pregnancies. However, the attitude-related findings of this study were very similar to the attitude-related findings of an Indian study by Mukhtar et al which reported that 96.4% agreed to be counselled and tested for HIV, 77.3% agreed to the importance of HIV testing in husbands, 90.2% agreed to the effectiveness of PMTCT in reducing the HIV transmission risk of a baby and 12.5% agreed to the importance of feeding choice of HIV-positive mothers for their infants.[16]

This study showed that 85.5% of the study pregnancies were tested for HIV through the procedures of PMTCT. This practice proportion was slightly lower when compared with the practice proportion (91.5%) resulting from a recent similar Indian study.[16] However, there was a low proportion (23.7%) of pregnancies we studied who had taken the HIV testing service of the PMTCT program during the first trimester and there was a high proportion (76.3%) who did not take early HIV testing during pregnancy. This high proportion meant that the PMTCT interventions could not be effective because the World Health Organization recommended that the ARV initiation in HIV-infected pregnancies should be started during the early date of the first trimester as the effectiveness of early diagnosis of HIV and early initiation of ARV in HIV-positive pregnancies was noted in several evidence.[17,18] Another notable point of the finding in this study was that there was a difference between the HIV testing rate and the HIV counselling rate among study pregnancies. To the best of the researcher's knowledge, this issue may be concerned with the provider sides of the PMTCT program and this might be because the PMTCT providers tested the HIV status of the pregnancies without any counselling. For this difference, more empirical research should be conducted. Similarly, a study by Kerr recommended that more HIV counselling services should be extended among African pregnant women.[15]

Concerning the associated factors of knowledge, attitude and practice of the PMTCT services among the study pregnancies, types of family influenced the knowledge level, age, residence and frequency of antenatal visit

influenced the attitude level and antenatal care of previous pregnancy, places of antenatal care provision and husbands' supports influenced the practice level. These associated factors should be considered in promoting the knowledge, attitudes and preventive practices of pregnant women concerning strengthening the PMTCT services.

CONCLUSION

Many unsatisfactory findings regarding PMTCT services were noted among the study pregnancies. Besides, the overall good knowledge level (56.6%), the overall favourable attitude level (60.5%) and the overall good practice level (55.3%) concerning the PMTCT services were undesirable and need to be promoted. So, strategic interventions and effective approaches for getting the full coverage of PMTCT programs should be strengthened. Likewise, effective provision of health education, accessibility of quality antenatal care services, and male partner involvement should be advanced.

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REFERENCES

1. World Health Organization (WHO). Prevention of Mother-to-Child Transmission (PMTCT). 2020. Available at: https://www.who.int/gho/hiv/epidemic_response/PMTCT_text/en/. Accessed on 15 March 2020.
2. World Health Organization (WHO). HIV/AIDS. 2019. Available at: https://www.who.int/hiv/topics/mtct/about/en/. Accessed on 22 January 2020.
3. UNAIDS. Global HIV/AIDS overview. 2018. Available at: https://www.hiv.gov/federal-response/pepfar-global-aids/global-hiv-aids-overview. Accessed on 22 January 2020.
4. Avert. Prevention of Mother-to-Child Transmission (PMTCT) of HIV. 2019. Available at: https://www.avert.org/professionals/hiv-programming/prevention/prevention-mother-child. Accessed on 03 March 2020.
5. Ekubagewargies DT, Mekonnen HS, Siyonum TM. Assessment of Knowledge, Attitude, and Practice of HIV Positive Mothers on Antiretroviral Treatment towards Infant Feeding in Gondar Town Health Institutions, North West Ethiopia. Int J Paediatrics. 2017;19(9).
6. Lynne M, Munderi M, Mofenson P. Safety on antiretroviral prophylaxis of perinatal transmission of HIV infected pregnant women and their children. J AIDS. 2002;30(2):200-5.
7. National AIDS Programme. Global AIDS Response Progress Report Myanmar. 2014. Available at: https://www.unaids.org/sites/default/files/country/documents/MMR_narrative_report_2014.pdf. Accessed on: 03 March 2020.
8. World Bank. Health Nutrition and Population Statistics. 2019. Available at: https://www.populationpyramid.net/hnp/antiretroviral-therapy-coverage-for-pmtct-of-pregnant-women-living-with-hiv/2015/myanmar/. Accessed on: 03 March 2020.
9. World Health Organization Measuring the Impact of National PMTCT Programmes. 2012. Available at: https://apps.who.int/iris/bitstream/handle/10665/75478/9789241504362_eng.pdf?sequence=1. Accessed on: 21 January 2020.
10. UNICEF Myanmar. HIV/AIDS. 2019. Available at: https://www.unicef.org/myanmar/health-and-nutrition/hiv-and-)aids. Accessed on: 13 March 2020.
11. Avert. HIV/AIDS in Myanmar. 2018. Available at: https://www.avert.org/professionals/hiv-around-world/asia-pacific/myanmar. Accessed on: 13 March 2020.
12. Tigabu W, Dessie G. Knowledge, Attitude and Practice towards Prevention of Mother to Child Transmission (PMTCT) of HIV/AIDS among Pregnant Mothers at Nigist Eleni Mohammed Memorial General Hospital (NEMMGH), Hosanna, Southern Ethiopia. J HIV/AIDS Infect Dis. 2018;5:1-11.
13. Kassa S, Chala D, Eshetu E, Morka G, Olani G, Lette A, et al. Knowledge, Attitude and Practice towards Prevention of Mother to Child Transmission of HIV among Pregnant Women Attending Antenatal Care in Southeast Ethiopia. Nurs Healthcare Int J. 2019;3(5).
14. Bhise JD, Deo D. Awareness and Knowledge of Mother-To-Child Transmission of HIV/AIDS Among Pregnant Women of Rural Tertiary Care Hospital. Nat J Comm Med. 2015;6(4):491-5.
15. Kerr J. Assessment of knowledge, attitude and practice of pregnant women in respect of prevention of mother-to-child transmission (PMTCT) of HIV/AIDS at a selected antenatal clinic Durban, South Africa. ResearchSpace of University of KwaZulu-Natal. 2015. Available at: http://hdl.handle.net/10413/14613. Accessed on: 13 March 2020.
16. Mukhtar M, Quansar R, Bhat SN, Khan SMS. Knowledge, attitude and practice regarding mother-to-child transmission of HIV, its prevention, and associated factors among antenatal women attending a health care facility in district Srinagar, North India: a cross-sectional study. Int J Community Med Public Health. 2020;7:2:622-7.

17. Chintu N, Mulindwa J, Benjamin J, Chi BH, Stringer JSA. Optimal Time on HAART for Prevention of Mother-to-Child Transmission of HIV. NIH Public Access. 2013;58:224-8.
18. World Health Organization. Antiretroviral Drugs for Treating Pregnant Women and Preventing HIV Infection in Infants. Geneva: World Health Organization. 2010. Available at: https://apps.who.int/iris/handle/10665/75236. Accessed on: 13 March 2020.

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