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Utilization and Factors Associated with Uptake of Prevention of Mother- To - Child Transmission (PMTCT) of HIV Services among Antenatal Clinic Attendees at a Tertiary Health Facility in Akure, Ondo State

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Author's contribution

The sole author designed, analysed, interpreted and prepared the manuscript.

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ABSTRACT

Background: Prevention of mother-to-child transmission of HIV (PMTCT) programmes provide antiretroviral treatment to HIV-positive pregnant women to reduce the likelihood of their infants acquiring the HIV. However despite concerted efforts to scale-up PMTCT services in Nigeria, the coverage and uptake of the service by pregnant women remain low.
Aim/Objective: This study was carried out to assess the utilization and factors associated with the uptake of PMTCT Services among pregnant women at a tertiary health facility in Akure, Ondo State.
Methodology: This research was an institutional based descriptive cross-sectional study conducted over a period of one month (May 2018). The study population included pregnant women accessing antenatal care at the University of Medical Sciences Teaching Hospital, Akure, Ondo State. Data was collected using interviewer administered questionnaire and analyzed using SPSS Windows

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20.The main outcome measured was the utilization of PMTCT services. Factors associated with its utilization was assessed using binary logistic regression. Statistical significance was set at $P<0.05$.
Results: A total of 400 pregnant women were interviewed with 100% response rate. The mean age of the women was 32years ± 4.8.The majority of them with their spouses were educated up to the tertiary level. Their mean gestational age was 28weeks±2.2 standard deviation. Among the respondents, 252 (63.2%) had been tested for HIV in the index pregnancy while 148 (36.8%) were not yet tested, those not tested identified lack of counsellors as their main reason. The average time spent before the patients were seen at the clinic was reported to be too long in 287 (71.7%), so 368 (92.5%) of the women were not satisfied with the service. Factors found to be positively associated with PMTCT utilization were the educational level of the women and their partners which could be in favour of their utilizing PMTCT services and inadequate counsellors which may not be in favour of utilization of the service.
Conclusion: All the respondents did not utilize the PMTCT services in the index pregnancy and the main reason being inadequate number of counsellors. There is the need to improve the quality of PMTCT services in the study setting.

Keywords: Utilization; uptake; PMTCT services; HIV; pregnant women.

1. INTRODUCTION

Human Immunodeficiency Virus (HIV) can be transmitted from an HIV-positive woman to her child during pregnancy, childbirth and breastfeeding. Globally, Mother-to-child transmission (MTCT) accounts for over 90% of new HIV infections among children [1].

While mother-to-child transmission of HIV has almost been eliminated in many high-income countries, it remains an important source of new HIV infections in Sub-Saharan African countries. Transmission of HIV to children has become a critical health challenge that threatens to undermine the gains of child survival strategies in the African continent. Nearly all young children newly infected with HIV are infected through mother-to-child transmission (MTCT); about 83% of the estimated 150, 000 children who were newly infected with HIV in 2015 were in the WHO African Region [2].

According to UNAIDS 2017 report about 26.9% of all cases of mother-to-child transmission (MTCT) of HIV in the world occur in Nigeria [3]. The report further noted that only 34.7% of pregnant women were tested for HIV as part of their antenatal care and just 32% of pregnant women living with HIV received antiretroviral treatment to prevent mother-to-child transmission [3]. As such, reducing mother-to-child transmission remains a major priority for HIV response in Nigeria.

Ondo State is located in Nigeria's South West geopolitical zone with an estimated population size of 3.4million (2006 census) and 18 Local Government Areas [4]. The HIV prevalence in the state was 4.3% in 2012 with an increase burden of MTCT of HIV [4]. This high burden of MTCT of HIV is due to high rates of heterosexual transmission, high prevalence of HIV in women of reproductive age, high total fertility rate, characteristically prolonged breastfeeding culture, suboptimal infection prevention measures during labour and delivery and limited access to general HIV prevention interventions [5]. Prevention of mother-to-child transmission of HIV (PMTCT) programmes provide antiretroviral treatment to HIV-positive pregnant women with the aim of reducing the risk to their infants. Without treatment, the likelihood of HIV passing from mother-to-child is 15% to 45% [2]. However, treatment with highly active antiretroviral therapy (HAART) and other effective PMTCT interventions can reduce this risk to below 2% [2]. In Nigeria, effective PMTCT programmes require women and their infants to have access to and to take up a cascade of interventions including antenatal services and HIV testing during pregnancy; use of antiretroviral treatment (ART) by pregnant women living with HIV; safe childbirth practices and appropriate infant feeding; uptake of infant HIV testing and other post-natal healthcare services [6].

Studies done in Semey, Central Asia and South Africa have shown that the major barriers to the uptake of PMTCT services are knowledge about HIV and PMTCT, HIV stigma, cultural beliefs and lack of male involvement [7,8]. According to a study carried out by Mutel in Mali, West Africa in 2011, shortages of PMTCT staff, interruptions in treatment and supplies of medical equipment, as well as a shortfall in counselling services, all act

as barriers to PMTCT service [9]. These factors often mean long waiting times for post-test counselling and many leave without getting their HIV test results [9]. Poor counselling often results in the transmission of incomplete knowledge, which can impede on the effectiveness of PMTCT programmes.

However despite concerted efforts to scale-up PMTCT services in Nigeria, the coverage and uptake of the service by pregnant women remain low and unevenly distributed. To properly scale up PMTCT programme in the country, studies are needed to assess the level of utilization and the possible factors that may be affecting the uptake of existing PMTCT services, this will further assist policy making, planning and advocacy about prevention of mother –to- child transmission of HIV. This formed the basis for this study.

2. METHODOLOGY

2.1 Study Design

It was an institutional based descriptive cross-sectional study which was carried out to determine the utilization and the factors affecting the uptake of mother-to-child transmission of HIV among pregnant women. The study was conducted at the University of Medical Sciences Teaching Hospital, Akure which is a tertiary health facility located in the heart of the town serving a population of about one million people. This facility is involved in HIV screening and provision of prevention of mother-to-child - transmission services. The study population included only pregnant women attending the antenatal clinic at the facility over a period of one month (1^{st}-31^{st} May 2018).

2.2 Ethical Consideration

Ethical approval was obtained from the University of Medical Sciences Teaching Hospital, Akure Ethics Committee. Written informed consent was obtained from each study participant after reading the consent form which contained information about what the study was all about and the benefit to the participants. The purpose of the study and the rights of the participant to withdraw at any time was discussed prior to the interview. The questionnaire did not bear any name of the participant and confidentiality of the information obtained was ensured throughout the interview.

2.3 Sampling Technique

The sample size was calculated using the formula: $N= z^2pq/d^2$

where: z=Standard normal deviate set at 1.96
p=prevalence of PMTCT utilization was taking as 50% .
d=A confidence level of 95% was used with a tolerance margin set at 5%.
$N= (1.96)^2 \text{ X } 0.5\text{X } 0.5 /(0.05)^2 = 384$, this was approximated to 400.

A systematic sampling technique was used to select the 400 pregnant women who participated in the study by using the antenatal log book where a total of 800 pregnant women were estimated to be seen at the antenatal clinic for one month based on previous records. The sampling fraction/interval was calculated by dividing the total population of the pregnant women (800) per month by the sample size (400) giving an interval of 2, every second woman was therefore interviewed.

2.4 Data Collection

Data was collected using interviewer administered questionnaire by research assistants who had a day training on the research tool. The questions were adapted partly from the Nigeria Demographic Health Survey 2013 [16] and from the study of Hailu M, et al. 2016 [14] who did a similar study in Sebeta Town, Central Ethiopia. The questions consisted of mainly close-ended questions but also had some open-ended questions addressing the respondents socio-demographic characteristics (age, marital status, tribe, religion, occupation, educational status); educational level and the occupation of the partners and their HIV testing status; reproductive history, knowledge on mother-to-child-transmission of HIV, Utilization and experience of PMTCT services (if they accept to be tested for HIV, if they have been tested, if they received PMTCT services, satisfaction with the PMTCT services, partners HIV status and their reasons for accepting screening), information on the barriers to the uptake of PMTCT services were all obtained.

2.5 Data Management

Data obtained was entered using SPSS Windows 20 by in putting all the variables, this was carefully checked to ensure all variables had

been entered before the analysis. For the descriptive aspects of the analysis, frequency distributions were generated for all categorical variables. Means and standard deviations were determined for quantitative variables. The main outcome variable in this study was PMTCT service utilization. It was measured by participants who responded to having been counselled, offered voluntary HIV testing and took the HIV test.

Binary logistic regression was performed to identify socio-demographic factors independently associated with dependent variable. Strength of association was measured using odds ratio and 95% confidence intervals, P value < 0.05 was considered statistically significant.

3. RESULTS

3.1 Socio-demographic Characteristics of the Respondents

The socio-demographic characteristics of the respondents showed that 184 (46.0%) were within the age range of 20-29years, 200 (50.0%) were within 30-39years and 16 (4.0%) were within 40-49years. The mean age was 32years±4.8 standard deviation. Majority of the women were married (96%), they were mostly Yorubas and most of them practiced Christianity as a religion (91.6%). Most of the women (77.1%) and their partners (79.2%) had tertiary education but while trading constituted the largest category of occupation (40.8%) of the women, their husbands were mostly civil servants (65.4%).

3.2 The Reproductive History of the Respondents

Most of the pregnant women were between the gestational ages of 20-30weeks, 207 (51.8%) and their mean gestational age was 28weeks±2.2 standard deviation. Among these respondents, 144 (36.0%) were primigravidae and 256 (74.0%) were multigravidae. Other details are as shown in Table 1.

3.3 Utilization of PMTCT Services among the Respondents and their Partners

Regarding utilization of PMTCT services among the respondents, 252 (63.2%) had been tested for HIV in the index pregnancy while 148 (36.8%) were not yet tested. Among those who were not tested, 55(37.2%) attributed this to lack of counsellors. Other reasons included unavailability of HIV strips, lack of knowledge about HIV, lack of interest, fear of knowing their status while 10 (6.7%) of them said they were not psychologically ready. Willingness to disclose status if positive and their partners attitude to HIV testing are as shown in Table 2.

Table 1. The Reproductive history of the respondents

Variables	Frequency (n)	Percentage (%)
Gestational age		
<20wks	47	11.8
20-30wks	207	51.8
31-40wks	146	36.5
Parity		
Primigravidae	144	36.0
Multigravidae	256	64.0
No of living Children		
None	144	36.0
One	104	26.1
Two	91	22.8
Three	45	11.1
Four or more	16	4.0
Reasons for visiting the facility		
HIV testing	59	14.8
HIV drugs	13	3.2
Routine checking of baby	328	82.0
Number of previous visits		
One	36	9.0
Two	92	23.0
Three	155	38.8
Four or more	117	29.3

Table 2. Utilization of PMTCT Services among the respondents and their partners

Factors	Status	Frequency n (%)
Respondents tested in the index pregnancy	Yes	252(63.2)
	No	148(36.8)
Reasons for not testing if No	No HIV stripes	13(8.7)
	Lack of counsellors	55(37.2)
	Lack of knowledge about HIV	30(20.3)
	Lack of interest	26(17.6)
	Fear of knowing your status	14(9.5)
	Not psychologically prepared	10(6.7)
Respondents accepting to test in current pregnancy	Yes	327(81.7)
	No	73(18.3)
Will you disclose your status to your partner	Yes	245(61.3)
	No	82(20.5)
	Don't know	73(18.3)
Will you advice other women to be tested	Yes	327(81.7)
	No	73(18.3)
If yes, what are your reasons	To know their status	259(64.7)
	To prevent baby from HIV	68(17.0)
Husband attitude to testing in pregnancy	Agreed I should be tested	184(46.0)
	indifferent	164(41.0)
	I don't know	52(13.0)
Respondents partner previously tested	Yes	274 (68.4)
	No	126(31.6)
Reasons for partner not tested	Lack of time	22(17.5)
	Partner not willing to be tested	13(10.3)
	Lack of partner awareness about HIV and PMTCT	28(22.2)
	Fear of stigmatization and discrimination	1(0.8)
	I don't know	62(49.2)

Table 3. Perception of respondents about the quality of PMTCT services

Factors	Status	Frequency n (%)
Opinion about PMTCT service	Needs improvement	187(46.5)
	Very poor	179(44.6)
	Good	35(8.8)
***Reasons for poor use of PMTCT services**	Inadequate counseling	279 (76.4)
	Lack of friendliness of health workers	108(29.6)
	Long waiting time to see a counselor	64(17.5)
Average time spent to be attended to	Too long	287(71.7)
	Reasonable time	102(25.5)
	Very short time	11(2.8)
Average time spent to see counsellor	<30 mins	41(10.3)
	30-60mins	307(76.8)
	60-90mins	13(3.3)
	>90mins	39(9.8)
Average time spent with counselor	<5 mins	27(6.8)
	5-10 mins	324(81.1)
	10-30 mins	35(8.8)
	> 30 mins	14(3.3)
Are you satisfied with the service	Yes	32(7.5)
	No	368(92.5)
Reasons if not satisfied	Mistreatment from health workers	4(1.0)
	Lack of competent care	4(1.0)

Factors	Status	Frequency n (%)
	Long waiting time	360(98.0)
Will you recommend PMTCT	Yes	392(98.0)
	No	8(2.0)
Reasons for not recommending	Poor facilities	7(87.5)
	Its confidential	1(12.5)
Reasons for recommending	To know their status	28(7.0)
	To prevent baby from HIV	372(93.0)

**multiple responses obtained*

Table 4. Binary logistic regression predicting respondents utilization of PMTCT

Predictor	*P*	Odds ratio	95%CI
Age	0.54	1.46	0.75-2.84
20-29			
• 30-39			
40-49			
Marital status	0.07	4.67	1.53-14.25
single			
•married			
Religion	0.99	1.06	0.31-3.65
•Christian			
Islam			
Traditional			
Level of education	0.00	4.82	2.43-9.57*
primary			
secondary			
•tertiary			
Occupation of the woman	0.64	1.08	0.46-2.56
unemployed			
•trading			
civil servants			
Husband_level education	0.00	7.65	3.77-15.52*
primary			
secondary			
•tertiary			
Occupation_of_husband	0.24	3.00	0.48-18.68
unemployed			
trading			
•civil servants			

*•reference category used for the categorical variables, *Significant values at P<0.05 and 95% Confidence Interval*

3.4 Perception of Respondents about the Quality of PMTCT

Of all the respondents 187 (46.5%) stated that the quality of services need improvement, 179 (44.6%) stated that the services are very poor while 35 (8.8%) indicated that the services rendered are good. Inadequate counselling was reported in 279 (76.4%) and long waiting time in 287 (71.7%).Short counselling time was reported in 324 (81.1%). Most of the women were not satisfied with the service as reported in 368 (92.5%). However, 392 (98%) will still recommend the PMTCT service at the facility to other women to prevent babies from HIV. This is shown in Table 3.

3.5 Socio-demographic Characteristics Predicting Utilization of PMTCT Services

Using binary logistic regression, the respondents who had tertiary education were 4.82 times more likely to utilize the service than those who had only primary and secondary education {OR=4.82 (95% CI: 2.43-9.57)} P=0.00, this was statistically

significant. Also, women whose husbands/ partners had tertiary level of education were 7.65 times more likely to utilize PMTCT service when compared with those who had only primary and secondary level of education,{OR = 7.65 (95% CI: 3.77-15.52)} P=0.00, this was statistically significant as shown in Table 4.

4. DISCUSSION

The socio-demographic profile of the women showed that most of the women and their partners had tertiary education which puts them at an advantage to understand what is being discussed during counselling. Also because they were already married they could have more support from their spouses.

The study showed that only 63.2% of the women have been tested in this pregnancy while 36.8% have not received HIV testing, this is lower than similar studies conducted among antenatal clinic attendees in Cameroun where 85.7% of the women have already being tested [10], this is not encouraging and is not in keeping with WHO recommendation of screening of all pregnant women [2]. Most of the women attributing their not been tested to lack of counsellors which further shows that adequate counselling is essential for the implementation of effective PMTCT services. Majority of the women if properly counselled are willing to test, disclose their status and even advice other women to get tested.

Partner/husband involvement is also essential for effective implementation of PMTCT services as they may provide support for their women if they test positive and therefore help reduce infection to their infants. The findings from this study show that most partners agreed their wives should be tested and about 68.4% of them had already been tested for HIV, this is in keeping with the 60% reported by Deressa et al. in Ethiopia [11] but higher than the 28% reported in another Ethiopian research on male involvement in PMTCT [12]. This is not surprising considering the fact that most of the respondents' partners had tertiary education and could easily access information on PMTCT.

In this study, majority (71.7%) of the women reported that the time spent waiting for counsellor was too long (30-60minutes), this could have been a reason why 92.5% of the women were not satisfied with the PMTCT services. The time spent for counselling was also found to be short 5-10minutes which may lead to inadequate understanding and comprehensiveness of the PMTCT messages and consequently affect the uptake of PMTCT services at the facility. This has also been reported in another study where the quality of communication skills, comprehensiveness of counselling information, technical competence of the counsellor and privacy during counselling were the most important factors affecting the quality of PMTCT services [13]. In order to improve acceptability and uptake of the PMTCT services, consideration should be given to improving the quality of services by reducing the waiting time for the women to access care and ensuring sufficient time is dedicated for counselling.

The socio-demographic variables found to be significantly associated with utilization of PMTCT services were the education of the women (OR 4.82, 95% CI: 2.43-9.57,P=0.00) which is in keeping with the study of Haliu et al. in Ethiopia [14] and the educational level of their partners (OR 7.65, 95%CI: 3.77-15.52, P=0.00) which is also in keeping with another study conducted in East Hararghe Zone, Ethiopia, where mothers who had a partner educated beyond the elementary level were 3.3 times more likely to utilize PMTCT services than those with elementary level [15]. This shows that the more educated the couple the more likely they would utilize PMTCT services to prevent their babies from being infected.

5. CONCLUSION

The findings of this study showed that not all our women utilized the PMTCT services in the index pregnancy. Those who did not utilize the PMTCT service blamed this on inadequate counselling and poor satisfaction of the service. Other factors identified to affect the utilization of PMTCT services at the facility included long waiting time to see a counsellor and inadequate counselling. There is need to improve the quality of PMTCT services to ensure effective implementation of PMTCT programmes.

6. RECOMMENDATIONS

Based on the research findings, the following recommendations are hereby made:

- Facilities offering PMTCT services should be equipped with adequate and skilled

counsellors who can provide effective counselling.

- Efforts should be made to improve the quality of PMTCT services by reducing the waiting time for women to access care.
- There should always be adequate time allocated for counselling.
- The importance of education for the woman and her partner should always be emphasized during advocacy and policy making, this should also be upheld as a social determinant for good health.

7. LIMITATION

The findings of this study were facility based and may not be generalized for the entire state, further studies are therefore needed at the state level to continuously assess the effectiveness of PMTCT programme in the state.

CONSENT

Written informed consent was obtained from each study participant after reading the consent form which contained information about what the study was all about and the benefit to the participants.

ETHICAL CONSIDERATION

Ethical approval was obtained from the University of Medical Sciences Teaching Hospital, Akure Ethics Committee.

COMPETING INTERESTS

Author has declared that no competing interests exist.

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