Original Research Article

Prevention of Mother to Child Transmission of Human Immune Deficiency Virus Services (PMTCT) in Public Hospitals; Access barriers and determinants in Enugu State, Nigeria.

ABSTRACT

Introduction

The most effective means of reducing Mother-to-Child transmission of HIV is to provide suppressive ART. PMTCT directly affects the achievement of Sustainable Development goals just. The unmet need for PMTCT services in Nigeria, particularly in Enugu state, is unacceptably high. This study aimed to assess factors associated with access barriers and determinants to PMTCT services in public health facilities in Enugu, Nigeria

Materials and methods

The study design was a facility-based analytical cross-sectional study. HIV positive nursing mothers who were accessing PMTCT services were studied. Pre-tested questionnaire was used. Chi-square test and Binary logistic regression was done to for determinants of experience of any access barrier. Level of significance was determined at a p-value of ≤ 0.05

Results

Higher proportion of participants were in 30-34 age group 124 (45.1%), attained secondary education 144(52.4%) and provided for by their husbands 174(63.3%) The major barriers identified were:- long waiting time at the facility (n=184,[66.9%)], distance of facility (n=161,[58.5%)], PMTCT being far away from other units 155[56.4%], Health workers talking to the clients in a degrading manner (n=151, [54.9%)], Stigma and discrimination from friends/neighbours (n=163, [59.3%)] and from health workers (n=123,[44.7%)] as well as being too busy with household chores (n=130, [47.3%)]. There were statistically significant associations between experience of barriers with age in categories ($\chi2$=11.741, p =0.008), religion ($\chi2$=5.381, p =0.020), source of income ($\chi2$= 8.817, p=0.032) and ethnicity ($\chi2$=9.240, p=0.026).

Conclusion

Comment [A1]: Spell out the acronym first.

Comment [A2]: Not clear what is meant by pre-tested? Do you mean a Psychometrically sound questionnaire?

Comment [A3]: Indicate number of participants that comprised the study sample.

Comment [A4]: Not clear.

Over ninety percent of respondents experienced a form of barrier. The major barriers included:~~,~~ long waiting time, distance to facility, location of PMTCT units, Health workers' attitude, Stigma and discrimination from health workers as well as being too busy with household chores. There was no identified predictor of access barrier.

Keywords: Access, Barriers, Public tertiary facilities, PMTCT

INTRODUCTION

Human Immune-Deficiency virus (HIV) is a worldwide pandemic.[1] Mother-to-child transmission (MTCT) is when an HIV-infected woman passes the virus to her unborn baby. Mother-to-child transmission or vertical transmission of HIV remains the major means by which children under the age of 15 years are infected with HIV.[2,3] However, the most effective means of reducing mother-to-child transmission is to provide suppressive ART to the mother in order to reduce the risk of vertical transmission~~,~~ and sustain the life and health of the mother while the child is growing up.[4,5]

In most parts of the world, HIV infection is increasing faster among women than men and the trend is more apparent in S~~s~~ub-Saharan Africa where women comprise 58% of existing HIV infections.[6] This can be attributed to poverty, poor health services as well as ignorance. Without interventions, there is a 30-45% chance that a baby born to an HIV-infected mother will become infected.[6] MTCT directly affects the achievement of Sustainable Development goals just as it impacted negatively on these three MDGs [MDG 4,5 and 6].[7]

Comment [A5]: Perhaps consider using another word such as lack of knowledge and / or education?

The strategy of preventing the transmission of HIV from HIV positive mothers to their infants during pregnancy, labour, delivery and breastfeeding can be achieved by the use of antiretroviral drugs, safer infant feeding practices and other interventions.[8,9] Although Anti-Retroviral Therapy

(ART) is available in most countries in Sub-Saharan Africa, data indicate that less than 10% of HIV-infected pregnant women in Sub-Saharan Africa have access to PMTCT servcises.[10] Prevention of mother-to-child transmission of HIV coverage has increased in recent years, but remains low in Ssub-Sahara Africa.[11]

Most infant-related HIV infections could be averted, but the problem is that very few of the world's pregnant women are being reached by prevention of mother-to-child transmission services.[12] One of the best opportunities for progress against HIV lies in preventing mothers from passing on the HIV virus to their children. Most of those infected children will die before their fifth birthday.[13] AHowever, advances in medical treatment has contributed to saving of many of these young lives. Pregnancy provides a unique opportunity for implementing prevention strategies by preventing reducing the transmission of HIV from mother to child.[13]

In Nigeria, PMTCT coverage was about 11% in 2011. This means that there is a big margin from the National PMTCT targets which estimates , that at least 90% of pregnant women should have access to quality HIV testing and counseling , 90% of all HIV positive pregnant women and HIV exposed infants have access to more efficacious ARV prophylaxis, 90% of HIV positive pregnant women have access to quality infant feeding counseling and 90% of all HIV exposed infants have access to early infant diagnosis (EID) services all by 2015.[14] Enugu state has an HIV sero-prevalence of 5.1% from 2010 National HIV Sero-Prevalence Sentinel Survey.[15]

About 14% of deliveries take place under skilled health care attendants with most deliveries outside two of the tertiary institutions in the state, University of Nigeria Teaching Hospital (UNTH) and Enugu State Teaching Hospital (ESUTH). It is, therefore, evident that the unmet need for PMTCT services in Nigeria, particularly in Enugu state, is unacceptably high.[3] This

Comment [A6]: Run-on sentence. Recommend breaking it into 2 sentences.

study aimed to assess factors associated with access barriers and determinants to PMTCT services in public health facilities in Enugu, Nigeria

MATERIALS AND METHODS

Study area

The study was conducted in the Enugu Metropolis. Enugu is located in the Southeast geopolitical zone of Nigeria. There are four ~~(4)~~ public tertiary health institutions, ~~-~~which are: the University of Nigeria Teaching Hospital (UNTH), Federal Neuropsychiatric Hospital, National Orthopaedic Hospital, and the Enugu State University Teaching Hospital (ESUTH). There are six district hospitals, 36 cottage hospitals and 366 primary health care centres, including comprehensive health Centres, health centres, and health posts. However, only 2 facilities offer comprehensive PMTCT services. These public facilities included in this study~~studied~~ were University of Nigeria Teaching Hospital (UNTH) and Enugu state University Teaching Hospital (ESUTH).

Study Design and Data Collection

An analytical cross-sectional study was conducted~~done~~. Pre-tested, interviewer administered, semi-structured questionnaires were used to collect information on demographic and access barriers to PMTCT. Data was collected between February and July 2015 by four trained field workers.

Comment [A7]: Not clear, see comment above in the abstract. Does this refer to a psychometrically sound instrument?

Comment [A8]: Not clear what is meant by semi-structured questionnaire. Please clarify.

Study population.

The study consisted of HIV positive women receiving care for PMTCT during pregnancy, childbirth and postnatal care. Also women who had babies in the twelve months preceding the study and were still receiving care for PMTCT were included in the study. This is because PMTCT services are provided to mothers until 12 months after delivery, when they are either

transferred to adult ART clinic if they do not become pregnant in the period or remain in the PMTCT clinic if they become pregnant.

Sample Size and sampling technique

The sample size was calculated using $\mathbf{n = Z^2pq/d^2}$ where confidence level [z] was 95%, prevalence of access to PMTCT services in specialist health care facilities in Nigeria [p] was 11%[3] and margin of error [d] was 5%. This gave 165 after adding 10% wrong response, however 275 respondents were studied.

The records of patients who had received PMTCT services in the past twelve months PMTCT services in each of the selected centres were obtained to get the sampling frame. From the hospital records of the patients for PMTCT services that were seen and noted from January to December the previous year [268 for UNTH and 210 for ESUTH], proportionately 154 for UNTH and 121 for ESUTH were studied to make up 275 clients. Patients that satisfied the inclusion criteria were recruited consecutively at the facilities using pre-determined proportions till the stated number of respondents were gotten.

Comment [A9]: Not clear.

Data analysis

Data was collected and analyzed using IBM Statistical Packages for Social Sciences (SPSS) V~~v~~ersion 20. Results were summarized using percentages and presented in tables. Chi-square test was used for associations between socio-demographic variables and experience of any access barrier. Logistic regression was done for determinants of experience of any access barrier. Level of significance was determined at a p-value of ≤ 0.

Ethical consideration

Ethical approval ~~clearance~~ was obtained from the Health Research Ethics Committee of UNTH, Ituku-Ozalla. Permission was obtained from heads of the various health facilities and written

124 informed consent was obtained from each participant before administering the questionnaire
125 Confidentially was ensured throughout the study and even beyond.

126

RESULTS.

Table 1: Socio-demographic characteristics of respondents

Variables	Frequency (n =275)	Percent
Age		
<25	8	2.9
25-29	89	32.4
30-34	124	45.1
≥35	54	19.6
Mean ± SD	**31.02 ± 3.80**	
Marital Status		
Single	9	3.3
Married till date	242	88.0
Others	24	8.7
Educational level		
No formal education	10	3.6
Primary	50	18.2
Secondary	144	52.4
Tertiary	71	25.8
Employment status		
Unemployed	67	24.4
Trader	125	45.5
Artisan	33	12.0
Civil / public servant	46	16.7
Farmer	2	0.7
Religion		
Christian	244	88.7
Moslem	31	11.3
Source of income		
Husband	174	63.3
Self	61	22.2
Husband and self	36	13.1
Relatives	4	1.5
Ethnicity		
Igbo	165	60.0
Hausa	25	9.1
Yoruba	25	9.1
Others	60	21.8
Parity		
1-2	62	22.5
3-4	172	62.5
≥5	41	4.9

Table 1 shows the socio-demographic characteristics of respondents. Higher proportion were in the 30-34 age group 124 (45.1%), still married 242(88.0%), attained secondary education 144(52.4%), were traders 125(45.5%), were Christians 244(88.7%), were provided for by their husbands 174(63.3%), were Igbos 165(60.0%) and had 3-4 babies 172(62.2%).

Comment [A10]: Not clear. Recommend re-wording.

Table 2: Barriers influencing access to PMTCT services.

	n = 275	
Variables	**Yes**	**No**
	n(%)	**n(%)**
Logistic factors		
Lack of transportation	137(49.8)	138(50.2)
Distance to health facility	161(58.5)	114(41.5)
Location of clinic	28(10.2)	247(89.8)
Cost of registration	17(6.2)	258(93.8)
Long waiting time in the hospital	184(66.9)	91(33.1)
Institutional/facility factors		
PMTCT center very far away from other units	155(56.4)	120(43.6)
Separate from other hospitals	15(5.5)	260(94.5)
Different clinic from where other patients are seen but same hospital	141(51.3)	134(48.7)
Health Workers factors		
HWs talk carelessly of our positive result	30(10.9)	245(89.1)
HWs treat us different from other women	77(28.0)	198(72.0)
HWs are unfriendly	109(39.6)	166(60.4)
HWs pass comments about us	81(29.5)	194(70.5)
HWs speak to us in degrading manner	151(54.9)	124(45.1)
HWs ignore HIV patients when they call on them in labour	104(37.8)	171(62.2)
Stigma And Discrimination factors		
Attitude of health workers	123(44.7)	152(55.3)
Stigmatization by health workers	28(10.2)	247(89.8)
Stigmatization by friends and neighbours	163(59.3)	112(40.7)
Treatment by your family members as Cost of registration they know you are HIV positive	39(14.2)	236(85.8)
Treatment by your community to people living with HIV/AIDS	33(12.0)	242(80.0)
Personal reasons		
Too busy with house hold chores	130(47.3)	145(52.7)

Did not understand was referred to PMTCT center	31(11.3)	244(88.7)
Lost referral letter	29(10.5)	246(89.5)
Fear of side effects of drugs	17(6.2)	258(93.8)
Overall experience of any barrier	***251(91.3)***	***24(8.7)***

Table 2 The major barriers due to logistic factors were; long waiting time at the facility 184[66.9%], distance of facility 161[58.5%] and lack of transportation 137[49.8%], Institutional factors included; PMTCT being far away from other units 155[56.4%] and PMTCT clinic different from other clinics within the same hospital 141[51.3%], Health workers factors were:; talking to the clients in a degrading manner 151[54.9%] and 109[39.6%] complained they were treated in unfriendly manner. Stigma and discrimination were; from friends/neighbours 163[59.3%] and from health workers 123[44.7%]. Some personal reasons that constituted obstacles were: being too busy with household chores 130[47.3%], did not understand their referral to PMTCT clinic 31[11.3%], losing referral letter 29[10.5%] and 17[6.2%] feared side effects of ART drugs. Generally 251(91.3%) experienced at least a form of barrier.

Comment [A11]: Please refer to the revisions made in the abstract.

Comment [A12]: See suggested revisions in abstract.

Table 3: Relationship between socio-demographic characteristics and experience of barriers

Socio-demographic	n = 275		Bivariate analysis χ^2 (p value)	Multivariate analysis AOR(95%CI)
	Poor	Good		
	Freq(%)	Freq (%)		
Age				
<25	8(100.0)	0(0.0)		1
25-29	75(84.3)	14(15.7)	11.741 (0.008)	1.1(0.9-1.3)
30-34	103(83.1)	21(16.9)		5.3(0.4-6.8)
≥35	54(100.0)	0(0.0)		5.8(0.8-7.2)
Marital Status				
Single	8(88.9)	1(11.1)	1.785 (0.410)	NA
Married till date	209(86.4)	33(13.6)		
Others	23(95.8)	1(4.2)		

Educational level				
No formal education	7(70.0)	3(30.0)	3.166 (0.367)	NA
Primary	44(88.0)	6(12.0)		
Secondary	128(88.9)	16(11.1)		
Tertiary	61(85.9)	10(14.1)		
Employment status				
Unemployed	57(85.1)	10(14.9)		
Trader	110(88.8)	15(12.0)	2.491 (0.778)	NA
Artisan	27(81.8)	8(18.2)		
Civil / public servant	42(91.3)	4(8.7)		
Farmer	2(100.0)	0(0.0)		
Religion				
Christian	217(88.9)	27(11.1)	5.381 (0.020)	1
Moslem	23(74.2)	8(25.8)		2.1(0.9-3.3)
Source of income				
Husband	149(85.6)	25(14.4)		1
Self	58(95.1)	3(4.9)	8.817 (0.032)	0.6(0.9-1.3)
Husband and self	31(86.1)	5(13.9)		1.9(0.7-7.6)
Relatives	2(50.0)	2(50.0)		2.0(0.5-3.4)
Ethnicity				
Igbo	152(92.1)	13(7.9)		1
Hausa	20(80.0)	5(20.0)		0.9(0.1-4.4)
Yoruba	19(76.0)	6(24.0)	9.240 (0.026)	1.1(0.9-1.3)
Others	49(81.7)	11(18.3)		0.8(0.2-5.1)
Parity				
1-2	55(88.7)	7(11.3)		
3-4	147(85.5)	25(14.5)	1.702 (0.427)	NA
≥5	38(92.7)	3(7.3)		

Table 3 shows that there were statistically significant associations between experience of barriers with age in categories ($\chi2$=11.741, p =0.008), religion ($\chi2$=5.381, p =0.020), source of income ($\chi2$= 8.817, p=0.032) and ethnicity ($\chi2$=9.240, p=0.026). It also showeds that those aged 30-34 years were about 5.3 times (AOR 5.3, 95% CI: 0.4-6.8) while those ≥35 years were 5.8 times (95% CI: 0.6-7.2) more likely not to experience barriers than those aged below 25 years. Moslem were 2.1 times (AOR 2.1, 95% CI: 0.9-3.3) more likely not to experience barriers than Christians. Those whose dido not depend on any one for income were about 0.6 times likely

(AOR 0.6, 95% CI: 0.9-1.3) while those that depended on relatives were about 2.0 times (AOR 2.0, 95% CI: 0.5-3.4) more likely to experience barriers than those catered for by their husband. Further, Hausas were 0.9 times (AOR 0.9, 95% CI: 0.1-4.4) and people from other tribes 0.8 times (AOR 0.8, 95% CI: 0.2-5.1) likely to experience barriers than Igbos.

DISCUSSION

Some of the major factors that the respondents reported ~~that affected~~affecting their uptake of PMTCT in the study included: ~~;~~ long waiting time, distance to facility, location of PMTCT units, h~~H~~ealth workers' attitude, s~~S~~tigma and discrimination from friends/neighbours and health workers as well as being too busy with household chores. The long waiting may be due to lots of documentation done for the patient with lots of forms filled as directed from donor agencies. Also shortage of health staff may be contributory. Distance to facility as a barrier is expected as a major public facility studied is located over 20km from the city. This makes people accessing the facility whether from Enugu metropolis and other catchment areas to spend much time on transit; which is ~~. This is~~ enough reason to discourage some clients from accessing care. The implication is that if not well addressed can negatively affect PMTCT services uptake.

Similar findings to this study were noted in the literature. More specifically, ~~Other previous studies had similar findings of~~ distance to facilities, frequency of visits required and shortage of (trained) clinic staff were reported to be ~~as~~ barriers.[16-18] Shortage of health workers ~~can~~ may lead to ~~their being overwhelmed wit~~ah high patient volume and contributing to long waiting-times of services.[16-18] In Zimbabwe, some identified barriers and challenges faced by participants included long waiting times (46%), unreliable access to laboratory testing (35%) and high transport costs

Comment [A13]: Incomplete statement.

Comment [A14]: Barriers to what? The same intervention? Further explanation is warranted.

(12%), perceived long queues (50%), competing life priorities, such as seeking food or shelter (33%) and inadequate referral information (15%).[10]

Identifying attitude of hHealth workers as a major barrier from this study is very discouraging and unhealthy. HIV-positive women require emotional and moral support from health workers because they usually experience discrimination in other places. The negative attitude of these health workers denies these clients the crucial role of providing support and care to these HIV positive women which is expected. This in turn, may discourages many clients, affects access and ultimately adherence to care. While some studies reported negative attitude of health care providers as being associated with reasons for underutilization of health centres by pregnant women,[19,20] other studies identified the negative health worker attitude as common barriers to returning to facilities to access PMTCT care.[16,19-21]

Stigma and discrimination experienced by these pregnant women as a barrier to accessing PMCTC was also documented in this study and other previous studies. Some of the respondents in a similar study indicated that even though people living with HIV/AIDS were accepted and supported in their community, the challenge of rejection and fear of being avoided was still widespread in the community.[22] The International Centre for Research on Women in their study in Botswana and Zambia also found that HIV/AIDS-related stigma and discrimination create circumstances that fuel the spread of HIV.[23] The gravity of stigma is so much that many patients prefer to bear the cost of transportation to access services in facilities far away from their residences than put themselves at risk of being recognized and news about their status spread. This highlights the ere is need for more training of health workers on PMTCT services as this will help reduce their negative attitude, stigma and discrimination to clients as well as improve their knowledge on PMCT. This will in turn, may enrich the content of information they pass

Comment [A15]: Relate this back to your study and the findings.

Comment [A16]: Access to what? Care?

onto the clients accessing PMTCT services. Also, the masses should be educated on HIV and the need to stop stigmatizing against people infected with HIV to reduce stigma and discrimination which is a major barrier to the fight against HIV.

Some personal reasons for not accessing health care included being too busy with house hold chores. This is disappointing. It shows that they do not appreciate their condition or the commitments made by government and other funding bodies to protect their unborn babies. This even though is a form as opportunity cost should not be much of a barrier as documented in this study. Similarly other personal reasons from this study and other studies include forgetting to attend clinics and to take drugs as well as difficulties in administering infant prophylaxis due to adverse side effects as constraining factors affecting PMTCT access. [15,16,23]

CONCLUSION

Some of the major barriers affecting uptake of PMTCT included; long waiting time, distance to facility, Health workers attitude, Stigma and discrimination as well as being too busy with household chores. Age, religion, source of income and ethnicity influenced barriers to PMTCT care. No predictor of access barrier was identified. There is need for more training of health workers especially and education of masses on the need to change their attitude towards people accessing PMTCT.

CONFLICT OF INTEREST

All authors declare no conflict of interest.

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