

Factors Associated with Access barriers to Prevention of Mother to Child Transmission of Human Immune Deficiency Virus Services in Private Hospitals in Enugu State, South East, Nigeria.

ABSTRACT

Introduction

Even with established interventions that can reduce the risk of infection to these babies some HIV infected women do not use these opportunities and such accounts for some draw backs in PMTCT services. This study was aimed at finding out the barriers in PMTCT Services in private tertiary health facilities in Enugu state, South-east Nigeria

Materials and methods

The study was a facility-based analytical cross-sectional study among HIV positive nursing mothers who were accessing PMTCT services. Questionnaires were used. Chi-square test was used for association between socio-demographic variables and experience of any access barrier. Multivariate analysis in form of 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

Majority were aged 30-34 years 144(52.4%), attained secondary education 121(44.0%), were unemployed 108(39.3%), and had 1-2 babies 128(46.5%). The major barriers experienced were; cost of registration/transport 198(72.0%), Stigma and discrimination from friends/neighbours 123(44.7%) and being too busy with household chores 137(49.8%). There were statistically significant association between experience of barriers with educational level ($\chi^2=8.572$, $p=0.036$) and parity ($\chi^2=6.451$, $p=0.040$)

Conclusion

26 Almost all the study participants in this study experienced a form of barrier with major barriers.
27 Parity and educational level influenced barriers to PMTCT care. There is need for educational
28 empowerment and family planning for the desired goals of PMTCT services to be achieved.

29 **Keywords:** Access, Barriers, Private tertiary facilities, PMTCT

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31

32 INTRODUCTION

33 The major routes of transmission of HIV are unsafe sex, contaminated sharp objects like
34 needles, infected blood, and transmission from an infected mother to her baby in utero (prenatal),
35 at birth (natal transmission) or afterwards through breast milk (post natal).¹ Mother-to-child
36 transmission (MTCT) is when an HIV-infected woman passes the virus to her unborn baby. It
37 remains the major means through which children under the age of 15 years are infected with
38 HIV.^{2,3}

39 The majority of MTCT of HIV occur in resource-poor countries, particularly in Africa, where
40 HIV prevalence is high; and fewer than 10% of pregnant women have access to interventions
41 designed for the prevention of mother-to-child transmission (PMTCT).^{4,5} About 400,000 children
42 under 15years became infected with HIV, mainly through mother-to-child transmission and 90%
43 of these MTCT infections occurred in Africa where HIV infection is beginning to reverse
44 decades of steady progress in child survival.⁶ The condition is worse in sub-Saharan Africa,
45 where over 90% of the 2.1 million children living with HIV reside.⁷⁻⁹ One of our best
46 opportunities for progress against AIDS lies in preventing mothers from passing on the HIV
47 virus to their children.

48 Prevention of mother to Child Transmission of HIV (PMTCT) programme is the means of
49 preventing/reducing the rate of transmission of HIV from an infected mother to her fetus or
50 newborn during pregnancy, delivery, or the postpartum period. It involves a four prong approach
51 which includes: prevention of HIV infection among all people; prevention of unwanted
52 pregnancies among HIV-positive women; reducing the transmission of HIV during pregnancy,
53 childbirth and the postpartum period; offering care and support to HIV positive women and their
54 families.¹⁰ The most effective means of reducing mother-to-child transmission is to provide
55 suppressive ART to the mother in order to reduce the risk of vertical transmission, sustain the
56 life and health of the mother while the child is growing up.^{1,11}

57 In the absence of these measures, an infant's risk of acquiring HIV from an infected mother
58 ranges from 15% to 45% but with the application of the appropriate interventions as obtained in
59 most developed countries, the rate is reduced to less than 2 per cent.^{2,10,12-15} A further 5-20
60 percent will become infected through breastfeeding.⁷ There are approximately 1.4 million
61 pregnant women living with HIV in low and middle income countries out of which only 26% of
62 pregnant women living in these countries received HIV test.¹⁶ Although Anti-Retroviral Therapy
63 (ART) is available in most countries in Sub-Saharan Africa, data indicate that less than 10% of
64 HIV-infected pregnant women in Sub-Saharan Africa have access to PMTCT services.⁴ The
65 majority of Nigerians do not know their status and despite numerous statements of political
66 commitment, a well- defined set of interventions and the know-how required to implement them,
67 the vast majority of pregnant women in need of PMTCT services do not receive them.¹⁷

68 Several factors can increase the likelihood of MTCT such as a high viral load, the time the
69 mother got infected with the virus, or if she was re-infected during pregnancy. However, even
70 with established interventions that can reduce the risk of infection to these babies some HIV

71 infected women do not use these opportunities and such accounts for some draw backs in
72 PMTCT services. High proportion (65%) of deliveries are outside health facilities, attended by
73 un-skilled personnel (61%) or completely unassisted (20%). This grossly undermines PMTCT as
74 it leads to poor uptake despite availability of these commodities in such areas.¹⁷

75 The public healthcare facilities at the primary, secondary and tertiary levels in Nigeria are
76 maldistributed politically. They generally lack facilities and personnel most especially at the
77 LGA level and in rural areas.¹⁸ The private sector fills the vacuum and makes most impact in the
78 primary healthcare system. Private health facilities provided in 2009 as many as 100,000 patients
79 with antiretroviral treatment (ART), which is 29 percent of the target of 350,000 and 35 percent
80 of the 288,000 people on ART in Nigeria currently. Their contribution toward voluntary
81 counseling and testing is even more considerable more than the total target for Nigeria.¹⁸

82 This study was aimed at finding out some causes of the setbacks in PMTCT Services in private
83 tertiary health facilities in Enugu state, South-east Nigeria.

84 **MATERIALS AND METHODS**

85 **Study area**

86 The study was in Enugu State, Nigeria. Enugu state is located in the southeast geopolitical zone
87 of Nigeria. Administratively Enugu state is made up of three senatorial zones, There are many
88 government health institutions and privately owned hospitals, pharmacies, laboratories as well as
89 patent medicine shops that serve as important sources of health care delivery. There are
90 approximately 700 private health facilities comprising of non-profit and profit making facilities
91 and faith-based facilities.⁸⁹ Comprehensive PMTCT is being offered in 15 out of all health

92 facilities in the state [10 public and 5 private health facilities]. The study was conducted at the
93 selected private health facilities that offer comprehensive PMTCT services in Enugu state. The
94 private health facilities are Annunciation specialist Hospital and Mother of Christ specialist
95 hospital.

96 **Study Design.**

97 This was a health facility-based analytical cross-sectional study to ascertain the factors
98 influencing setbacks in PMTCT Services in private tertiary health facilities in Enugu state

99 **Study population**

100 It consisted of HIV positive women receiving care for PMTCT during pregnancy, childbirth and
101 postnatal care. Additionally, women who had babies in the twelve months preceding the study
102 and were still receiving care for PMTCT were included in the study. This is because PMTCT
103 services are provided to mothers until 12 months after delivery, when they are either transferred
104 to adult ART clinic if they do not become pregnant in the period or remain in the PMTCT clinic
105 if they become pregnant.

106 **Sample Size**

107 The sample size was calculated using standard formula for proportions at confidence level of
108 95%, prevalence of access to PMTCT services in specialist health care facilities in Nigeria of
109 11%² and margin of error of 5%. This gave 165 after adding 10% wrong or incomplete
110 responses, however 275 respondents were studied.

111 **Sampling technique**

112 Two (2) PMTCT health facilities were used for the study. The records of patients who had
113 received PMTCT services in the past twelve months PMTCT services in each of the selected
114 centres were obtained to get the sampling frame. The number of respondents selected from each
115 facility was determined proportionately based on number of PMTCT patients seen at the centre.
116 From the hospital records of January to December the previous year, the number of patients for
117 PMTCT services was 224 for Annunciation and 202 for Mother of Christ. By proportionate
118 sampling, 145 patients for Annunciation and 130 patients for Mother of Christ were studied to
119 make up 275 clients. Respondents that satisfied the inclusion criteria were recruited
120 consecutively at the facilities using pre-determined proportions till the stated number of
121 respondents were gotten.

122 **Data collection tool and methods**

123 Pre-tested, interviewer administered, semi structured questionnaire was used to collect data from
124 participants in selected health facilities. This was verbally translated to the local language (Igbo)
125 for those who could not understand English language very well. Pigeon English was also used
126 for non Igbos who could not appreciate the wordings very well. Four trained research assistants
127 were used.

128 **Data analysis**

129 Data was collected and analyzed using IBM Statistical Packages for Social Sciences (SPSS)
130 version 20. Results were summarized using percentages and presented in tables. Chi-square test
131 was used for association between sociodemographic variables and experience of any access
132 barrier. Multivariate analysis in form of logistic regression was done to for determinants of
133 experience of any access barrier. Level of significance was determined at a p-value of ≤ 0.05 .

134 **Ethical consideration**

135 Ethical clearance was obtained from the Health Research Ethics Committee of UNTH, Ituku-
 136 Ozalla. Written Permission was obtained from heads of the various health facilities that were
 137 used for the study. Furthermore, written informed consent was obtained from each participant
 138 before administering the questionnaire. Information was provided to each participant on the
 139 purpose of the study, their roles and rights as participants, voluntariness, potential benefits and
 140 risks of participation. Confidentiality was ensured by non-inclusion of self-identifying
 141 characteristics in the questionnaire.

142 RESULTS

143 **Table 1: Sociodemographic characteristics of respondents**

Socio-demographic variables	Frequency (n =275)	Percent
Age		
<25	12	4.4
25-29	88	32.0
30-34	144	52.4
≥35	31	11.3
Mean ± SD	30.41 ± 3.25.	
Marital Status		
Single	18	6.5
Married till date	235	85.5
Others	22	8.0
Educational Level		
No formal education	15	5.5
Primary	41	14.9
Secondary	121	44.0
Tertiary	98	35.6
Employment status		
Unemployed	108	39.3
Trader	85	30.9
Artisan	21	7.6
Cittvil / public servant	55	20.0
Farmer	5	1.8
Religion		
Christian	259	94.2
Moslem	16	5.8
Source of income		

Husband	170	61.8
Self	56	20.4
Husband and self	46	16.7
Relatives	3	0.7
Ethnicity		
Igbo	191	69.5
Hausa	19	6.9
Yoruba	19	6.9
Others	46	16.7
Parity		
1-2	128	46.5
3-4	115	41.8
≥5	32	11.6

144
145 Table 1 shows the socio-demographic characteristics of respondents. Higher proportion were in
146 the 30-34 age group 144 (52.4%), still are married 235(85.5%), attained secondary education
147 121(44.0%), were unemployed 108(39.3%), were Christians 259(94.2%), were provided for by
148 their husbands 170(61.8%), were Igbos 191(69.5%) and had 1-2 babies 128(46.5%).

149

150 **Table 2: Barriers influencing access to PMTCT services**

Barriers	n = 275	
	Yes n(%)	No n(%)
Logistic factors		
Lack of transportation	108(39.3)	167(60.7)
Distance to health facility	66(24.5)	209(76.0)
Location of clinic	56(20.4)	219(79.6)
Cost of registration/transport	198(72.0)	77(28.0)
Long waiting time in the hospital	48(17.5)	227(82.5)
Stigma And Discrimination factors		
Stigmatization by health workers	34(12.4)	241(87.6)
Stigmatization by friends and neighbours	123(44.7)	152(55.3)
Treatment by your family members as they know you are HIV positive	66(24.0)	209(76.0)
Treatment by your community to people living with HIV/AIDS	39(14.2)	236(85.8)
Personal reasons		
Too busy with house hold chores	137(49.8)	138(50.2)
Did not understand was referred to PMTCT center	14(5.1)	261(94.9)
Lost referral letter	12(4.4)	263(95.6)
Fear of side effects of drugs	52(18.9)	223(81.1)

others*	35(12.7)	240(87.3)
Health Workers factors		
HWs talk carelessly of our positive result	37(12.2)	238(86.5)
HWs treat us different from other women	38(13.8)	237(86.2)
HWs are unfriendly	45(16.4)	230(83.6)
HWs pass comments about us	52(18.9)	223(81.1)
HWs speak to us in degrading manner	36(13.1)	239(86.9)
HWs ignore HIV patients when they call on them in labour	23(8.4)	252(91.6)
Institutional/facility factors		
PMTCT center very far away	59(21.5)	216(78.5)
Separate from other hospitals	13(3.7)	262(95.3)
Different clinic from where other patients are seen but same hospital	38(13.8)	237(86.2)
Once you enter there everybody knows you are HIV positive	46(16.7)	229(83.3)
Overall experience of any barrier	259(94.2)	6(5.6)

151
152 Table 2 The major barriers due to logistic factors were; cost of registration 198[72.0%] and lack
153 of transport 108[39.3%], Institutional factors included; PMTCT being far away 59[21.5%] and
154 once you enter everyone sees you 46[16.7%], Health workers factors were; talking to the clients
155 in a degrading manner 36[13.1%] and 45[16.4%] complained they were treated in unfriendly
156 manner. Stigma and discrimination were from friends/neighbours 123[44.7%] and from health
157 workers 34[12.4%]. Some personal reasons that constituted obstacles were; being too busy with
158 household chores 137[49.8%] and feared side effects of ART drugs 52[18.9%]. Generally
159 259(94.2%) experienced at least a form of barrier.

160
161 **Table 3: Relationship between socio-demographic characteristics and experience of any of**
162 **the barriers**

Socio-demographic	Experience of barrier (n = 275)		Bivariate analysis χ^2 (p value)	Multivariate analysis AOR(95%CI)
	Yes	No		
	Freq(%)	Freq (%)		
Age				
<25	13(100.0)	0(0.0)		
25-29	86(97.7)	2(2.3)	0.658 (0.883)	NA

30-34	139(96.5)	5(3.5)		
≥35	30(96.5)	1(3.2)		
Marital Status				
Single	18(100.0)	0(0.0)	1.403 (0.496)	NA
Married till date	227(96.6)	8(3.4)		
Others	22(100.0)	0(0.0)		
Educational level				
No formal education	15(100.0)	0(0.0)	8.572 (0.036)	
Primary	37(90.2)	4(9.8)		0.9(0.7-11.1)
Secondary	118(97.5)	3(2.5)		0.5(0.4-6.7)
Tertiary	-	-		
Employment status				
Unemployed	106(98.1)	2(1.9)		
Trader	84(98.1)	1(1.2)	8.049 (0.154)	NA
Artisan	20(95.2)	1(4.8)		
Civil / public servant	52(94.5)	3(5.5)		
Farmer	1(100.0)	0(0.0)		
Religion				
Christian	252(97.3)	7(2.7)	0.671 (0.385)	NA
Moslem	15(93.8)	1(6.3)		
Source of income				
Husband	163(95.9)	7(4.1)	2.597 (0.458)	NA
Self	55(98.2)	1(1.8)		
Husband and self	46(100.0)	0(0.0)		
Relatives	-	-		
Ethnicity				
Igbo	184(96.3)	7(3.7)	2.707 (0.439)	NA
Hausa	18(94.7)	1(5.3)		
Yoruba	19(100.0)	0(0.0)		
Others	-	-		
Parity				
1-2	124(96.9)	4(3.1)	6.451(0.040)	
3-4	114(99.1)	1(0.9)		1.1(0.9-8.3)
≥5	29(90.0)	3(9.4)		0.9(0.7-10.8)

163

164 OTable 3 shows that there were statistically significant association between experience of
165 barriers with educational level ($\chi^2=8.572$, $p=0.036$) and parity ($\chi^2=6.451$, $p=0.040$). It also
166 shows that had primary education were about 90% times (AOR 0.9, 95% CI: 0.7-11.1) and those

167 that had secondary education 50% times (AOR 0.5, 95% CI: 0.4-6.7) times likely not to
168 experience barriers than those that had no formal education. Those whose parity were 3-4 times
169 were about 1.1 times more likely (AOR 1.1, 95% CI: 0.9-8.3) while those 5 times and above that
170 were about 90% times (AOR 0.9, 95% CI: 0.7-10.8) likely to experience barriers than those
171 whose gravidity was 1-2.

172

173 **DISCUSSION**

174 Wanting to have children is a legitimate desire of men and women in Africa, irrespective of their
175 religious beliefs. This is partly in order to give meaning to life. It is a social norm and this desire
176 cannot be suppressed by HIV infection.¹⁹ The recent availability of PMTCT services in the
177 country has increased the desire of HIV-positive married women to have babies of their own
178 since they hope the interventions will reduce the possibility of their having an HIV-positive
179 baby. However they are confronted with some barriers. This study showed that generally almost
180 all participants experienced at least a form of barrier (94.2%). However, the major barriers
181 identified were; cost of registration, Stigma and discrimination from friends/neighbours as well
182 as being too busy with household chore.

183 Cost as a barrier is expected in private facilities because even though drugs are free in both
184 public and private facilities, other ancillary needs are subsidized in public facility which is not so
185 with private. Equally, while HIV treatment is free at the point of service, HIV patients still incur
186 substantial cost in accessing care.²⁰ These costs are two-fold; financial cost and opportunity cost.
187 The financial cost can be direct or indirect. Direct medical costs include payments made to
188 investigate and treat symptoms, expenditure in the event of hospitalization, purchase of drugs
189 other than HIV drugs as well as registration at facility.^{20,21} while indirect cost are costs like

190 transportation cost. In our study cost of registration and transport was documented as a major
191 barrier. Also transport cost has been reported in several studies as a major access barrier.²²⁻²⁵ In a
192 study in South East Nigeria, it was found that transportation cost was one of the reasons for not
193 seeking health care in a health facility.²² Similarly studies identified issues affecting access to
194 PMTCT treatment for mothers and infants as distance to facilities, frequency of visits required
195 and long waiting time in the hospital.²³⁻²⁵

196 Other form of cost always over looked but faced in course of accessing care is the Opportunity
197 cost. It is value of the alternative actions foregone by the individual in order to access care.²⁶ For
198 one to get to a HIV clinic for treatment some trade-offs are often made. This might be in terms of
199 work, school, business or domestic chores.²⁶ This featured in this study as personal reasons that
200 constituted obstacles and about half reported that being too busy with household chores was a
201 barrier.

202 Stigma and discrimination is a major problem often faced by people living with HIV/AIDS in
203 developing countries, including Nigeria. It constitutes one of the greatest barriers to effectively
204 combating HIV pandemic. People with HIV infection are stigmatized because of the widely held
205 belief that it is associated with behaviours considered socially unacceptable by many persons.
206 People fail to undergo testing due to fear of discrimination and stigma and even when they
207 undergo, some fail to disclose their status for the same reason. Some HIV patients have been
208 thrown out of jobs and homes, rejected by family and friends while some have even been killed
209 by their relatives or by themselves instead of continuing to face ordeals they are subjected to.
210 The highest form of stigma and discrimination experienced by respondents from this study was
211 stigmatization by friends and neighbors. Imagine the people that should serve as succor being

212 perpetrators of the same act. HIV-positive women require emotional and moral support from
213 health workers because majority does not get it any other place even at home.

214 Findings from studies in South Africa,²⁷ Tanzania²⁸ and Kenya²⁹ show that stigma regarding
215 HIV status and fear of disclosure to partners or family members (particularly grandmothers or
216 mothers-in-law) were major barriers to uptake of PMTCT ARV interventions Study in Lagos,
217 Nigeria equally found that 69.2% of their respondents said that they would be discriminated
218 against socially and/or culturally if they tested HIV positive.²⁸ However in same study, few of
219 the respondents indicated that people living with HIV/AIDS were accepted and supported in
220 their community. The challenge of rejection and fear of being avoided was still widespread in the
221 community. The International Centre for Research on Women in their study in Botswana and
222 Zambia found that HIV/AIDS-related stigma and discrimination create circumstances that fuel
223 the spread of HIV.²⁹ The gravity of stigma is so much that many patient prefer to bear the cost of
224 transportation to access services in facilities far away from their abode than put themselves in a
225 situation of being recognized and the news of their status spread.

226 The findings from this study show that those whose parity were more than 2 were more likely to
227 experience barriers than those whose parity were 2 and below. This is in line with other studies
228 which documented that being married, increasing age and increasing year were independently
229 associated with access to PMTCT services.^{2,24} Equally those that had primary and secondary
230 education were likely not to experience barriers than those that had no formal education. This
231 can be partly explained by empowerment associated with education. The more educated ones are
232 likely to appreciate the jingles, promotions and teachings about HIV thereby making them
233 appreciate that their condition and also understand that PMTCT is only way for productive lives
234 in their family. This possible explanation is also in line with the finding from China and Addis

235 Ababa, Ethiopia where women having secondary and above education level were found to have
236 better knowledge on MTCT and PMTCT of HIV than those with no education.^{30,31}
237 Other identified barriers from other studies include; lack of available, accessible, acceptable, and
238 affordable resources negatively influence decisions and actions towards PMTCT. Family
239 contexts matter with decisions and actions towards PMTCT service uptake in Nigeria
240 particularly with disclosure and non-disclosure of sero-positive status, fertility intentions and
241 infant feeding choices.²³⁻²⁵

242 **CONCLUSION**

243 Almost all of the study participants in this study experienced a form of barrier. The major
244 barriers identified were; cost of registration, Stigma and discrimination from friends/neighbours
245 as well as being too busy with household chore. Parity and educational level influenced barriers
246 to PMTCT care.. There is need for educational empowerment and family planning for the desired
247 goals of PMTCT services to be achieved. Individuals, government, NGOs and other agencies
248 should lend hand in funding HIV and PMTCT services so that everything about it should be free.

249 **CONFLICT OF INTEREST**

250 All authors declare no conflict of interest

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