KNOWLEDGE AND PRACTICES OF PMTCT AMONG HEALTH CARE PROVIDERS IN PRIVATE HOSPITAL IN ILORIN, NIGERIA.

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ABSTRACT

Introduction: In the developed countries where mother to child transmission of the virus is still high preventing MTCT is essential and starts during the antepartum period where diagnosis can be made and antiretrovirals and other prevention strategies can be instituted. A significant proportion of Maternity care and delivery services are rendered by private hospitals. Adequate knowledge by health care providers of antiretroviral use and other PMTCT strategies will be required to ensure control of vertical transmission of the virus.

Objective: To assess the knowledge and practice of PMTCT among health care providers in private health facilities in Ilorin, Nigeria.

Method: This is a review of health care providers in private health facilities Ilorin, Nigeria, between December2011 and November2012. Information on biodata, general knowledge on HIV and PMTCT and practices done to prevent vertical transmission were collected with use of questionnaires and were analyzed using SPSS statistical software version 17.

Result: 265 questionnaires were applied but 223 were complete and analyzed. Their age range was 20-62years; mean age was 32.45+7.0SDyrs and Mean working experience was 5.89+5.17SD yrs. Nurses constituted the greater percentage 64.1% of the health care providers. Knowledge that vertical transmission could be prevented was good (95.5%), however 15.2% felt HIV could be transmitted through sharing of spoon or eating together. Only 20% had training in PMTCT and 17% worked in health facilities where ARV was administered to HIV positive pregnant women. A larger number 72% referred the HIV positive women to other centres for antenatal care and delivery. Antiretroviral drugs administered to the mothers were, 42.1% administered single drug ARV therapy, 21.1% gave 2 ARV drugs which is not in any standard protocol while only 5.3% administered 3 ARV drugs. Prophylactic ARV administration to the babies also revealed deficiencies.

Conclusion: Knowledge and practice of PMTCT among health care providers in private sectors was poor. There were no clear cut guidelines for antiretroviral drug administration for mothers and babies. Training and retraining on PMTCT should be encouraged.

Keywords: Knowledge, Practice, health care provider, PMTCT

INTRODUCTION

Human Immunodeficiency Virus (HIV) infection is a major public health problem worldwide[1]. Nigeria is said to have an adult(15-49yrs) HIV prevalence rate of 3.6% and has the

third largest number of people living with HIV with an estimate of 3.3million of which 1.7million are women in the reproductive age[2]. About 430,000 children were infected with HIV in the year 2008 and in the year 2010, over 90% through mother to child infection (MTCT)[3]. Without intervention the risk of MTCT ranges from 25-45%. With specific intervention the risk can be reduced to 2% in none breastfeeding population and 5% in breastfeeding population. In Many developed countries paediatric HIV has been virtually wiped out[4]. Moreover in several countries in the sub-Saharan region which carries the greater burden of HIV/AIDS, there has been significant success in reducing MTCT. Ghana and South Africa have led the way, with the largest decreases in the numbers of new HIV infections among children from 2009 to 2012[5].

In Nigeria however there has been little or no progress in reduction of mother to child transmission of HIV, nearly 60,000 children contracted HIV in 2012, a figure higher than that of any other country worldwide, and the number has remained largely unchanged since 2009[5].Only 58% of pregnant women received antenatal care in 2008 and there are marked disparities in care by wealth and residential status[2]. As at 2009 only 13% of pregnant women were tested for HIV and only 22% of HIV positive pregnant women received antiretroviral.Prevention of HIV transmission from a woman living with HIV to her baby actually starts during the antenatal period, when detection, in previously undiagnosed women, investigation and appropriate management can be commenced[6]. The national guideline states that pregnancy is an indication for antiretroviral therapy in all HIV positive women.

Most government hospitals are adequately monitored and equipped to detect, investigate and manage HIV in pregnant mothers. However a significant proportion of Maternity care and delivery services are rendered by private hospitals and there appears to be a weak community and private sector engagement in PMTCT service delivery generally[7].

To prevent the transmission of HIV from mother to baby, the World Health Organization (WHO) promotes a comprehensive approach, which includes the following four components: Primary prevention of HIV infection among women of childbearing age; Preventing unintended pregnancies among women living with HIV; Preventing HIV transmission from a woman living with HIV to her infant; and Providing appropriate treatment, care and support to mothers living with HIV and their children and their families[3,4,8,9].

The government and several supporting bodies have done a lot of work on prevention of maternal to child transmission of HIV in Nigeria. These include provision of antiretroviral test kits free of charge to hospitals, provision of antiretroviral drugs and free tests. There are 3 types of HIV antibody tests available in the country, the Simple or rapid tests, Enzyme-linked Immunosorbent Assay (ELISA) tests and Western Blot tests. Simple/rapid tests are those commonly used in the private sector and utilize whole blood or serum, they are easy to perform, do not require special equipment or highly trained staff, and will usually give results in less than 30 minutes.

The serial rapid HIV testing algorithm recommended for use in the latest national guideline in PMTCT settings includes use of an initial screening test kit, followed by use of a confirmatory test kit when the result of the first test is positive. A third or tie-breaker test is then

required to resolve the discordance whenever the first two rapid tests differ[8,9]. The result obtained by the tiebreaker kit is reported as the ultimate HIV test result. If however the screening test is negative, the test result is reported as HIV negative. ELISA and western blot are more expensive and require highly trained staff and are more frequently used in government hospitals or large centres. Western blot is confirmatory and does not require another test for confirmation.

ARV use for PMTCT has evolved from option A through B to B+. Option A involves the use of single ARV drug while Option B involves the use of triple ARV. WHO now recommends option B+ in which the ARVs are continued for life. The ARV prophylaxis for the baby remains the same as in option B.

The aims of this study include determining general knowledge of HIV infection, modes of transmission and management, knowledge of methods of preventing maternal to child transmission of HIV among medical personnel in private hospitals in Ilorin. Also to determine definite practices employed by medical personnel in private medical facilities to aid prevention of HIV to the neonates.

MATERIAL AND METHODS

The study was carried out in Ilorin, the capital city in Kwara state Nigeria. It is located in the North Central geopolitical zone of Nigeria. It is an urban settlement with essential health and educational facilities at the primary, secondary and tertiary levels. It has a population of about 1.1 million[10], a significant percentage are educated (school certificate levels and above. Ilorin metropolis consist of 3 local government areas, Ilorin east, west and south local areas. About 50 private hospitals with varying staff strength were visited covered in almost equal proportions in the local government areas. The study population are medical personnel working in the various private hospitals in Ilorin. A total of 265 questionnaires were administered however only 223 could be adequately analysed. Private hospitals that provided maternity services which consist of antenatal care and deliveries services in all the local government areas were randomly chosen. Questionnaires were distributed to the nurses, community health workers laboratory scientist or technologist and doctors working in these hospitals. The questionnaire was based on the data collection of knowledge and practises of medical personnel managing pregnant women in the privately owned hospitals where they were working.

It was made up of 2 sections. The first section was on bio data, past obstetric history and pregnancy outcome, past medical history and the common food taboos in the society. The questionnaires were self administered. The inclusion criteria were consent to participate by personnel, and approval from the hospital. None provision of antenatal care and delivery services in the hospital were the exclusion criteria.

Ethical considerations: Permission was taken from the study sites. The survey was conducted in accordance with the ethical requirements of the institutions.

The questionnaire was pre-tested in 3 private hospitals and among 20 personnel for correction and clarification of questions before administering it to the study group. The pre-tested questionnaire was not included into the study. Data was analyzed using the SPSS 17 statistical soft ware. Data are expressed as absolute numbers and percentages, or mean and standard deviation.

RESULT

A total of 223 questionnaires out of the 265 questionnaires were analysed. Table 1 shows the sociodemographic characteristics of the respondents. The most common respondent were nurses which accounted for 143(64.1%) and are the largest number of care givers in the hospitals. majority also were females and the years of practice of their various professions have also been shown below. Majority of the respondents fell within the age group of 30-39 years. The mean age was 32.45 + 7.05yrsSD. Mean duration of practise was 5.89 + 5.17yrsSD.

Table 2 shows the knowledge of the respondents about transmission of the HIV virus. This included the general modes of transmission of HIV infection and the modes of vertical transmission of the virus from the mother to the child. All the respondents were able to identify that the causative organism was a virus. Only 20% of the respondents had any training in PMTCT. Only 75(33.6%) of respondents knew the prevalence rate of HIV in Nigeria, 123(55.2%) claimed to know the meaning of PMTCT but only 99(44.4%) were able to mention it correctly

Table 3 shows practices done to prevent vertical transmission of the virus. Antiretroviral drugs were administered in centres where 17% of respondents were working. Modified obstetric practices such as vaginal washing with antiseptic solutions, delaying of artificial rupture were not specifically done although most claimed that universal precautions were taken during delivery and whenever it was necessary.

Table 4 shows pattern of antiretroviral drug administration for pregnant women by respondents in their various hospitals. About 16(42.1%) still used single agent, 8(21.1%) used double agent ARVs while 1(2.6%) used triple agent antiretroviral, while 12(31.6%) respondents were not sure of antiretroviral use in their facilities. Viral load estimation could not be done in the hospitals. Included in the table are the usual commencement and discontinuation of these ARV in the centres as well as investigations done before commencement of the drugs.

Table 5 shows ARV use in exposed babies. Of the 38 respondents, 33(86.8%) agreed that antiretrovirals should be used for the exposed babies and 37(97.4%) felt that it should be commenced at birth. Concerning feeding options after birth 52.6% would not advice mixed feeds (infant formula +breastfeeding).12(31.6%) would not advice on infant formula feeds while the remaining respondents would not advice on exclusive breastfeeding.

Table 6 shows the association between knowledge of prevalence, routes of transmission and meaning of PMTCT and some sociodemographic factors of respondents. It shows that there is a statistically significant difference in the knowledge of transmission of HIV infection via breast milk and at delivery between the age groups. Knowledge of the meaning of PMTCT also showed statistically significant difference between the genders. The level of significance was based on 95% confidence interval ($p<0.05$).

Table 1: *Sociodemographic Characteristics of Respondents*

	Frequency n=223	percentage
Age in years		
20-29	82	36.8
30-39	111	49.8
40-49	23	10.3
50-59	5	2.2
60 <	2	0.8
Working		
Experience(YRS)	152	68.2
< 5years	43	19.3
5-10	19	8.5
11-15	9	4.0
>15		
Occupation	143	64.1
Nurses	62	27.8
Doctors	17	7.6
Community Health	1	0.4
workers		
Laboratory	50	22.4
technician	173	77.6
Sex		
Male	64	28.7
Female	159	71.3
Marital Status		
Single		
Married		

Table 2: *Knowledge about Prevalence, Prevention and Transmission of HIV*

	Correct Response		Wrong Response	
	N	%	N	%
Knowledge of HIV prevalence in the country	75	33.9	146	66.1
Knowledge of HIV prevalence in the state	56	25.1	165	74.7
Meaning of PMTCT	123	55.2	94	42.2
	YES	**%**	**NO**	**%**
Training in PMTCT	46	20	177	80
Modes/Routes of Transmission	**YES**	**%**	**NO**	**%**
Through Blood Transfusion	222	99.6	1	0.4
Though Sex	219	98.2	4	1.8
Through sharing of spoon	21	9.4	202	90.1
Eating Together	13	5.8	210	94.2
Sharing of sharp objects	209	93.7	14	6.3
From Infected Mother to Child	211	94.6	12	5.4
When can HIV be transmitted to the baby				
During Pregnancy	189	84.8	34	15.2
Through Breastfeeding	203	91	20	9.0
At delivery	206	92.4	17	7.6
Primary prevention of HIV include	**YES**	**%**	**NO**	**%**
Preventing infection of young women	90	40	133	60
Preventing unwanted pregnancy	65	29.1	158	70.9
Transfusion of only screened blood	207	92.8	16	7.2
Use of IUCD for contraception	12	5.4	211	94.6
Use of antibiotics by uninfected	3	1.3	220	98.7
Concerning Transmission of HIV to the Baby				
Cannot be Prevented	9.0	4.0	214	96.0
Can be prevented by giving ARV to mothers	213	95.5	10	4.5
Can be prevented by giving ARV to neonates	163	73.1	60	26.9

IUCD- Intrauterine contraceptive device

Table 3: *Shows certain PMTCT practices done by the respondents in some of the various centres in order to reduce vertical transmission.*

Practices	Freq n=223	%
Pre and post test counselling done?		
Yes	213	95.5
No	10	04.5
When? **During ANC only**	91	40.0
In labour only	01	00.4
During Puerperium	04	01.8
Anytime	117	52.5
Source of test kits		
From government	48	21.8
From NGOs	37	16.6
Buy	64	28.7
Don't know	66	29.6
How do you confirm Positive tests		
Do not confirm	21	9.1
Repeat test with another kit	98	43.9
Send to tertiary centre	42	18.8
No Idea	44	19.7
ARVs given in your centre? YES	38	17.0
No	165	74.0
If NO, Refer	162	72.0
Deliver by c/s th en refer	1	0.4
Vaginal delivery with modified	1	0.4
Obst practices		
Just normal(no ARVs, no c/s, no referrals)	1	0.4

Table 4: *Shows The Pattern Of Antiretroviral Use For Mothers By The Respondents In The Various Health Facilities.*

	N(38)	%
Pre-ARV investigation done	**Yes**	**NO**
FBC	18	20
LFT	15	23
FBS	02	36
E/U	12	26
CD4	36	02
ARVs given in the centres		
N**evirapine(NVP)**	08	21.5
Lamivudine(3TC)	04	10.5
Zidovudine(AZT)	03	7.9
Efavirenz(EFV)	01	2.6
3TC+NVP	04	10.5
AZT+NVP	02	5.3
3TC+EFV	01	2.6
3TC+AZT	01	2.6
AZT+NVP+3TC	02	5.3
Usual ARV commencement		
Before 14 weeks	00	0
From 14 weeks	27	71.5
In Labour	01	2.6
After delivery	00	0
Not Sure	10	26.3
Time of discontinuation		
A) Breastfeeding mothers		
Just before delivery	0	0
1 week post partum	2	5.3
3 months postpartum	1	2.6
Not sure	**15**	**39.5**
Possible side effects of ARVs		
Anaemia	3	7.9
Leucopaenia	7	18.4
Hepatotoxicity	19	50.0
Hepatosplenomegaly	1	2.6
Mixed feeding (infant formula and breastfeeding)		

Table 5: *Shows ARV Use in Babies Born To Positive Mothers in the Various Centres.*

	N	%
ARV prophylaxis for exposed babies		
Yes	33	86.8
No	1	2.6
Not Sure	4	10.5
Types of ARV for Babies		
NVP	21	55.3
AZT	7	18.4
NVP+AZT	2	5.3
AZT+3TC+NVP	1	2.6
Not Sure	7	18.4
Commencement of paediatr ic ARV		
At Birth	37	97.4
Discontinuation		
One year	4	10.5
4months	1	2.6
6weeks	26	68.4
2weeks	5	13.2
Others/not sure	8	21.5
Feeding options not advised		
Mixed feeds	20	52.6
Infant formula	12	31.6
Exclusive breastfeeding	7	18.4

Table 6: *Shows the association between knowledge of prevalence, routes of transmission and meaning of PMTCT and some sociodemographic factors of respondent's*

Sociodemographic factors	Occupation	Gender	Working experience	Age Group
Country prevalence	0.000*	0.001*	0.059	0.028*
State prevalence	0.001*	0.021*	0.003*	0.001*
Knowledge of Transmission Routes				
Through blood transfusion	0.456	0.062	0.926	0.867
Through sharing of spoon	0.316	0.136	0.001*	0.279
When eating together	0.973	0.189	0.663	0.309
Sharing of sharp objects	0.351	0.451	0.052	0.872
Vertical transmission	0.471	0.229	0.616	0.760
During Pregnancy	0.053	0.781	0.533	0.172
Through breast milk	0.304	0.394	0.359	0.013*
At delivery	0.735	0.623	0.445	0.003*
Meaning of PMTCT	0.000*	0.034*	0.448	0.068

DISCUSSION

This study endeavoured to assess the knowledge and practice of PMTCT among health care providers in healthcare facilities in Ilorin, Nigeria. The general assumption is that there is wealth of knowledge among the personnel managing the patients. Most of the health care providers were nurses accounting for 64% of the respondents which is the general trend in most hospitals. General knowledge concerning transmission of HIV was good with 213(95.5%) believing that vertical transmission of HIV to baby from mothers could be prevented by administration of antiretroviral drug to the mother. This is in contrast to the study of Hengten et al which revealed that 73% of the health care providers studied believed that a baby born of an HIV positive woman invariably would be infected[11]. However there were still some misconceptions, 15.2% of the respondents still felt it could be transmitted through sharing of spoons and eating together. This is rather unexpected bearing in mind that this view is that of medical personnel and health care givers who should know better and be able to educate the populace. This is also supported by Hesse's study which showed that Knowledge of all the forms of HIV transmission was rather limited among medical personnel[12]. In Sadob et al study some health care givers also thought that transmission was possible through mosquito bite and handshake[13]. Knowledge of the prevalence of HIV in the country was fairly well known by 75(33.6%) of respondents, this is contrary to the study by Nkole in Zambia where only 10.7% of care providers knew the prevalence of HIV in their country[14]. Only 46(20%) had had any form of training in PMTCT this may explain the gaps in the knowledge of PMTCT by the respondents seen

in the study. This is similar to Kocić et al that revealed insufficient professional education regarding HIV and AIDS[15]. Comprehensive training has been shown to improve PMTCT knowledge and delivery[15,16]

Regarding practices, pre and post test counselling were done in the health facilities of 88% of the respondents although only 38(17%) worked in centres where antiretrovirals were actually administered, 73% referred them immediately they were detected to tertiary centres around which may be an indirect way of avoiding the HIV positive women. Although this study concentrated on the knowledge and practices this avoidance of HIV positive patients suggests a restrictive and negative attitude, this is similar to what was obtained by Aisien et al and Hengten[11, 17]. Others would continue antenatal care but deliver the patient by caesarean section before referral to centres for drugs while some would just continue managing the patient with no intervention at all, thereby increasing the chances of mother to child transmission. This management modalities could possibly be to avoid loss of patients to these centres and thereby loss of money that would have been paid. The low percentage of centres administering ARVs could however possibly be because of insufficient knowledge of use of the drugs and monitoring of the patients since the drugs are quite accessible. This is similar to the study of Mobisson which showed that healthcare providers have limited knowledge levels regarding the use of antiretroviral drugs in the prevention of Mother-To-Child Transmission[18].

There appeared to be an almost complete absence of safe obstetric practices such as vaginal cleansing with antiseptic solution, delayed rupture of membranes or avoidance of episiotomy among the respondents. This could possibly due to an increased emphasis on use of antiretrovirals because of the efficacy and degree of protection against MCTC achieved with less emphasis on these obstetric practices. This is contrary to what obtained in other studies where there was a dedicated adherence to the safe practices[13].

Single drug ARV therapy was the most common method of ARV administration for the mothers by 16(42.1%) and this was usually administered throughout pregnancy, labour and puerperium. 8(21.1%) gave two antiretrovirals while 2(5.3%) claimed three ARVs were administered to the patients. The remaining 12 gave no response to the question. This revealed a grossly inadequate use of ARV, the single therapy ARV (option A) which was the most frequently used was not even properly used[19]. This could further support the observation that there is limited knowledge by health care providers. ARV use was generally commenced as from 14 weeks of conception, for patients who presented early enough and who were not previously known to be HIV positive.

Prophylactic ARV use in the babies also revealed deficiencies in practice. This revealed poor knowledge of PMTCT guidelines and regime, most of the methods of ARV use did not fall into any particular regime in the guidelines. This was supported by the findings of Nwko that revealed inaccurate knowledge by health care providers concerning HIV related issues[5].Options A and B are the methods still widely used in the country as this are the antiretroviral drug use plans inside the latest national guideline presently available. Obvious lack of knowledge of antiretroviral continuation or discontinuation is evident with 55.3% of respondents feeling that antiretroviral should be discontinued in breastfeeding HIV positive women six months after delivery

whether or not they had stopped breastfeeding. Knowledge of the prevalence of HIV in the country and state were statistically significantly affected by occupation, gender and age, this is contrary to the study by Aisien and Shobowale which found that there was no statistically significant difference in knowledge between different professionals[17]. Working experience showed a statistical significance in the knowledge of transmission of HIV through sharing of spoons. This could possibly be as a result of more exposure to management of HIV positive patients by personnel with longer years of service. Age also showed statistical significance in transmission through breastfeeding and at delivery. This is however contrary to what was reported by Nkole who found that there was no association with gender, education, or length of service in delivery of PMTCT.

CONCLUSION

General knowledge of PMTCT was poor among care providers in private hospital health care facilities in Ilorin. Only few hospitals actually gave antiretroviral therapy to positive women and even those did not follow and clear cut guidelines. There is a need for capacity building to provide a cadre of health care providers with updated knowledge and practice of PMTCT. Training and retraining on PMTCT should be encouraged as a matter of urgency. Employers should be mandated to make available copies of the national guideline on PMTCT for the staff and should encourage the health care providers in their units to go for training in PMTCT.

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