

Full Length Research Paper

Knowledge, attitudes and practices of nurses' on prevention of mother-to-child transmission (PMTCT) of human immuno-deficiency virus (HIV) in State Specialist Hospital, Maiduguri, Borno State

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Pregnant women living with human immuno-deficiency virus (HIV) infection are at risk of transmitting HIV to their babies. Most of this transmission occurs during pregnancy, labour and delivery and during breast feeding. The nurse/midwife as a change agent has an important role to play in ensuring prevention of mother to child transmission. Effective and efficient performance of this role by nurses is predicated on their adequate knowledge, attitude and practices. This study assessed the knowledge, attitude and practice of nurses in State Specialist Hospital Maiduguri towards the prevention of mother-to-child-transmission (PMTCT) of HIV. This is a descriptive cross sectional survey. A total sample of 50 nurses participated in the study and data was collected through a self-developed and validated questionnaire. Analysis was done manually; descriptive statistics of frequency count and percentages was used to answer research questions. The mean age of respondents was 40 ± 6.2 years. Many of the nurses had multiple sources of information on PMTCT; unfortunately multiple sources of information did not translate significantly to improved knowledge of the participants as shown by their low knowledge on PMTCT of HIV (65.7%). The study further reveals a general negativism in the attitudes (41.8%) of respondents towards prevention of mother to child transmission of HIV. Greater percentage of the respondents showed a discriminatory attitude towards pregnant women living with HIV/AIDS. The practice of PMTCT was generally very low (56.9%). This study demonstrates that nurses in State Specialist Hospital Maiduguri are inadequately informed on practical issues in the prevention of MTCT of HIV. They are therefore handicapped to play an effective role in this important aspect of prevention of HIV. Sensitization, capacity building and appropriate clinical settings remain indispensable assets for meaningful intervention results.

Key words: Prevention of mother-to-child-transmission (PMTCT), knowledge, attitude, practice, Maiduguri.

INTRODUCTION

The spread of human immuno-deficiency virus (HIV) globally has taken the turn of wild fire. Recent reports

alarmingly showed that approximately 36.9 million people worldwide are living with HIV/AIDS, of these; 2.6 million

are children less than fifteen years (World Health Organization (WHO), 2014). The WHO further reiterated that an estimated 2.0 million individuals became newly infected with the virus in year 2014, out of which over 220,000 of these newly infected cases are children less than fifteen years and most of these children live in sub-Saharan Africa. In Nigeria, report has it that of all people living with HIV globally, 9% live in Nigeria (UNAIDS, 2014). Borno State north-eastern Nigeria is one of the states with highest prevalence of HIV/AIDS in Nigeria (Borno State Agency for Control of AIDS, 2011).

It is interesting to note that young women of ages 15 to 24 years are four times more likely to be infected than men of similar age; this is the age bracket during which many women become mothers and begin to raise families (USAIDS, 2006). This implies a high risk of vertical transmission through these women, thus necessitating development of appropriate preventives strategies at this stage. Vertical transmission also known as mother-to-child-transmission (MTCT) is when an HIV-infected woman passes the virus to her baby (President's Emergency Plan for AIDS Relief, 2010). This can occur during pregnancy, labour, delivery and breastfeeding. Without intervention, an HIV-infected woman has more than 30% chances of passing the virus onto her baby through the first three means while a further 5 to 20% of the children will become infected through breastfeeding (De-Cock et al., 2000). With the introduction of PMTCT globally, the strategy has reduced the risk of MTCT from nearly 40% to fewer than 5% thereby making PMTCT a gateway for HIV prevention, treatment, and care support services for the whole family (United Nations International Children Education Fund (UNICEF), 2010).

The nurse/midwife as a change agent has an important role to play in ensuring that MTCT is reduced to the minimal level. This role is sequenced alongside the major approaches for PMTCT which includes, primary prevention of pregnancy among women living with HIV; preventing transmission from HIV-infected mothers and infant (WHO, 2005). Effective and efficient performance of this role by nurses is predicated on their adequate knowledge, attitude and practices of this role because evidence has shown that strong knowledge of a disease process and its preventive measures demonstrates better practice of the preventive measures (Smyth et al., 2007). Similarly, those with more positive attitude towards preventive measures are influenced by better knowledge in taking precautionary measures against the disease.

Current laid down guidelines of PMTCT involves effort to in-cooperate HIV counselling and testing (HCT) into antenatal care and during delivery (WHO, 2014).

Counselling is supposed to provide information about HIV-virus and the disease (AIDS), mode of infection, effective intervention that protect the infant and reduces morbidity and mortality in adults as well. However, anecdotal observation in many peripheral health centres and hospitals around Borno State reveals that, counselling and HIV testing is not done at delivery and sometimes during antenatal visits too. This may be due to inadequate knowledge or negative attitude of the nurses towards the preventive objective. This failure is inimical to the progress of the battle against vertical transmission of HIV/AIDS since lack of Voluntary Counselling and Testing (VCT) may hamper PMTCT goals. This study was therefore designed to assess nurses' knowledge, attitude and practice of prevention of HIV transmission from mother to child in State Specialist Hospital, Maiduguri.

MATERIALS AND METHODS

A non-experimental cross-sectional descriptive survey design was adopted for the study to enable the researchers describe nurses' knowledge, attitude and practice regarding PMTCT of HIV.

Study setting

The research was conducted in the Obstetric Department and PEPFAR Clinic of State Specialist Hospital Maiduguri, the capital city of Borno state. Borno State is located in the north-eastern part of Nigeria. The institution has 23 wards with three out-patient clinics. The hospital provides medical, surgical and maternity services for clients. It also serves as a referral point for primary health care centres. The Obstetric Department of the hospital consist of antenatal clinic, antenatal, maternity/labour and post-natal wards. The antenatal ward has 20 beds for in-patients while the antenatal clinic has the capacity for accommodating at least 50 outpatients at a time. The maternity ward has 11 beds, post natal ward 32 beds. Toilet facilities are located outside the wards for public convenience. The PEPFAR clinic of the hospital also has a capacity for accommodating averagely 150 outpatients at a time.

Sample and sampling technique

All the registered nurses working in Obstetrics Department and PEPFAR clinic of the hospital (except those on annual leave) were involved in the study. A total of 52 nurses participated in the study.

Instrumentation

The instrument for data collection was a self-developed and validated questionnaire. The instrument was pre-tested at University of Maiduguri Teaching Hospital using a test re-test method. Ten copies of the questionnaire were administered to the

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same nurses and repeated in a space of two weeks, the reliability coefficient of 0.72 was determined which made the instrument fit for use in the study. The questionnaire consists of four sections (section A to D). Section A elicited responses on the demographic data of the respondents. Section B with multiple choice questions targeted knowledge of the respondents on PMTCT of HIV. Score “1” was given for correct answer and “0” for incorrect answer. The total score was converted into percentage. The mean percentage for the correct and incorrect answers was taken, and further compared with McDonald’s standard of learning outcome measured criteria. McDonald’s standard of learning outcome measured criteria was used to categorize nurses, level of knowledge regarding PMTCT. This set of criteria was developed in order to measure the actual performance of students’ learning in the educational institution. This criterion is categorized into five groups (McDonald, 2002).

Level of knowledge/practice percentage of scores	Composite
Very low	<60%
Low	60%-69.99%
Moderate	70%-79.99%
High	80%-89.99%
Very high	90%-100%

Section C dealt with the attitude of respondents towards PMTCT where respondents were asked to rate the four levels of attitude ranging from 1 to 4, 4 = strongly agree, 3 = agree, 2 = disagree and 1 = strongly disagree. The questionnaire includes both positive and negative item questions. The scores of negative items were reversed. The scores from the positive items indicated the positive attitude as the mean percentages were taken. Total scores of attitudes were collapsed and categorized into dichotomous variables (negative level and positive level) based on mean percentage. Total scores of attitudes were calculated and compared with Mc Donald three levels of measuring attitude (negative level, neutral level and positive level) based on mean percentage. The scores of each level were as followed:

Level of attitude	Score
Negative	<64.99%
Neutral	65%-74.99%
Positive	>75%

Section D focused on the practices of the respondents as regards PMTCT measures. One correct option with other incorrect options was given. Score “1” was given for correct answer and “0” for incorrect answer. The total score was converted into percentage. The mean percentage for the correct and incorrect answers was taken, and further compared with McDonald’s standard of learning outcome measured criteria.

Method of data collection

The researchers obtained approval from the research and ethical committee of Specialist Hospital Maiduguri. Consent was obtained from the respondents after explanation of the purpose and objective of the research. The researchers with the help of research assistants then administered copies of the questionnaire directly to the respondents. After two hours, the instrument was retrieved, out of the 52 copies of the questionnaire administered; only 50 were returned. The exercise lasted for four days (1st to 4th June, 2014). The identities of the respondents remained anonymous throughout the study period. The retrieved copies of the questionnaire and responses were treated with confidentiality after retrieval.

Data analysis

Data collected was analysed manually using descriptive statistics of simple frequencies and percentages to answer research questions.

RESULTS

Demographic variables of the respondents

The demographic variables of the respondents shows that majority 22 (44%) of the respondents were between ages 35 and 44 years, 21 (42%) were between 45 and above years while 6 (12%) of the respondents were between 25 and 34 years old. The mean age of the respondents was 40 ± 6.2 years. 42 (84%) of the respondents were married while 8 (16%) were living alone. Educational qualification shows that 48 (96%) were diploma holders, most 46 (92%) of the respondents were professionally double qualified with Registered Nursing and Registered Midwifery while the rest 4 (8%) were single qualified with only Registered Nursing certificates. The cadre of the respondents shows that 33 (66%) were Chief Nursing Officers while 6 (12%) were Assistant Chief Nursing Officers. The years of post-qualification experience of the respondents shows that only 5 (10%) practiced less than 10 years, majority had more than ten years post registration experience.

Source of information

It was also shown that majority 34 (68%) of the respondents had their first source of information concerning PMTCT of HIV from workshop or seminars, 6(12%) through continuous education programme, while 5(10%) had it during their school days, 5 (10%) through other media such as reading of journals/text books, radio/television and newspapers. The mean percentage of the correctly answered questions by the nurses as computed in Table 1 was 65.7%. Comparing the percentages with McDonald’s standard of learning outcome measured criteria;

Level of knowledge/practice percentage of scores	Composite
Very low	<60%
Low	60%-69.99%
Moderate	70%-79.99%
High	80%-89.99%
Very high	90%-100%

65.7% indicates low knowledge of nurses on PMTCT.

Table 2 put forth the mean percentages of both correct and in-correct responses of nurses on attitude towards PMTCT as 41.8 and 58.2%, respectively. A comparison of the percentage of correct responses with McDonald

Table 1. Knowledge of nurses about PMTCT of HIV.

Variable	Correct response	Incorrect response
	f (%)	f (%)
Awareness of PMTCT of HIV/AIDs	48(96)	2(4%)
How often do you receive information concerning PMTCT?	33(66)	17(34)
Babies can be prevented from HIV during pregnancy and breastfeeding	50(100)	0(0)
Drug commonly used in PMTCT on infant	28(56)	22(44)
1 st VCT done for a pregnant woman	44(88)	6(12)
Mothers Need of Post-Test Counselling when Negative	36(72)	14(28)
When should Infant of HIV-positive mother to be tested and re-tested ?	31(62)	19(38)
One best infant feeding method for HIV-positive mother	30(60)	20(40)
What is the best Strategies for PMTCT of HIV ?	3(6)	47(94)
When should HIV counselling be initiated?	30(60)	20(40)
Discouragement of mixed infant feeding practices	28(56)	22(44)
Awareness on predisposing factors to MTCT of HIV	33(66)	17(34)
Mean percentage	65.7%	34.3%

criterion of measuring attitude is as follows. The scores of each level were as followed:

Level of attitude	Score
Negative	<64.99%
Neutral	65%-74.99%
Positive	>75%

The result (41.8%) indicates that nurses possessed negative attitude toward PMTCT of HIV. The respondents scored averagely 56.9% as shown in Table 3. Comparing the percentages with McDonald’s standard of practice measured criteria we have;

Level of knowledge/practice percentage of scores	Composite
Very low	<60%
Low	60%-69.99%
Moderate	70%-79.99%
High	80%-89.99%
Very high	90%-100%

56.9% indicates very low PMTCT practice among nurses.

DISCUSSION OF FINDINGS

The result of this study shows that many of the nurses had multiple sources of information on PMTCT. Probably the more experienced nurses had more sources of information on PMTCT than their less experienced colleagues. However they were less likely to have had formal lectures on PMTCT. The finding agrees with a similar survey by UNAIDS in South Africa on nurses (UNAIDS, 2003). Unfortunately multiple sources of information did not translate significantly to improved

knowledge of the participants as shown by their low knowledge of PMTCT (65.7%). This finding is supported by Bennett and Weale (1997) who revealed that “awareness training programme did not make any significant difference in the knowledge and attitude between those that attended and those who did not”. This pattern has also been seen in local studies on nurses and other health care workers in Oweri, Imo and Port-Harcourt Rivers States of Nigeria (Ndikom and Onibukun, 2007; Okike et al., 2011). The study further reveals a general negativism in the attitudes (41.8%) of respondents towards prevention of mother to child transmission of HIV. Majority of the respondents showed a discriminatory attitude towards pregnant women living with HIV/AIDS as they agreed that HIV pregnant women deserve different care and as such should have special units for special measures to be adopted for PMTCT, 68% of the respondents think nurses deserve special incentives before they care for HIV positive mothers which means that these women should be made to pay more. This discriminatory attitude has been seen among health care worker in other studies (Adebanjo et al., 2003; Sodoh et al., 2006; Okike et al., 2011). The negative attitude towards HIV positive patients reported in this study is also partly in consonant with the findings of Hentgen et al. (2008) in Tamatave and Awambeng (2015) in Bamenda Republic of Cameroun. Both studies reported that 21% of health care workers were of opinion that HIV patients should be treated in isolation. This negative attitude of nurses towards HIV-positive patients may not be unconnected to inadequate knowledge and lack of internalization of knowledge which leads to the experiencing of negative feeling towards the patients (Awofeso, 2010; Nguyen et al., 2009). Similarly, the negative attitude exhibited by the nurses may also be

Table 2. Nurses' attitude toward prevention of mother to child transmission of HIV.

Variable	Correct responses	In-correct responses
	f(%)	f(%)
I always attend to pregnant women	36(72)	14(28)
HIV positive mother deserves different care	5(10)	45(90)
Behaviour of nurses affects attitude of client towards information passage negatively	27(54)	23(46)
Willingness of professional colleagues to give support when caring for HIV positive mother	23(46)	27(54)
Educating HIV positive mothers is a confidential issue	28(56)	22(44)
Fear of contagion affects the care I render to HIV positive mothers negatively	20(40)	30(60)
Nurses are rude towards HIV positive mothers	38(76)	12(24)
Nurses look down on HIV positive mothers	12(24)	38(76)
Palpation wearing personal protection devices	4(8)	46(92)
Nurses need incentives before they care for HIV positive Mothers	16(32)	34(68)
Mean percentage	41.8%	58.2%

Table 3. Nurses' practice of PMTCT measures.

Variable	Correct Response	In-correct response
	f(%)	f(%)
Have you Manage a HIV-positive pregnant woman before?	50(100)	0(0)
Do you pre-counsel your client alone before conducting HIV testing?	22(44)	48(56)
Do you obtain informed consent before conducting HIV testing?	20(40)	30(60)
Do you always pre-counsel before HIV testing?	14(28)	36(72)
Do you counsel HIV-positive pregnant mothers on safe infant feeding?	50(100)	0(0)
Do you often counsel HIV-positive pregnant mothers on safe infant feeding at every visit?	40(80)	10(20)
Keep your client when found to be HIV-positive on same wards or rooms with others	17(34)	33(66)
Do you encourage HIV-positive pregnant women to do cd4 count?	3(6)	47(94)
Do you drop oral Antiretroviral for the baby immediately after delivery	40(80)	10(20)
Mean percentage	56.9%	43.1%

possibly due to fears of contagion which negatively affects the care they render to HIV-positive mothers.

The practice of PMTCT (56.9%) was generally very low. The low practice observed among nurses was also reported in some African countries such as Lusaka Zambia and Bamenda Cameroun (Nkole, 2012; Awambeng, 2015). It is not surprising that the nurses exhibited low practice of PMTCT. The simple reason is that their low practice is not unconnected to their level of knowledge since better practice is predicated on adequate knowledge (Kever et al., 2015). More than half of the nurses felt strongly that all pregnant women should be screened for HIV/AIDS with or without their consent. This practice of screening without patients' consent was shown by Obi and Ifebunandu (2006) to result in a feeling of distrust by victims. Moreover this contravenes many international charters to which Nigeria is signatory on the

rights of women and patients and the professional codes and conduct of nurses (United Nation, 2003).

CONCLUSION

This study demonstrates that nurses in State Specialist Hospital Maiduguri are poorly informed on practical issues in the prevention of MTCT of HIV. They are therefore handicapped to play an effective role in this important aspect of prevention of HIV. Most of these nurses express willingness to update their knowledge and improve their attitude and practice of PMTCT. Sensitization, capacity building and appropriate clinical settings remain indispensable assets for meaningful intervention results. Organizing nation-wide continuing nursing education will go a long way towards preparing

them to play important roles in the planned up-scaling and institutionalization of PMTCT in Nigeria. If we have to contend with the monstrous challenge of the pandemic and meet up with the 2030 target of eradicating the pandemic, we must reposition and educate our nurses to meet up with the international best practices.

RECOMMENDATION

Health promotional activities and behavioural change through effective communication routes such as refresher course, trainings and workshops should be promoted. This would take targeted health education messages beyond impacting knowledge. More elaborate studies should be carried out in this field in other parts of Nigeria in order to ensure improvement in knowledge and behaviour.

STRENGTHS AND WEAKNESSES OF THE STUDY

Strengths

This was an anonymous survey thus people were more willing to participate and give even wrong answers without feeling intimidated. Due to the high response rate (100%) in this study the risk of selection bias was minimized.

Limitation of the study

The researcher was limited to little number of nurses working in the study area hence meagre sample size.

Conflict of interest

The authors have not declared any conflict of interest

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