



Knowledge, Attitude and Practice Survey of the Recommended Infant Feeding Guidelines for HIV Positive Mothers by Primary Health Care Workers in Uyo, Nigeria

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Authors' contributions

This work was carried out in collaboration among all authors. Author EAB designed the study, wrote the protocol, literature search and wrote the first draft of the manuscript. Author AME coordinated data collection and entry and wrote the second drafts. Author UEE performed the statistical analysis of the manuscript and wrote the results section. All authors read and approved the final manuscript.

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ABSTRACT

Background: Safe and appropriate feeding is a key intervention that can prevent mother to child transmission of HIV. This study aimed at determining the level of knowledge, attitude and current practice of primary health care (PHC) workers in Uyo of the recommended infant feeding guidelines for infants of HIV-infected mothers.

Methodology: This was an analytical cross-sectional study carried out among 130 primary health care workers in 15 PHCs in Uyo metropolis, Akwa Ibom State, Nigeria. Data was collected using self-administered questionnaires in English and analyzed using the Statistical Package for Social Sciences (SPSS) version 25.0.

Results: Nineteen (14.6%) and 111 (85.4%) respondents had a fair and poor level of knowledge of MTCT of HIV and infant feeding options respectively. One hundred and six (81.5%) and 100

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(76.9%) respondents had received training on PMTCT of HIV and infant feeding counselling for HIV-infected mothers respectively. The majority of respondents exhibited positive attitude regarding infant feeding options for HIV exposed babies. One hundred and twenty (92.3%) considered it correct for an HIV-infected woman to breastfeed her baby and 125 (96.2%) considered breast milk alone adequate food for babies in the first 6 months of life. Predictor of negative attitude was lack of training on infant feeding counseling (OR 15, P=0.02, 95%CI 1.64-138.07). Most 107 (82.3%) cited exclusive breastfeeding with introduction of complementary feeds at 6 months as the most common method accepted by their clients.

Conclusion: Gaps in the knowledge of PHC workers in Uyo on MTCT and Infant feeding options and practice were identified which can be addressed by qualitative training, effective monitoring and supportive supervision.

Keywords: Knowledge; attitude; PHC workers; infant feeding options.

1. INTRODUCTION

Mother to child transmission (MTCT) of Human Immunodeficiency Virus (HIV) occurs during pregnancy, delivery and breastfeeding [1]. In 2016, an estimated 220,000 children living with HIV and 37,000 newly infected children in Nigeria were from MTCT [2], accounting to about 30% of the global burden of HIV infected children [3]. However, effective intervention programmes during pregnancy, labour and breastfeeding could reduce the risk of MTCT from 15-40% to less than 2% [4].

Breastfeeding by mothers with HIV confers an additional 14% risk of HIV transmission over and above in-utero and intra-partum transmission [5]. This probably prompted the initial prevention of mother-to-child transmission of HIV (PMTCT) strategy recommending the avoidance of breastfeeding of infants by HIV infected mothers [6]. With the concomitant use of highly active antiretroviral therapy (HAART) prophylaxis in breastfeeding mothers, the risk of MTCT has significantly reduced [6,7]. In the context of maternal HIV infection, the benefits of breastfeeding are weighed against its risk of HIV transmission and that of replacement feeding with its cost, risk of infectious morbidity and mortality from diarrhoeal disease and malnutrition [8-10]. The effectiveness of anti-retroviral therapy prompted the recommendation by World Health Organization (WHO) that HIV infected mothers should continue to breastfeed their infants until 12 months of age [11]. The current 2016 Nigerian HIV prevention and treatment guidelines which is based on the WHO guidelines recommends that HIV positive mothers should breastfeed their babies exclusively for 6 months while on HAART, thereafter complimentary feeds should be introduced at 6 months and breastfeeding

continued until 12 months [3]. These guidelines further states that avoidance of breastfeeding should only be recommended when replacement feeding meet the AFASS criteria i.e. being Acceptable, Feasible, Affordable, Sustainable and Safe [12].

Contrary to this WHO recommended infant feeding guidelines, studies reveal exclusive replacement feeding using breast milk substitutes as still the most common mode of infant feeding among HIV positive mothers in Nigeria [8,9,13-16].

Poor knowledge of the recommended infant feeding guidelines for HIV positive mothers by health workers [17,18] as well as a negative attitude to breastfeeding by HIV positive mothers [19] have been reported. Most of these studies focused on secondary and tertiary health workers while neglecting primary health care workers. Furthermore, none of such studies have ever been done in Akwa Ibom State, Nigeria hence the need for this study among primary health care workers who are usually the first to be approached by mothers. Findings will help in the planning and implementation of interventions to promote uptake of safer infant feeding practices by HIV positive mothers and identify training needs of the PHC workers in Uyo, Nigeria on PMTCT.

2. METHODS

The study was carried out in all the PHC facilities in Uyo metropolis, Akwa Ibom State, Nigeria. The State is located in the South-South geopolitical zone of Nigeria. The state is reported to have the highest HIV prevalence in Nigeria [20]. Uyo is the capital of the state and the most densely populated Local Government Area (LGA) in the state with a population of over 500,000 people

[21] with rural and urban areas. In Uyo, there are 15 PHCs, a general and 2 tertiary hospitals as well as many private health facilities. All 15 PHCs offer comprehensive services for PMTCT of HIV including HIV counseling and testing, family planning, antenatal care, delivery services, post-natal care and infant feeding counselling. The centres are mostly staffed by nurses/midwives and Community Health officers/Extension workers.

This study used an analytical cross-sectional study design to achieve the objectives of the study. The target population were all healthcare workers offering infant feeding counselling services at the PHCs in Uyo metropolis. The sample frame includes a list of all 149 healthcare workers employed in the services of the Local Government Service Commission and posted to the 15 PHCs in Uyo. Data was collected using a pre-tested self-administered English language questionnaire adapted from the Family Health International (FHI) Baseline Assessment Tools for PMTCT [22] and modified to suit the objectives of the study. Pre-testing of the questionnaire was done on 20 healthcare workers from 4 PHC facilities in Abak LGA, a nearby city in the same state to ensure the validity and reliability of the results [23] and its suitability for the study. The questionnaire consisted of 25 questions divided into 5 sections namely: socio-demographic characteristics of the respondents, knowledge of mother-to-child transmission of HIV, knowledge of infant feeding options for HIV positive mothers, attitude about infant feeding options and infant feeding practices.

Using the prevalence of respondents with good level of knowledge in infant feeding practices of 61.1% from a previous study [17], a confidence level of 95% and an acceptable margin of error of 5%, a minimum sample size of 106 was obtained (StatCalc® [Epi Info 7, CDC Atlanta]). To compensate for incomplete information on the questionnaire, a 10% increase on this sample size was added to give the minimum sample size of 117. However, due to the small size of the potential participants in the sampling frame, total population [24] was used and all PHC workers in Uyo metropolis were recruited with a minimum sample size of 117 targeted.

Data was analysed using the Statistical Package for Social Sciences (SPSS) IBM Statistics for Windows, Version 25.0 (Armonk, NY: IBM Corp).

Each correctly answered question was given a score of one (1) for questions in the sub-theme regarding knowledge of infant feeding practices and zero (0) for each wrong answer. The only question for attitude of the health care workers was treated as a categorical variable with two levels. Eight questions assessed the practice of the healthcare workers regarding infant feeding in babies born to HIV-infected mothers. A correctly answered question in this section was given a score of 2 points and an incorrect response a score of 0. The "knowledge of infant feeding options" sub-theme had a total possible score of twenty-one (21). The percentage of overall scores for each respondent was then computed and level of knowledge was categorized as poor, fair and good for scores less than 40%, 40-60% and > 60% respectively. The attitude of the healthcare workers about infant feeding options was captured as a binary categorical variable.

Univariate and multivariate ordinal logistic regression models and univariate and multivariate binomial logistic regression models were used to identify factors which were independently associated with variability in the level of knowledge and attitude of the respondents towards infant feeding for babies born to HIV-infected mother. P-value of less than 0.05 was deemed statistically significant.

3. RESULTS

A total of 130 PHC workers were recruited. The greater proportion of respondents 56 (43.1%) were from the PHC operational base and the least was from PHC Nsukara 1 (0.8%). The mean age of respondents was 34.8 ± 9.3 years with a female preponderance, 112 (86.2%). The modal profession were Community Health Officers 33 (25.4%). The median duration of practice was 4 years (IQR 3 – 9 years). Most 106 (81.5%) of the respondents had received training on prevention of mother-to-child transmission of HIV and a similar proportion 100 (76.9%) had been trained on infant feeding counselling for HIV-infected mothers (Table 1).

Regarding prevention of MTCT of HIV, sixty-four (49.2%) were correct in their opinion that HIV can be transmitted during pregnancy, delivery and breastfeeding and 26 (20.0%) said during delivery and breastfeeding. One respondent (0.8%) believed HIV cannot be transmitted from mother to child.

Concerning prevention of MTCT of HIV, thirty-four (26.2%) said only early awareness of HIV status was adequate for prevention of MTCT. Thirty-five (26.9%) respondents believed early awareness of maternal HIV status, use of anti-retroviral drugs (ARVs) in infected mothers and use of prophylactic ARVs in sero-exposed babies at birth were the basic principles of preventing MTCT of HIV.

Ninety-five (73.1%) would most likely advice an HIV-infected mother to have the sero-exposed baby exclusively breastfed for 6 months before introduction of formula feeds. Eleven (8.5%) would prefer to offer the mother formula feeds only for the first 6 months of life. On knowledge

of infant feeding options, 63 (48.5%) of the respondents correctly answered that mixed feeding has the highest risk of transmission of HIV. None of the participants could state the five conditions when it may be advisable to offer replacement feeds to an infant born to an HIV-infected mother. On the whole, 19 (14.6%) had a fair level of knowledge while 111 (85.4%) had poor level of knowledge. The mean knowledge level was 31.8 ± 8.8 (Table 2).

Most 120 (92.3%) had a positive attitude towards an HIV-infected woman breastfeeding her baby, while 125 (96.2%) said breast milk alone was adequate for growth in the first 6 months of life. However, 10 (7.7%) of them did not think an HIV-

Table 1. Socio-demographic characteristics of respondents

Variables	Frequency	Percentage
Number of staff in PHCs		
PHC base, Uyo	56	43.1
Ikot Okubo	10	7.7
Ikot Ebo	9	6.9
Mbiabong	8	6.1
Idoro	7	5.4
Ewet	7	5.4
Ifa Ikot Okpon	6	4.6
Mbaketoi	5	3.9
Atan Ofot	5	3.9
Ikot Ofon	5	3.9
Nsukara	1	0.8
Others (Model HC, Ikot Ayan, Ifa Atai, Aka Offot)	11	8.5
Age (years)		
Mean \pm standard deviation	34.8 \pm 9.3	
Gender		
Males	18	13.8
Females	112	86.2
Profession		
Community Health Officers	33	25.4
Nurses/midwives	32	24.6
Community Health extension workers	27	20.8
Laboratory scientist	12	9.2
Others	26	20.0
Religion		
Christian	126	96.9
Muslim	4	3.1
Median duration of practice [years] (IQR)		
	4 (3-9)	
Previously Trained on MTCT of HIV		
Yes	106	81.5
No	24	18.5
Previously Trained on infant feeding counselling		
Yes	100	76.9
No	30	23.1

IQR=Inter quartile range

Table 2. Respondents' knowledge of prevention of mother to child transmission of HIV

Knowledge questions	n (%)
When can HIV be transmitted from mother to child	
During pregnancy	20(15.4)
During delivery	2 (1.5)
During breastfeeding	6 (4.6)
Cannot be transmitted	1 (0.8)
During pregnancy, delivery and breastfeeding	64 (49.2)
During pregnancy and delivery	7(5.4)
During pregnancy and breastfeeding	4(3.1)
During delivery and breastfeeding	26(20.0)
How can mother to child transmission of HIV be prevented?	
By early awareness of mother's HIV status	34(26.2)
By use of ARVs in infected mother	27(20.8)
By use of prophylactic ARVs for sero-exposed babies at birth	2(1.5)
By mothers not breastfeeding	1 (0.8)
Early awareness of mother's HIV status &use of ARVs in infected mother	17(13.1)
Early awareness of mother's HIV status, use of ARVs in infected mothers, use of prophylactic ARV for sero-exposed babies	35(26.9)
Early awareness of mothers, use of ARVs in mothers, prophylactic ARVs for babies, mothers not breast feeding	14(10.8)
What option on infant feeding would you most likely advice a HIV infected mother for her infant in the first 6 months of life	
EBF with introduction of complementary feeds at 6 months	95(73.1)
Formula feeds only	11 (0.8)
Both breastfeeding and formula feed	2 (1.6)
Both EBF and exclusive formula feeding and ask to make a choice	11(8.5)
Others	11 (8.5)
Which infant feeding option has the highest risk of HIV transmission	
Exclusive breastfeeding with early cessation	52 (40.0)
Exclusive infant formula feeding	10 (7.7)
Mixed feeding (giving both breast milk and formula milk)	63 (48.5)
Cow's milk	5 (3.8)
Level of Knowledge	
Fair	19(14.6)
Poor	111(85.4)
Mean(Standard deviation) Knowledge score	31.8+ 8.8

infected woman should breastfeed her baby. One hundred and twenty-eight (98.5%) of the respondents were working in PHCs that offer infant feeding counsel to HIV-infected mothers and 122 (93.9%) were personally involved in offering counseling and advise to HIV-positive mothers.

On timing of counseling, sixty-four (49.2%) give counseling before delivery, 62 (47.7%) offer counseling after delivery and 4 (3.1%) of the respondents considered that counseling should be done both before and after delivery. Ninety three (71.5%) and 13 (10.0%) respondents noted that their centre has and did not have a copy of the national guidelines on infant feeding for HIV sero-exposed babies respectively while 24 (18.5%) were not aware of the availability of

the guidelines in their centre and therefore had never used them. A checklist had been used by 95 (73.1%) of the respondents. The most common infant feeding option the accepted by mothers was exclusive breastfeeding with introduction of complementary feeds at 6 months 107 (82.3%). Infant feeding counseling and support for mothers was offered by 116 (94.6%) and 120 (92.3%) believe their clients actually practice the infant feeding counsel given (Table 3).

No socio-demographic or training factor was associated with level of knowledge at both univariate and multivariate levels. There was a 15 times increased likelihood of having poor attitude about HIV sero-exposed infant feeding practice if the individual has not had training on

Table 3. Attitude and infant feeding options

Variables	Frequency	Percent
Attitude about infant feeding options		
Do you consider it correct for HIV⁺ mothers to breastfeed their babies?		
Yes	120	92.3
No	10	7.7
Do you think breastfeeding alone is enough in the first 6 months for proper growth?		
Yes	125	96.2
No	5	3.8
Infant feeding practices		
Your facility offers infant feeding counselling to HIV positive mothers		
Yes	128	98.5
No	2	1.5
Do you give infant feeding counselling to HIV infected mothers?		
Yes	122	93.8
No	8	6.2
When should infant feeding counselling be offered?		
Before delivery	64	49.2
After delivery	62	47.7
Both	4	3.1
My facility has a copy of the national guidelines on infant feeding for HIV-positive mothers		
Yes	93	71.5
No	13	10.0
Don't know	24	18.5
Is a check list used for infant feeding counselling?		
Yes	95	73.1
No	35	26.9
What is the most common feeding method the HIV positive mothers accept?		
EBF with introduction of complementary feeds at 6 months	107	82.3
Exclusive formula feeding	8	6.2
Breast milk and formula feeds	10	7.7
Do you give infant feeding counselling and support for mothers?		
Yes	116	89.2
No	14	10.8
Do the mothers practice the infant feeding counsel you give?		
Yes	120	92.3
No	1	0.8
Don't know	9	7.1

infant feeding counselling using univariate and multivariate regression model (Tables 4 and 5).

4. DISCUSSION

Poor knowledge of the recommended infant feeding guidelines for HIV positive mothers and negative attitude to breast feeding by health workers have been reported [17-19]. This study revealed that there was a dearth of manpower and experience in the primary health centres in

Uyo as there were only 149 health workers spread across 15 PHCs. Of the 130 respondents, 56 (43.1%) were in the PHC base while the rest of the PHCs were poorly staffed especially PHC Nsukara having only one staff. There was also a poor spread of health professions as majority were nurse/midwives, few laboratory scientists and no medical doctors. There was also a relative lack of experience among the health workers as the average duration of practice was only 4 years. The grossly inadequate number of

staff at the PHCs falls short of the recommended staff number and cadre of 24 workers for PHCs comprising 19 core staff and 5 support staff [25] Hence most PHCs in Nigeria lack the capacity to provide essential health care services due to poor staffing, inequitable distribution of health workers and inadequate equipment [26,27]. This could also negatively affect the task shifting and sharing policy of the WHO adopted and implemented by the Federal Ministry of Health to address human resource shortages that militate against the provision of critical services including HIV services [28]. Overwork, burn out and poor motivation of the already insufficient manpower may also result.

Knowledge of mother-to-child transmission of HIV and infant feeding options of HIV positive mothers among the primary health workers was generally poor. Less than half of the respondents knew that HIV was transmitted during pregnancy,

labor and breastfeeding and one respondents did not believe that HIV could be transmitted from a mother to a child. These findings was poorer than that reported from recent studies among health workers Nigeria and South Africa [17,29,30]. The results of this study were however similar to other studies which reported an insufficient knowledge among health workers of HIV transmission and strategies for prevention of MTCT [31-34].

Despite this, most of the health workers in this study 95 (73.1%) knew the correct recommendations of advising mothers to breastfeed exclusively for 6 months and thereafter the introduction of formula feeds and continuation of breastfeeding for a year. However, a shocking observation was that none of them could list the 5 conditions that it is advisable to offer replacement feeding to an HIV positive mother namely: Affordable, Feasible,

Table 4. Factors associated with level of knowledge

	Univariate models	Multivariate models
	OR (95% CI) p-value	OR (95% CI) p-value
Age (years)	1.04 (0.99 – 1.10) 0.12	1.04 (0.96 – 1.13) 0.35
Gender		
Male	1	1
Female	0.83 (0.22 – 3.21) 0.79	0.85 (0.17 – 4.25) 0.84
Occupation		
Nurse/Midwife	1	1
CHO	0.36 (0.08 – 1.53) 0.17	0.60 (0.11 – 3.33) 0.56
CHEW	0.45 (0.10 – 1.92) 0.28	0.76 (0.16 – 3.70) 0.73
Laboratory Scientist	2.55 (0.62 – 10.57) 0.20	4.73 (0.87 – 25.81) 0.07
Others	0.14 (0.02 – 1.25) 0.08	0.21 (0.02 – 2.09) 0.18
Duration of Practice	1.04 (0.99 – 1.09) 0.13	1.00 (0.93 – 1.08) 0.91
Training on PMTCT	0.21 (0.03 – 1.68) 0.14	0.24 (0.02 – 2.27) 0.21
Training on infant feeding counselling	0.58 (0.16 – 2.16) 0.42	0.71 (0.14 – 3.58) 0.68

CHO=Community Health Officer; CHEW=Community Health Extension worker

Table 5. Factors associated with poor attitude towards HIV sero-exposed infant feeding

	Univariate models	Multivariate models
	OR (95% CI) p-value	OR (95% CI) p-value
Age (years)	1.11 (1.04-1.19) 0.003	1.13 (1.01-1.27) 0.04*
Gender		
Male	1	1
Female	1.49 (0.18-12.48) 0.72	0.33 (0.01-7.44) 0.49
Duration of Practice	0.99 (0.92-1.08) 0.87	1.06 (0.93-1.21) 0.36
Training on PMTCT	0.47 (0.06-3.89) 0.48	0.05 (0.002-1.06) 0.05
No training on infant feeding counselling	9.84 (2.36-40.99) 0.002	15.07 (1.64-138.27)0.02*
Knowledge level score	0.86 (0.78-0.95) 0.002	0.25 (0.09-0.66) 0.005*

*significant p values

Acceptable, Safe and Sustainable (AFASS). Another study reported that 70.4% of health workers knew these criteria for replacement feeding [17]. Previous studies which was among workers in secondary and tertiary facilities also demonstrated a difference in knowledge among the different cadre of healthcare workers with doctors performing better than others [17,32,33,35]. This difference was attributed to the longer duration of training for doctors and more opportunities for continuous professional development [17]. The absence of doctors in this study and conducting this study only among PHC workers and assessing the knowledge of healthcare workers specifically on infant feeding practices in the context of HIV/AIDS which other studies did not emphasize may have contributed to the huge knowledge gap among our respondents.

In previous studies, significant associations were described between the level of knowledge of PMTCT and factors such as age, profession, duration of post qualification experience, training, gender, previous training on PMTCT and midwifery qualification [17,29,30,31,36]. Though most of the respondents in our study had received training on PMTCT of HIV and infant feeding counselling for HIV-infected mothers, none of these factors were found to be independently associated with knowledge at both univariate and multivariate regression levels. The relatively small sample size of our study may account for this observation. The implications of the poor knowledge of PHC workers in Uyo on MTCT would also negatively affect infant feeding counselling and support of HIV positive mothers and other aspects of PMTCT programming.

On the attitude of health workers, most of the respondents were comfortable with HIV positive mothers breastfeeding their infants which demonstrated a positive attitude to HIV positive mothers. Positive attitudes by health workers for HIV positive patients were also reported from western studies [37-39] while negative attitudes were documented among health workers in Northern Nigeria [40]. In Ibadan Nigeria, the proportion of health workers who agreed that HIV positive mothers should breastfeed [19] more than tripled in the post-training survey indicating the importance of training in dispelling negative attitudes among health workers. This was corroborated by the findings in this study that there was a fifteen times increased likelihood of having a poor attitude about breast feeding an HIV sero exposed infant if the individual has not

had training on infant feeding counselling. The good proportion of health workers trained in this study may account for the positive attitude seen in this study. Negative attitude towards HIV positive mothers can seriously affect uptake of recommended infant feeding practices.

The most common infant feeding option reportedly accepted by mothers was exclusive breastfeeding with introduction of complementary feeds at 6 months. This is at variance with other Nigerian reports which cited exclusive replacement feeding using breast milk substitutes as the most common mode of infant feeding by HIV positive mothers [8,9,13-16]. Prior to 2010, HIV positive mothers were counselled to feed their infants based on the AFASS criteria. However, from 2011, a new guideline from the WHO [11] recommended that HIV infected mothers should continue breast feeding their infant until 12 months of age while on ARVs. This recommendation ensures that the infants benefit maximally from of breast feeding to improve their chances of survival while at the same time reducing the risk of HIV transmission. It is therefore expected that Nigerian and other African studies prior to 2011 would report a higher rate of replacement feeding compared to exclusive breastfeeding with more dominant rates of exclusive breastfeeding after 2011, however this is not the case. A review of infant feeding practices of over a decade (2004 - 2015) in Lagos, Nigeria found that exclusive replacement feeding was the most common feeding method of HIV positive mothers and decreased from 95.3% pre 2010 to 79.5% post 2010 while mixed feeding increased from 1.1% to 4.1% [8].

The high rate of exclusive breastfeeding reported in this study could have reflected the personal opinions of the respondents who are aware of the recommended infant feeding options and not the actual practice by the mothers. If on the other hand it actually reflects the true infant feeding option of the HIV positive mothers, it will signify a welcome development in that the feeding option now reflects the WHO recommended option for HIV positive mothers. Ten (7.7%) of the respondents however cited mixed feeding as the most common method of infant feeding their clients accept. This may reflect poor knowledge, inadequate training and counselling on the part of the health workers. This is because mixed feeding is associated with a higher risk of HIV transmission and poorer 18-month HIV free survival rates when compared with exclusive

breastfeeding or exclusive replacement feeding [13,41-43].

Over 90% of respondents stated that their centres offered infant feeding counselling and that, they were personally involved in infant feeding counselling. Most respondents stated that their centre had a copy of the national guidelines for infant feeding and they used a checklist for infant feeding counselling. This was at variance with a report from Edo State, Nigeria in which only one third of health workers possessed a copy of the national guidelines for PMTCT [17] and another study among private medical practitioners in Port Harcourt, Nigeria where only 50% of them admitted to having read the guidelines [44]. Possession of these guidelines would positively impact on quality of care for HIV positive mothers and their infants as it would ensure ready access to vital information at all times [17]. However, the quality of counselling and support given to the HIV positive mothers by health workers in this study is doubtful as the ten health workers who did not think it was correct for HIV positive mothers to breastfeed also worked in centres that infant feeding counselling was offered and were personally involved in counselling of HIV positive mothers. Furthermore, only one respondent considered that counseling should be a continuous process and should ideally be started before delivery and continued after delivery.

The limitations of the study lie in the study design, sampling strategy and data collection methods. This was a cross sectional (quantitative) study which may be limited in its ability to draw valid conclusions between a risk factor(s) and outcome as both are measured simultaneously [45]. Another weakness was in the small sample size of only 130 participants and use of total population sampling (TPS) which is non-probability sampling method [24]. This weakness was however partially addressed by a 100% response rate as all 130 participants who met the inclusion criteria out of a possible sampling frame of 149 health workers in Uyo LGA were recruited. However, it is the view of the researchers that these limitations were not enough to invalidate the findings of this study.

5. CONCLUSION AND RECOMMENDATION

Knowledge of the primary healthcare workers in Uyo on mother-to-child transmission of HIV/AIDS and infant feeding options was generally poor

despite prior training in PMTCT and infant feeding counselling for HIV positive mothers for most of these workers. There was a positive attitude towards exclusive breastfeeding for the first 6 months of the sero-exposed babies. Gaps in actual practice of infant feeding counselling by the health workers was observed. Regular capacity building of primary health care workers on the guidelines for PMTCT is needed.

CONSENT

A written informed consent was obtained from the participants. All information about the participants were made confidential. All healthcare workers, over the age of 18 years, offering services at the 15 PHCs located within the Uyo Metropolis were recruited after voluntarily accepting to participate and filling a written informed consent form. Individuals who were on sick or study leave were excluded from the study.

ETHICAL APPROVAL

Ethical approval with reference number UUTH/AD/S/96/VOL.XX1/269 was obtained from the Health Research and Ethical Committee (HREC) of the University of Uyo Teaching Hospital. Permission for access to the various PHCs for data collection was obtained from the Local Government Service Commission that employs PHC workers.

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

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