MODERN MEDICINE AND PRACTICE
http://innovatus.es/index.php/ejmmp

EUROPEAN JOURNAL OF MODERN MEDICINE AND PRACTICE
Vol. 2 No. 7 (July - 2022) EJMMP ISSN: 2795-921X

HEALTHCARE WORKERS' KNOWLEDGE, ATTITUDES, AND PRACTICES REGARDING MOTHER-TO-CHILD HIV TRANSMISSION AMONG HIV POSITIVE MOTHERS SEEKING CARE IN A HOSPITAL IN IBADAN, OYO STATE, NIGERIA

Ademola Ogunleye
Health Education England (HEE)

Ambali Adebayo Adetola
Department of chemical pathology and Immunology, Faculty of Basic Medical Science, Olabisi Onabanjo University

Alawale Oluwabukola
Obafemi Awolowo University

Folahanmi Tomiwa Akinsolu
Lead City University, Ibadan Nigeria Institute of Medical Research, Lagos

Ifeoluwa Eunice Adewole
Lead City University, Ibadan, Oyo State

Abidemi Oyeniyi
Babcock University, Ilisan Remo, Ogun State

Ibrahim Babangida Mohammed
Maryam Abacha American University

Ogunkelu Babadeinde
Bowen University

Annotation:

Background

Healthcare professionals (HCPs) are expected to demonstrate improved knowledge, attitudes, and practices (KAP) when caring for moms who are HIV-positive. Conflicting attitudes may result from cultural differences, individual convictions, and professional ethics. These attitudes may have a negative impact on caring for HIV-positive moms seeking care in Nigeria. Therefore, the government should consider the appropriate programs and training for HCPs' KAP gaps, especially for those over 41years old.

Study Aim

To assess knowledge, attitudes, and practices of HCPs towards MTCT of HIV among HIV-positive mothers accessing care in a hospital in Ibadan, Oyo State, Nigeria using a cross-sectional study.

Methods

A quantitative cross-sectional approach that employed a structured questionnaire that asked closed-ended questions was used for this study in Ibadan, Oyo state. A large group of 150 HCPs who provided support was surveyed to analyze the knowledge, attitudes, and practices of the HCPs towards MTCT of HIV among HIV-positive mothers. Descriptive statistics were used to determine sample characteristics. Multivariate analysis was used to measure and quantify outcomes.

Results

The knowledge and attitudes of HCPs towards MTCT of HIV among HIV-positive mothers who access care in a hospital in Ibadan, Oyo State, Nigeria was 74.7%, their practice was 92.7%. The study clearly highlighted that the KAP of HCPs who provide care to HIV positive mothers who are between 21- 40 years of age have better KAP compare to HCPs who are 41 - 60 years of age. Hence a strong association was evident mostly among doctors.

Conclusion

Government support is advised to enhance chances that support continuous education and program implementation to fill knowledge gaps among HCPs and to address research evidence on PMTCT practices.

Key words: HCPs, MTCT of HIV, KAP, Ibadan, Oyo State Nigeria.

Background of the study

Globally, it was projected that 2.8 million people—including 82% of pregnant women and 54% of infected children and teenagers—were living with HIV in 2018. According to estimates, 120,000 children and adolescents died from AIDS-related causes in 2018, and 360,000 new infections were reported among them (UNICEF, 2019). The use of antiretroviral (ARV) medications has decreased the death rate from HIV infection across all nations (Nkwabong et al., 2018).HIV was predicted to be the leading cause of death among reproductive women globally and contributed significantly to a child, infant, and maternal mortality and morbidity (UNAIDS, 2012; UNICEF, 2012). According to UNAIDS (2020), a pregnant woman living with HIV has a main influence on her baby's HIV status. In Sub-Saharan Africa, many women have delivered a baby without receiving any antiretroviral treatment (ART) which puts the infants at risk. As a consequence, one-third of children living with HIV die before the age of one and 50% die by age two (UNAIDS, 2020). In 2005, the reduction in mortality rate was linked to an increased life expectancy which can lead to an increase of the pandemic rate while Prevention of Mother to Child Transmissions (PMTCT) represents a significant public health challenge. It is determined that almost 400,000 infants are infected with HIV through mother to child transmission (MTCT) every year (Car et al., 2011).

MTCT of HIV occurs during pregnancy (intrauterine), at birth (intrapartum), and when breastfeeding and this leads to infant mortality in Africa with 1700 children infected daily (WHO, 2010). The risk of MTCT is between 16% to 40% without the use of ART while breastfeeding caused about 10% transmission risk (De Cock et al., 2000). PMTCT programme requires safe childbirth services, antenatal services for the mothers and their infants, access to antiretroviral treatment (ART), HIV test during pregnancy, and intense education programs by the healthcare providers (HCPs) (De Cock et al., 2000). HCPs are in the best position to educate and treat the HIV positive mothers but if they lack adequate knowledge, attitudes, and practices (KAP), MTCT of HIV will continue to increase. The persistence of MTCT of HIV in some high-income

countries is due to late diagnosis of HIV with a new onset of ARV drugs (Nkwabong et al., 2018). In some low-income countries, the MTCT rate of HIV remains as high as 8.9% (Mintsa-Ndong et al., 2017). Nkwabong et al., 2018 cross-sectional descriptive study above aimed to assess the knowledge, attitudes and practices of healthcare professionals on the prevention of MTCT of HIV to find out the factors that can influence this high MTCT rate (Nkwabong et al., 2018).

MTCT of HIV is a significant cause of childhood mortality in Lusaka, Zambia, where pregnant women are HIV-seropositive. A thorough elimination of PMTCT programme was implemented in Zambia, which causes the percentage of vertical transmission to drop by 51% between 2011 and 2012. Despite this, babies were still exposed to HIV at birth, with many women struggling to adhere to treatment. Infants were diagnosed with HIV in Lusaka, the Zambian capital, around 40% were reported as presenting resistance to at least one ART drug by 2014 compared to 21.5% in 2009. As a result of inaccessible or ineffective treatment, 3,400 children died of AIDS-related illness in 2017 (Republic of Zambia, 2020). Women lack education on how to control their reproductive and sexual health. Other factors limiting PMTCT in Zambia may lie in the providers' domain and include: (1) negative attitudes toward women with HIV among medical care providers, (2) lack of HIV-related knowledge among medical care providers, and (3) inconsistent medical practice patterns (Republic of Zambia, 2020).

Caring for HIV positive mothers requires HCPs to have sound knowledge, informed attitudes, and practices of their unique issues. Studies have shown that factors such as cultural differences, personal belief and professional ethics, could lead to conflicting attitudes, which may negatively impact caring for HIV positive mothers seeking care (Makhado and Davhana-Maselesele, 2016). Mothers living with HIV require continuous healthcare services because they are potentially at increased risk of developing disorders such as cardiovascular and liver dysfunctions. They also receive substandard care, face difficulties, and always leave hospitals against medical advice (Makhado and Davhana-Maselesele, 2016). Therefore, this study will assess the knowledge, attitudes, and practices of HCPs towards MTCT of HIV among HIV positive mothers who access care in a hospital in Ibadan, Oyo State, Nigeria. The information that will be provided from this study will help ascertain factors influencing levels of knowledge, attitudes, and practices among HCPs and difficulties in caring for HIV positive mothers, as well as identifying other factors which can further help in planning control program and strengthening the existing program on MTCT of HIV. It may also provide evidence for the government to set up intense education programs, and to spread information on positive attitude towards HIV positive mothers. The goal is to determine providers' knowledge and attitudes about HIV and assess their clinical practices regarding HIV-positive mothers.

Aim

To determine the HCPs' knowledge, attitudes, and behaviors regarding MTCT of HIV among women who are HIV positive and seeking care in a hospital in Ibadan, Oyo State.

Objectives

1. To determine the knowledge, of HCPs towards MTCT of HIV among HIV positive mothers accessing care in a hospital in Ibadan, Oyo State, Nigeria

2. To assess the attitudes of HCPs towards MTCT of HIV among HIV positive mothers who access care in a hospital in Ibadan, Oyo State, Nigeria.

3. To determine socio-demographic of HCPs factors associated with knowledge, attitudes, practices towards MTCT of HIV among HIV positive mothers accessing care in a hospital in Ibadan, Oyo State, Nigeria

Research Questions

1. What is the knowledge of HCP towards MTCT of HIV among HIV-positive mothers accessing care in a hospital in Ibadan, Oyo State, Nigeria?

2. What is the attitude, of HCPs towards MTCT of HIV among HIV-positive mothers who access care in a hospital in Ibadan, Oyo State, Nigeria?

3. What are the socio-demographic factors of HCP associated with knowledge, attitudes, and practices, towards MTCT of HIV among HIV-positive mothers accessing care in a hospital in Ibadan, Oyo State, Nigeria?

Hypothesis I

H0: There is no relationship between demographic variable of the participants and the knowledge of the participants towards MTCT of HIV among HIV positive mothers who access care in a hospital in Ibadan, Oyo State.

Hypothesis II

H0: There is no relationship between socio-demographic variable of the participants and the attitudes of the participants towards MTCT of HIV among HIV positive mothers who access care in a hospital in Ibadan, Oyo State, Nigeria.

Hypothesis III

H0: There is no relationship between knowledge and attitudes of the HCPs towards MTCT of HIV among HIV positive mothers who access care in a hospital in Ibadan, Oyo State, Nigeria are analysed in this section.

MATERIALS AND METHODS

Study design

The study was carried out at a general hospital in Ibadan, Nigeria. Nigeria is classified as a lower income country in West Africa. The economy of Nigeria is mainly supported by agriculture, industry and other services such as oil and gas (Adegoke et al., 2007). The general hospital is located in Oyo State (one of the 36 States of Nigeria) in the South-Western region of the country. One hundred and eighty-nine HCPs were working in the hospital, and it provides maternal and child healthcare services to people in Ibadan and its surrounding. The hospital is made up of antenatal clinic, labour ward, antenatal ward, gynaecological ward, children's ward, immunization clinic, post-caesarean section ward, and family planning clinic. A cross-sectional design was the most appropriate for this study because of its cost-effectiveness and ability to analyse the knowledge, attitudes, and practices of the HCPs towards MTCT of HIV among HIV positive mothers. the sampling frame was narrowed to HCPs who provided care to HIV positive mothers. Participants were provided with an equal chance of being selected while each participant were given a number, after that, a random sample was chosen until the sample size of 150 was obtained. 150 is a proportion of HCPs working in the hospital in Ibadan, Oyo State.

Data analysis

Data was analysed using Statistical Package for the Social Sciences (SPSS) for descriptive and the bivarate analysis. This was done to evaluate differences in quantitative variables such as age, gender, educational level (independent variables) and knowledge, attitudes, and practices (dependent variables) of the HCPs.

Ethical Considerations

Ethical approval was gained from Public Health and Epidemiology Department (Nigerian Institute of Medical Research) and the local government of the region to gain access to the general hospital on the PMTCT. Primary data collected will be kept securely for five years, according to the requirement and a report of the results and findings was communicated back to the participants. However, there was no reward or compensation for participation.

RESULTS

This chapter presents the results of the study in relation to its aim and the objectives. First, the result of the socio economic or demographic details of the HCPs is presented in Table 4.1, then data analysis with the KAP of the healthcare professionals towards MTCT of HIV positive mothers are described in Table 4.2, 4.3, and 4.4 respectively. Followed by inferential statistics analysis to determine the association of the outcome variables with the independent variables.

Demographic Data

The sample was composed of 150 HCPs. The socio-economic or demographic and clinical characteristics of the study participants are summarised in Table 4.1. A greater majority of the study participants 67 (44.7%) were between age 21 and 30 years, while a lesser majority 62 (41.3%) were between age 31 and 40 years, a minority of 20 (13.3%) were between age 41 and 50 years, and the mean is 1.70 and Standard deviation is 0.7212. The majority of the participants were female 84 (56.0%), while a lesser majority 66 (44.0%) were Female with mean 1.56 and standard deviation 0.498. The majority of the participants 81(58.0%) went to college, 41(27.3%) had a Bsc, 22(14.7%) had a masters degree. A greater majority of the participants 76(50.7%) were doctors, 33(22.0%) were nurses, 22(14.7) were midwives and 19(12.7%) were pharmacist. A total of 134(89.3%) were Christians, 15(10.0%) were Muslim, and 1(0.7%) were traditionalist. 124(82.7%) were single, and 26(17.3%) were married.

Table 4. 1. Demographic Data details of the HCPs.

Age of the participants	**Frequency (n)**	**Percentage (%)**	**Mean± SD**
21-30	67	44.7	
31-40	62	41.3	
41-50	20	13.3	
51-60	1	0.7	
Total	150	100.0	
Age, Years			1.70 ± 0.7212
Gender			
Male	66	44.0	
Female	84	56.0	
Total	150	100.0	
Gender			1.56 ± 0.498
Level of Education			
College	87	58.0	
BSc	41	27.3	
Masters	22	14.7	
Total	150	100.0	

Professional Status			
Doctors	76	50.7	
Nurses	33	22.0	
Pharmacists	19	12.7	
Midwives	22	14.7	
Total	150	100.0	
Religion			
Christian	134	89.3	
Islam	15	10.0	
Traditional	1	0.7	
Total	150	100.0	
Marital Status			
Single	124	82.7	
Married	26	17.3	
Total	150	100.0	

Knowledge

Appendix II shows the result of the knowledge of the participants. All the participants have the knowledge and also have heard of MTCT of HIV. A greater majority of the respondents 129 (86.0%) said that they have heard of MTCT of HIV in medical school, 11(7.3%) heard from peer group while 10(6.7%) said they heard among family member. A greater majority of the participants 98(65.3%) thinks MTCT occurs during pregnancy, 31(20.7%) said it could occur through breastfeeding while 21(14.0%) said it can only occur during labour. A greater majority of the participants 106 (70.7%) said the used of anti-retroviral therapy (ART) is the best method of the prevention of HIV during pregnancy. There were participants 95 (63.3%) who mentioned that rapid weight loss is the symptom of HIV, 21(14.0%) mentioned that unexplained tiredness is the symptoms of HIV, 20(13.3%) said severe nights sweat is the symptoms of HIV while 14(9.3%) said continual fever is the symptoms of HIV. All the participants identified that the causes of HIV is virus. A greater majority of the respondents 120 (80.0%) defined MTCT as transmission of HIV during pregnancy, child delivery and breast feeding from mother to child, while 30(20.0%) of the participants defined it as transmission of inherit traits from mother to child during child birth. Out of 150 respondents, 112(74.7%) had good knowledge of MTCT of HIV while 38(25.3%) had poor knowledge of MTCT of HIV.

Attitudes

As shown in Appendix III, the attitudes of the participants were analysed. 101(67.3%) strongly agree that reporting HIV cases is necessary, 38(25.3%) disagree, while 11(7.3%) only said they agree. 121(80.7%) strongly agree that programs on MTCT of HIV should be taught in details to HCPs,18(12.0%) disagree while 11(7.3%) only agreed.

A total of 120(80.0%) participants strongly agree that programs on MTCT of HIV should be taught in details to HCPs in every hospital, 20(13.3) agree to that while 10(6.7%) disagree. 112(74.7%) had good attitudes about MTCT of HIV while 38(25.3%) had poor attitudes.

Practices

Appendix IV shows the result of the practices of the HCPs towards MTCT of HIV of HIV positive mothers. A total of 105(70.0%) strongly agree that they have experienced MTCT of HIV during their professional practice, 34(22.7%) disagree, while 11(7.3%) agreed. 117(78.0%) strongly agree that they will have intense

education program set up on MTCT of HIV in their facility, while 33(22.0%) disagreed. 98(65.3%) strongly agree that they will always attend a control program on MTCT of HIV, 41(27.3%) disagreed, while 11(7.3%) agreed. The participants that strongly agree that they have been trained on how to report MTCT of HIV is 106(70.0%), 30(20.0%) disagreed while 14(9.3%) agreed. 141(94.0%) strongly agreed that HIV-infected pregnant mothers must be delivered with skilled person, while 9(6.0%) disagreed. In conclusion, 139(92.7%) had good practices of the healthcare professionals towards MTCT of HIV among HIV positive mothers, while 11(7.3%) had poor practice.

Hypothesis I

The relationship between demographic variable of the participants and the knowledge of the participants towards MTCT of HIV among HIV positive mothers who access care in a hospital in Ibadan, Oyo State, Nigeria are analysed in this section and in reference to Table 4.2.

Age Vs knowledge scored of the participants: Based on the responses in Table 4.2, it was discovered that majority of the participants 52 (46.4%) where between the ages of 31 and 40 years, they have good knowledge of child transmission of HIV among HIV positive mothers who access care in a hospital in Ibadan, Oyo State, Nigeria, and also a lesser majority 40 (35.7%) who were between the ages of 21 and 30 years also said they have good knowledge of child transmission of HIV among HIV positive mothers who access care in a hospital in Ibadan, Oyo State, Nigeria, while 19(17.0%) and 1(0.9%) that were between ages 41 and 50 years, and ages 51 and 56 years respectively also have good knowledge of child transmission of HIV among HIV positive mothers who access care in a hospital in Ibadan, Oyo State, Nigeria. Which also shows a statistical association with p-value less than 0.05.

Gender Vs knowledge scored of the participants: The majority of the participants 56 (50.0%) were male and they have a good knowledge of child transmission of HIV among HIV positive mothers who access care in a hospital in Ibadan, Oyo State, Nigeria. Moreover, a lesser majority 10 (26.4%) who were female also have a good knowledge of child transmission of HIV among HIV positive mothers who access care in a hospital in Ibadan, Oyo State, Nigeria. Which also shows a statistical association with p-value less than 0.05.

Professional status Vs. knowledge scored of the participants: The majority of the participants 76 (67.9%) were doctors and they have a good knowledge of child transmission of HIV among HIV positive mothers who access care in a hospital in Ibadan, Oyo State, Nigeria. A lesser majority 18 (16.9%) who were midwives also have a good knowledge of child transmission of HIV among HIV positive mothers who access care in a hospital in Ibadan, Oyo State, Nigeria. Which also shows a statistical association with p-value less than 0.05.

Level of education Vs. knowledge scored of the participants: The responses of the participants in relation to their education shows that majority of the participants 87(100%) were from college, 22(100%) had Masters degree, 3(7.3%) had BSc. and they have a good knowledge of child transmission of HIV among HIV positive mothers who access care in a hospital in Ibadan, Oyo State, Nigeria. Which also shows a statistical association with p-value less than 0.05.

Religion Vs. knowledge scored of the participants: 96 (71.6%) of the participants were Christian, 15(100%) were Islam, and 1(100%) were traditional. They all have good knowledge of child transmission of HIV among HIV positive mothers who access care in a hospital in Ibadan, Oyo State, Nigeria. Which also shows a statistical association with p-value less than 0.05.

Marital status Vs. knowledge scored of the participants: The majority of the participants 86 (71.6%) were single, while 26(100%) were married all have a good knowledge of child transmission of HIV among

HIV positive mothers who access care in a hospital in Ibadan, Oyo State, Nigeria. Which also shows a statistical association with p-value less than 0.05.

Table 4. 2. Demographic Data Vs knowledge scored of the participants

Age	**Knowledge scored of the participants**				
	Good knowledge n (%)	**Poor knowledge n (%)**	**Total n (%)**	**Chi-square**	**(p-value)**
21-30 yrs	40 (35.7)	27(71.1)	76 (44.4)	15.420	0.001
31-40 yrs	52 (46.4)	10 (26.3)	62 (41.3)		
41-50 yrs	19 (17.0)	1 (2.6)	20 (13.3)		
51-60 yrs	1 (0.9)	0 (0.0)	1 (0.7)		
Gender	**Knowledge scored of the participants**				
	Good knowledge n (%)	**Poor knowledge n (%)**	**Total n (%)**	**Chi-square**	**(p-value)**
Male	56 (50.0)	56(50.0)	112 (100.0)	6.459	0.011
Female	10 (26.4)	28 (73.7)	38 (100.0)		
Professional status	**Knowledge scored of the participants**				
	Good knowledge n (%)	**Poor knowledge n (%)**	**Total n (%)**	**Chi-square**	**(p-value)**
Doctors	76 (67.9)	0(0.0)	76 (50.5)	88.444	0.000
Nurses	18 (16.1)	15 (39.5)	33 (22.0)		
Pharmacist	0 (0.0)	19 (50.0)	19 (12.7)		
Midwives	18 (16.9)	4 (10.5)	22 (14.7)		
Level of Education	**Knowledge scored of the participants**				
	Good knowledge n (%)	**Poor knowledge n (%)**	**Total n (%)**	**Chi-square**	**(p-value)**
College	87 (100.0)	0(0.0)	87 (100.0)	135.301	0.000
BSc.	3 (7.3)	38 (92.7)	41 (100.0)		
Masters	22 (100.0)	0 (0.0)	22 (100.0)		
Religion	**Knowledge scored of the participants**				
	Good knowledge n (%)	**Poor knowledge n (%)**	**Total n (%)**	**Chi-square**	**(p-value)**
Christian	96 (71.6)	38(28.4)	134 (100.0)	6.007	0.048
Islam	15 (100.0)	0 (0.0)	15 (100.0)		
Traditional	1 (100.0)	0 (0.0)	1 (100.0)		
Marital status	**Knowledge scored of the participants**				
	Good knowledge n (%)	**Poor knowledge n (%)**	**Total n (%)**	**Chi-square**	**(p-value)**
Single	86 (69.4)	38(30.6)	124 (100.0)	10.671	0.001

Married	26 (100.0)	0 (0.0)	26(100.0)		
Traditional	1 (100.0)	0 (0.0)	1 (100.0)		

Hypothesis II

The relationship between socio-demographic variable of the participants and the attitudes of the participants towards MTCT of HIV among HIV positive mothers who access care in a hospital in Ibadan, Oyo State, Nigeria.

Age Vs. attitudes of the participants: According to Table, it was discovered that majority of the participants 52 (46.4%) were between age 31 and 40 years, 40(35.7%) were between age 21 and 30 years,19(17.0%) were between age 41 and 50 years, and 1(0.9%) were between age 51 and 60 years. They have good attitude towards child transmission of HIV among HIV positive mothers who access care in a hospital in Ibadan, Oyo State, Nigeria. Which also shows a statistical association with p-value less than 0.05.

Gender Vs. attitudes of the participants: From the responses in the Table, it was discovered that majority of the participants 56 (84.8%) were male and 56 (66.7%) were female and they have good attitude towards child transmission of HIV among HIV positive mothers who access care in a hospital in Ibadan, Oyo State, Nigeria. Which also shows a statistical association with p-value less than 0.05.

Level of education Vs. attitudes of the participants: Table 4.3 shows that majority of the participants 87 (100%) were from College, 22(100%) had Masters degree while 3(7.3%) had BSc. and they have good attitude towards child transmission of HIV among HIV positive mothers who access care in a hospital in Ibadan, Oyo State, Nigeria. Which also shows a statistical association with p-value less than 0.05.

Professional status Vs. attitudes of the participants: From the responses of the participants in Table 4.3, it was discovered that majority of the participants 76 (100.0%) were doctors, 18(81.8%) were midwives, 18(54.5%) were nurse and they have a good attitude towards child transmission of HIV among HIV positive mothers who access care in a hospital in Ibadan, Oyo State, Nigeria. Which also shows a statistical association with p-value less than 0.05.

Religion Vs. attitudes of the participants: Table 4.3 shows that the majority of the participants 96 (71.6%) were Christian, 15(100%) were Islam, and 1(100%) were Traditional and they have good attitude towards child transmission of HIV among HIV positive mothers who access care in a hospital in Ibadan, Oyo State, Nigeria. Which also shows a statistical association with p-value less than 0.05.

Marital status Vs. attitudes of the participants: From the responses in Table 4.3, it was discovered that majority of the participants 86 (69.4%) were single, 26(100%) were married, and they have a good attitude towards child transmission of HIV among HIV positive mothers who access care in a hospital in Ibadan, Oyo State, Nigeria. Which also shows a statistical association with p-value less than 0.05.

Table 4. 3. Demographic Data Vs. attitudes of the participants

Age	**Attitudes of the participants**				
	Good attitude n (%)	**Poor attitude n (%)**	**Total n (%)**	**Chi-square**	**(p-value)**
21-30 yrs	40 (35.7)	27(71.1)	76 (44.4)	15.420	0.001
31-40 yrs	52 (46.4)	10 (26.3)	62 (41.3)		
41-50 yrs	19 (17.0)	1 (2.6)	20 (13.3)		
51-60 yrs	1 (0.9)	0 (0.0)	1 (0.7)		
Gender	**Attitudes of the participants**				
	Good attitude	**Poor attitude**	**Total**	**Chi-square**	**(p-value)**

	n (%)	n (%)	n (%)		
Male	56 (84.8)	10(15.2)	66 (100.0)	6.459	0.011
Female	56 (66.7)	28 (33.3)	84 (100.0)		
Level of education	**Attitudes of the participants**				
	Good attitude n (%)	**Poor attitude n (%)**	**Total n (%)**	**Chi-square**	**(p-value)**
College	87 (100.0)	0(0.0)	87 (100.0)	135.301	0.000
BSc.	3 (7.3)	38 (92.7)	41(100.0)		
Masters degree	22 (100.0)	0 (0.0)	22 (100.0)		
Professional status	**Attitudes of the participants**				
	Good attitude n (%)	**Poor attitude n (%)**	**Total n (%)**	**Chi-square**	**(p-value)**
Doctor	76 (100.0)	0(0.0)	76 (100.0)	89.444	0.000
Nurse	18 (54.5)	15 (45.5)	33(100.0)		
Pharmacist	0 (0.0)	19 (100.0)	19 (100.0)		
Midwives	18(81.8)	4(18.2)	22(100.0)		
Religion	**Attitude of the participants**				
	Good attitude n (%)	**Poor attitude n (%)**	**Total n (%)**	**Chi-square**	**(p-value)**
Christian	96 (71.6.)	38(28.4)	134 (100.0)	6.077	0.048
Islam	15 (100.0)	0 (0.0)	15(100.0)		
Traditional	1 (100.0)	(0.0)	1 (100.0)		
Marital status	**Attitudes of the participants**				
	Good attitude n (%)	**Poor attitude n (%)**	**Total n (%)**	**Chi-square**	**(p-value)**
Single	86 (69.4)	38(30.6)	124 (100.0)	10.671	0.001
Married	26 (100.0)	0 (0.0)	26(100.0)		

Hypothesis III

The relationship between knowledge and attitudes of the HCPs towards MTCT of HIV among HIV positive mothers who access care in a hospital in Ibadan, Oyo State, Nigeria are analysed in this section.

Knowledge score of the participants Vs Attitudes of the participants

From the responses in Table 4.14, the majority of the participants 112 (100%) that have good knowledge of child transmission of HIV among HIV positive mothers also have good attitude towards child transmission of HIV among HIV positive mothers who access care in a hospital in Ibadan, Oyo State, Nigeria. Which also shows a statistical association with p-value less than 0.05.

Table 4. 4. Knowledge score of the participants Vs. Attitude of the participants

Knowledge score of the participants	**Attitudes of the participants**				
	Good attitude n (%)	**Poor attitude n (%)**	**Total n (%)**	**Chi-square**	**(p-value)**
Good knowledge	112(100.0)	0(0.0)	112 (100.0)	150.000	0.000
Poor knowledge	(0.0)	38 (100.0)	38(100.0)		

Results Summary

The percentage of HCPs who have a sound knowledge and informed attitudes was 74.7%, and the level of practice was 92.7%. The independent variables were significantly associated with knowledge, attitudes, and practices. Out of 150 participants, 86% between 21-40 years of age have the knowledge and also have heard of MTCT of HIV in medical school while 67.3% strongly agree that reporting HIV cases is necessary in their profession. 80% had good attitudes, they wanted programs on MTCT of HIV to be taught in details to HCPs in every hospital. 92.7% had good practices in which 70.0% have experienced MTCT of HIV during their professional practice. Therefore, participants who were between 21-40 years of age, male, and single had sound and informed KAP towards MTCT of HIV among HIV positive mothers than participants between 41-60 years of age.

Multivariate analysis (Appendix II) revealed a significant association between knowledge and age, gender, level of education, professional status. marital status but not with religion. There is a significant association between attitude and age, gender, professional status, marital status but not with level of education, and religion. Practice had a significant association with gender, professional status but not with age, level of education, religion, marital status This study also shows that knowledge was significantly associated with attitude (P= 0.000), p-value was less than 0.05**.**

DISCUSSION, CONCLUSION, RECOMMENDATION

Discussion

In this chapter, the implications of the key findings will be analysed in relation to the research question, objectives, and previous literature. Moreover, a discussion on the strengths and limitations of the research including the lesson learnt is included. The chapter ends with the public health relevance of the research findings and recommendations.

knowledge, attitudes, and practices of HCPs towards MTCT of HIV among HIV positive mothers.

Descriptive analysis of the HCPs' knowledge revealed a rate of 74.7% in Ibadan, Oyo State. This estimate is 9% lesser than the level of knowledge of the HCPs that was reported at 83.7% in Limpopo Province, South Africa (Makhado and Davhana-Maselesele, 2016). Also, the HCPs' attitudes revealed a rate of 74.7% in Ibadan, Oyo State. This estimate is 14% lesser than the level of attitudes of the HCPs that was reported at 60.7% in Sub-Saharan African region (Nkwabong et al., 2018). The lower value can be attributed to inaccessibility to government programs and education aimed at improving KAP of the HCPs throughout the country such as training of HCPs on delivery of antenatal services (Okike, Jeremiah and Akani, 2011). Private General Practitioners also had poor knowledge on practical aspects of PMTCT of HIV due to discriminatory attitude towards HIV positive mothers and this reduction is therefore expected as long as the government is taking it likely.

The KAP of HCPs is, however, still higher than other countries in Sub-Saharan countries such as Tshwane District, Sub-Sahara Africa where the mean knowledge of the HCPs was 60.8% guidelines (Ogbonna, Govender and Tumbo, 2016). Also, Jagadish et al. (2020) further reported that for the period of study analysis, there were still challenges in determining the HCPs knowledge and their clinical practices regarding HIV-positive mothers was yet to be assessed (Jagadish et al., 2020).

Factors associated with knowledge, attitudes, practices.

Various socio-economic or demographic factors (age, gender, professional training (education), religion, and years of experience) were explored. The expected factors of KAP such as age (Nkwabong et al., 2018), gender (Nkwabong et al., 2018; Ogbonna, Govender and Tumbo, 2016), level of education (Nkwabong et al., 2018), professional status (Nkwabong et al., 2018, 2016; Mulenga and Naidoo, 2017; Ogbonna,

Govender and Tumbo, 2016; Okike, Jeremiah and Akani, 2011), and religion were significantly associated with HCPs KAP in this study. The low rate of HCPs with good KAP towards MTCT of HIV among HIV positive mothers may induce a lack of precision.

Age: In this study, the relationship between age of the HCPs and their KAP towards MTCT of HIV among HIV positive mothers was significant at the multivariate analysis levels. HCPs aged 21 to 30 and those aged 31 to 40 years were more likely to have high level of KAP in comparison to those aged 41 to 50 and 51 to 60 years. This result and findings were similar to those in a cross-sectional descriptive study set in a Sub-Saharan African region that revealed significant association with positive attitude (Nkwabong et al., 2018).

Gender: Gender was associated with HCPs' KAP towards MTCT of HIV among HIV positive mothers in this study. Majority of the respondents were male contrary to those in Nkwabong et al. (2018) cross-sectional descriptive study with more female 101(72.1%) as against male 39(27.9%). However, another study reported no significant differences between male and female respondents in terms of practicing (Ogbonna, Govender and Tumbo, 2016). Another descriptive cross-sectional study reported majority female HCPs than male (Makhado and Davhana-Maselesele, 2016).

Level of education: Level of education was associated with HCPs' KAP towards MTCT of HIV among HIV positive mothers in this study. The majority of the participants 87(100%) were from college, 22(100%) had Masters degree, 3(7.3%) had BSc. and they have good knowledge of child transmission of HIV among HIV positive mothers who access care in a hospital in Ibadan, Oyo State, Nigeria. The study also demonstrated a statistical association with p-value less than 0.05.

Professional status: Finding demonstrate that there was an association of professional status and KAP of HCPs towards MTCT of HIV among HIV positive mothers accessing care in a hospital in Ibadan, Oyo State, Nigeria. 67.9% of doctors had good knowledge contrary to a cross-sectional descriptive study was carried out in 2017 by Nkwabong et al. (2018) in a sub-Saharan African region where only 47.9% of the HCPs had good knowledge (Nkwabong et al., 2018). The percentage of doctors who participated in the current study were 50.7% while nurses 22% where the mean knowledge is 74.7%. This is contrary to a study that investigated the level of knowledge of nurses and doctors working at Odi Hospital in Tshwane. The doctors that participated Tshwane study were 12% and 88% nurses with the mean knowledge of 60.8% (Ogbonna, Govender and Tumbo, 2016). According to a questionnaire survey by Okike, Jeremiah and Akani, (2011), most of the General Practitioners 89.3% acknowledged that their KAP of PMTCT was poor and about 90.1% were willing to attend educational programs to improve their KAP. This study shows that the Private General Practitioners had poor knowledge on practical aspects of PMTCT of HIV because they showed a discriminatory attitude towards HIV positive mothers. It is, therefore an insight in the current study that doctors had sound knowledge towards MTCT of HIV among HIV positive mothers.

Religion: Findings showed that majority of the participants 96 (71.6%) Christian, 15(100%) Islam, and 1(100%) traditional all have sound knowledge of child transmission of HIV among HIV positive mothers who access care in a hospital in Ibadan and Statistical significance was considered for $p < 0.05$.

Marital status: Both 86 (71.6%) single, and 26(100%) married participants all have sound knowledge of child transmission of HIV among HIV positive mothers who access care in a hospital in Ibadan, and Statistical significance was considered for $p < 0.05$.

Research Process

The literature search process was rigorous, and several databases were searched. Data on KAP of HCPs towards MTCT of HIV among HIV positive mothers accessing care in a hospital in Ibadan, Oyo State, Nigeria was collected and collated with several journal articles from literature search. However, only one study conducted in Limpopo Province, South Africa evaluated knowledge and psychosocial wellbeing of

nurses caring for PLWH, other articles provided data on the KAP of HCPs towards MTCT of HIV among HIV positive mothers plus recommendations.

Regarding KAP, there were limited literature on the topic. Most studies were cross-sectional that evaluated the level of knowledge of PMTCT programme, factors associated with KAP of general practitioners, nurses or midwives only, lack of knowledge in prevention and provided recommendations of the need to prevent MTCT of HIV. One of the identified studies was conducted in Limpopo Province, South Africa, and it evaluated the level of knowledge and psychosocial wellbeing of nurses caring for PLWH. Another study conducted in Odi Hospital, Tshwane District, Sub-Saharan Africa investigated the level of knowledge of doctors and nurses only in the hospital, and another one in Port-Harcourt, Nigeria which carried out a questionnaire survey on general practitioners. There was no literature about the KAP of HCPs towards MTCT of HIV among HIV positive mothers accessing care in a hospital in Ibadan, Oyo State, Nigeria. The process highlighted a gap in the literature that the study fills.

This study used a cross-sectional study design to assess knowledge, attitudes and practices of HCPs towards MTCT of HIV among HIV positive mothers plus socio-economic or demographic factors. The study involved a hospital in Ibadan, Oyo State, and structured questionnaire that asks closed-ended questions. Participants were provided with an equal chance of being selected while each participant was given a number, and the sampling frame was narrowed to HCPs who provided care to HIV positive mothers, and selection bias was avoided. Data collection was difficult as an electronic database was not used to collect the data in the facilities.

The data were coded and analysed using SPSS. The results were reviewed by the university DA thus increasing internal validity. The results were discussed, and comparisons were made to other Sub-Saharan Africa countries. The results also provided more information related to HCPs towards MTCT of HIV among HIV positive mothers accessing care in a hospital in Ibadan, Oyo State, Nigeria.

Study Strengths

The study is unique in assessing HCPs towards MTCT of HIV among HIV positive mothers accessing care in a hospital in Ibadan, Oyo State, Nigeria. The study also contributes to the body of literature in Nigeria on HCPs towards MTCT of HIV among HIV positive mothers such that the implementation of health promotion policies that addresses the attitudes of HCPs towards the PMTCT of HIV and a wide range of prevention, treatment, care, and support services along the continuum of care is improved.

The study used a random sample technique and a proportionate allocation method was used to select participants working in the hospital in Oyo State, Ibadan and this increased the validity of the study. The data collection tool was used to capture and collect the relevant information at the health facility thus the study ensured reliability of measurement. Moreover, all the categories of HCPs that provided care to HIV positive mothers in the facilities were included in the study, therefore, the results are considered to be representative of the entire hospital and the results can be generalised to the HCPs providing care to HIV positive mothers in the hospital.

Public Health Relevance, Conclusion and Recommendation

Public Health Relevance

This study revealed a high good knowledge (74.7%), attitudes (67.3%), and practices (70.0%) of HCPs among Ibadan, Oyo State participants. With the ongoing of adequate provision of facilities in the urban areas particularly in tertiary and secondary health facilities, hence, 60% of Nigerian population lives in rural areas and are underserved in terms of social amenities. PMTCT has been considered to require a comprehensive intervention with the involvement of HCPs (providing good counselling, and good HCPs perceptions of PMTCT services) (Aishat and Olubunmi, 2016). The study also provides useful information

on the factors that impacts HCPs' KAP such as age, gender, level of education, professional status, religion, and marital status. The study showed that HCPs 44.7% between age 21 and 40 years are more relevant and participated in this study and they are mostly female. The majority of the HCPs that participated went to college, mostly doctors, and Christians. This result is useful for government to provide more support in terms of staff training and development of programs to address HCPs' knowledge gaps and research evidence on PMTCT practices. Therefore, these factors are of public health relevance.

Conclusion

The study was a cross-sectional descriptive design to assess knowledge, attitudes and practices of HCPs towards MTCT of HIV among HIV positive mothers accessing care in a hospital in Ibadan, Oyo State, Nigeria. The KAP of HCPs was higher at the time of this study than the national average rate and effort to support ongoing training and implementation of programs should be continued to achieve better results. The study found moderate sufficient KAP of HCPs in PMTCT of HIV in the region. The lack of knowledge especially among nurses, pharmacists, and midwives can partly clarify the high MTCT of HIV. From this point, government should look into necessary training and programs for HCPs, especially nurses, pharmacists, and midwives who directly care for HIV positive mothers. The socio-economic or demographic such as age, gender, level of education, professional status, religion, and marital status are associated with KAP of HCPs who provide care to HIV positive mothers.

The study clearly highlighted association between KAP of HCPs who provide care to HIV positive mothers who are 21-40 years of age, male, and single. Hence a strong association was evident mostly among doctors. Government support is recommended to improve opportunities that support ongoing training and implementation of programs to addresses HCPs' knowledge gaps and research evidence on PMTCT practices

Recommendations for research

1. In order to assure representativeness, additional research should be done to confirm the rate of KAP of HCPs toward MTCT of HIV among moms who are HIV positive. If the majority of hospitals where moms with HIV are receiving care collaborate in this study, it will be successful.
2. The study was limited to one hospital; the national HIV program would benefit from evaluation of KAP of HCPs in other parts of the country to improve training programs in necessary regions.

References

1. Adegoke, A., Lawoyin, T., Ogundeji, M. and Thomson, A. (2007). *A community-based investigation of the avoidable factors of maternal mortality in Nigeria: the pilot experience*. [online] PubMed Central (PMC). Available at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2269720/ [Accessed 6 Sep. 2019].
2. Aishat, U. and Olubunmi, A., 2016. Prevention of Mother-to-Child Transmission of HIV/AIDS: Perception of Health Care Workers in Rural Areas of Oyo State. *Scientifica*, 2016, pp.1-5.
3. Decker, M., Crago, A., Chu, S., Sherman, S., Seshu, M., Buthelezi, K., Dhaliwal, M. and Beyrer, C. (2015). Human rights violations against sex workers: burden and effect on HIV. *The Lancet*, 385(9963), pp.186-199.
4. De Cock, K., Fowler, M., Mercier, E., de Vincenzi, I., Saba, J., Hoff, E., Alnwick, D., Rogers, M. & Shaffer, N. (2000) Prevention of Mother-to-Child HIV Transmission in Resource-Poor Countries. *JAMA*. 283 (9). p. 1175. [Online]. DOI: 10.1001/jama.283.9.1175 [Accessed: 12 June 2019].
5. Emmanuel, O., Mary, A., Folasade, A., Abimbola, O. and Oyindamola, O. (2018). Factors influencing dietary practices among pregnant women in Adeoyo Maternity Hospital, Yemetu,