ISSN No. 2454-6194 | DOI: 10.51584/IJRIAS | Volume VIII Issue IV April 2023

Assessment of Knowledge, Attitude and Practices of Prevention of Mother to Child Transmission of HIV/AIDS among Student Nurses in Bauchi State College of Nursing and Midwifery, Nigeria.

[1]Dr Mahmood Danasabe, [2]Mrs Rakiya Saleh, [3]Mr. Bappah Baba Waziri, [4]Muhammad Adamu

[1]Psychology Department, Federal University, Gashua, Nigeria,

[2]Aliko Dangote College of Nursing and midwifery, Bauchi state, Nigeria

[3]Adamu Adamu College of Nursing and midwifery, Federal Medical Centre, Azare, Nigeria.

[4]Adamu Adamu College of Nursing and midwifery, Federal Medical Centre, Azare, Nigeria.

DOI: **https://doi.org/10.51584/IJRIAS.2023.8430**

Received: 10 January 2023; Accepted: 03 March 2023; Published: 15 May 2023

Abstract: Women with pregnancy that are having human immuno-deficiency virus (HIV) infection have a greater chance of transmitting the virus to their children. Majority of the transmission happens during pregnancy, labour and delivery and during lactation. The health workers, especially, nurse/midwife play a crucial part in prevention of mother to child transmission. The adequate knowledge, attitude and practices of the student nurses assumed to predict effective and efficient prevention of the transmission of the virus. This research assessed the knowledge, attitude and practice of student nurses/midwives in the State college of nursing and midwifery Bauchi towards the prevention of mother-to-child-transmission (PMTCT) of HIV/AIDS. The study is a descriptive cross-sectional survey with a sample of fifty students' nurses'/midwives participated in the study analysis. Data was collected through a self-modified questionnaire that measured knowledge, attitude and practices based on percentage. Analysis was done using descriptive statistics of frequency count and percentages in answering the research questions. The mean age of respondents was 26 ± 2 years. The result of the study shows that many students nurses have low information on PMTCT. However, many sources of information did not indicate significantly to improved knowledge of the participants as shown by their low knowledge on PMTCT of HIV (66.7%). 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 negative attitude towards pregnant women living with HIV/AIDS. The practice of PMTCT was generally very low (56.6%). This study demonstrates that nurses in State college are insufficiently informed on practical issues in the prevention of MTCT of HIV. Hence, are weak to play an effective role in this important aspect of prevention of HIV. Sensitization, capacity building and appropriate clinical settings remain essential for significant outcomes.

Index Terms: Attitude, HIV/AIDs, Knowledge, Practices

I. Introduction

The extent at which human immuno-deficiency virus (HIV) is spreading across the world is alarming and detrimental to the life of people. Past study revealed that over 80 per cent of people living with the Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome (HIV/AIDS) are aged between 15 and 24 years (UNAIDS, 2004). Recent study according to World Health Organization (WHO, 2014) reported that children less than 15 years estimated to be 2.0 million became infected with the virus in the year 2014. Over 220,000 of these infected cases are children less than fifteen years and mostly from African countries (Mohammed, Kever, Martins, Afolabi & Bulama, 2016). In Africa, institutions of higher learning have been categorized as high-risk places in the transmission of HIV/AIDS (Okonkwo, 2005). Nigeria constitutes about nine percent of all people living with HIV worldwide (UNAIDS, 2014; USAID, 2006). The persistent increased in the spread of HIV/AIDS in the country (Okonkwo, 2005), health care providers, especially, nurses and midwives require update knowledge, skills and good attitude to ensure that they are capable to provide high quality, effective and efficient care to people living with HIV/AIDS. This is because of their role in prevention, management and spread of the disease.

The highest prevalence of HIV/AIDS were found in Borno State north-eastern Nigeria (Borno State Agency for Control of AIDS, 2011). Bauchi state is a neighbor to Borno state, hence on the need to carry out this study among the students in the state. It is fascinating to notice that young women of ages ranges from 15 to 24 years are four times more likely to be infected than men of similar other older ages. This is the age bracket during which many women become students of tertiary institution and some become mothers that commence deliveries (USAIDS, 2006). By implication, this indicates a high chance of transmission of such disease across these women, hence proposing this research on the appropriate preventive's strategies at this stage of student's period. The

ISSN No. 2454-6194 | DOI: 10.51584/IJRIAS | Volume VIII Issue IV April 2023

vertical transmission of HIV/AIDS infection at this critical period is also known as mother-to-child-transmission (MTCT) which occurs when the HIV-infected woman passes the virus to her baby during pregnancy, labour, delivery and breastfeeding (AIDS Relief; UNICEF, 2010).

Assessment of the knowledge, attitude and practice of prevention of mothers to child transmission of HIV/AIDS is an effective and pivotal strategy for both HIV/AIDS prevention and care, and also a principal entry point to care and support for people living with such disease. The spread of HIV/AIDS worldwide has taken the turn of the entire people life. Recently and alarmingly, about 36.9 million people globally are living with the diseases. Out of these number, 2.6 million are children less than 15 years. WHO, (2014) further indicated an estimation of 2.0 million individuals became newly infected with the virus in 2014. The 2010 HIV/AIDS survey carried out among women attending antenatal care clinic in Nigeria shows that the disease still remains one of the leading cases of morbidity in sub-African country. Nigeria constitutes the about 9% of the world population victims of the disease (UNAIDS, 2014). Evidence has shown that a strong knowledge of the disease and its prevention practice measures as well as attitude of the health workers especially, nurses demonstrated better practice of the preventive measures. Empirical study was also shown that knowledge, attitude and practice measures can tremendously help in prevention of the HIV transmission to child from the mothers and also lower the incidence rate (WHO, 2014). Student nurses need to have huge knowledge and positive attitude towards HIV/AIDS, because they are future health care professional and play a key role in the prevention of the infection.

Although, the antecedents and the consequences of HIV/AIDS have been intensely discussed in many studies (WHO, 2014; UNAIDS, 2006; Veronica, 2012), yet the prevention measures and the knowledge practice as well as the attitude towards HIV/AIDS is inconclusive, and data on the prevention of the transmission of maternal HIV to children have not been extended among students of curative care, especially studies among student's nurses in health tertiary institutions like nursing colleges are lacking despite the crucial role these categories of people play in the management of patients particularly in Bauchi state. It is against this background that researchers intend to carry this study on the knowledge, attitude and practices of the prevention of mother to child transmission of HIV/AIDS among student nurses in the state college of nursing Bauchi to fill the gap left by the previous studies. The main purpose of this study is to assess the level of knowledge, attitude and practice of mother to child transmission of HIV/AIDS among students' nurses in Bauchi state college of nursing and midwifery, Bauchi. Specifically, the study sought to:

II. Literature Review

HIV/AIDS

Human immunodeficiency virus (HIV) is the virus that causes AIDS after successful inversion into the body via blood stream. The virus attacks certain cells of the human system called the Helper T cells of CD4 cells that helps body to fight infection (Mark, 2010). The virus invades the CD4 cells thereby, reproducing within the infected cells and then busting out into the blood stream. The immune system responds by producing antibodies to fight the virus and making more CD4 cells to replace those killed. But this immune system is ultimately ineffective during the late stage of the infection. HIV destroys increasing number of CD4 cells until the body's capacity to fight other viruses and bacteria gradually begins to decline. Eventually, the immune system stops functioning leaving the body defenseless against other infectious agents (Irwin, Millen and Fallows, 2003). A vertically transmitted infection is an infection caused by pathogens such as bacteria and viruses that uses mother-to-child transmission, that is, transmission directly from the mother to an embryo, fetus, or baby during pregnancy or childbirth. It can occur when the mother gets an infection as an inter-current's disease in pregnancy. Nutritional deficiencies may exacerbate the risks of perinatal infection. A vertically transmitted infection can be called a perinatal infection if it is transmitted in the prenatal period, which is the period starting at a gestation age of between 22 and 28 weeks (with regional variations in the definition) and ending seven completed days after birth. The term congenital infection can be used if the vertically transmitted infection persists after childbirth. The signs and symptoms of a vertically transmitted infection depend on the individual pathogen. It may cause subtle signs such as an influenza-like illness and may not even be noticed by the mother during the pregnancy. In such cases, the effects may be seen first at birth. Symptoms of a vertically transmitted infection may include fever and flu like symptoms. The newborn is often small for gestation age. A petechial rash on the skin may be present, with small reddish or purplish spots due to bleeding from capillaries under the skin. An enlarged liver and spleen (hepatosplenomegaly) is common, as is jaundice. However, jaundice is less common in hepatitis B because a newborn's immune system is not developed well enough to mount a response against liver cells, as would normally be the cause of jaundice in an older child or adult. Hearing impairment, eye problems, mental retardation, autism, and death can be caused by vertically transmitted infections. The mother often has a mild infection with few or no symptoms.

Although babies can be infected with HIV through breast milk – and the use of formula milk has long been advocated in HIV-positive mothers with HIV-negative babies – this guideline recently changed. Research has shown that a combination of exclusive breastfeeding and ART can significantly reduce the risk of HIV transmission from mother to child. Note, however, that there are still risks involved. Talk to your doctor and/or nurse to make sure you follow the correct steps to keep your child healthy. WHO furthermore recommends that all mothers, regardless of their HIV status, practice exclusive breastfeeding for the first six months of their child's life. This means that you should not give your baby any other liquids or foods during this time. After six months,

ISSN No. 2454-6194 | DOI: 10.51584/IJRIAS | Volume VIII Issue IV April 2023

you can start giving your baby complementary foods, but you should continue with supplemental breastfeeding for at least one year. It should be noted that infants of mothers who are failing second or third-line HIV regimens should not be breastfed.

Knowledge and HIV/AIDS

Youth are at an increased risk of HIV and account for about half of the new HIV infections in many nations. Being an important period for social development, the adolescent and young adulthood stages are critical for promoting healthy attitudes and behaviors to protect young people from HIV. Their elevated risk of HIV infection has been attributed to their lack of knowledge and engagement in risky sexual and injection behaviors; calling for targeted educational interventions in improving their HIV knowledge and decreasing their risky behaviors (Nubed & Akoachere, 2016; Tulloch, Balfour, Kowal, Tasca, Angel, Garber, et al. (2012).

Same source investigated the utilization of voluntary counseling and testing among high school students in some developing countries reported high risky behaviors among female high school students with early sexual debut in. Perceived barriers to condom use, perceived condom use, self-efficacy and socio-demographic variables were the most important correlates of consistent condom use in this study population. Nubed, & Akoachere (2016), and WHO (2014) reported on knowledge of HIV/AIDS, sexual behavior and prevalence of sexually transmitted infections among female university students. Study has revealed that students had a satisfactory level of knowledge on HIV/AIDS prevention. Those with adequate knowledge were more likely to display positive attitudes towards PLHIV. Having adequate knowledge did not imply engaging in safe practices (Gardner et al., 2011). The widespread knowledge of HIV risk factors is a necessary approach for controlling the spread of HIV/AIDS but such is very little (UNAIDS, 2003; FMOH, 2008; Okonkwo, 2005, Mohammed et al., 2014). Lack of awareness of the transmission routes of the disease and elements of high-risk behavior led to the inability to protect oneself from contracting the virus (Okike, Jeremiah, Akani, 2011). A substantial literature propose that lower levels of HIV/AIDS knowledge is associated with a lower chance of safer sex practices [WHO, 2014]. However, the fact that individuals with high levels of HIV/AIDS knowledge often fail to follow safe sex practices indicates that knowledge of risk factors alone is not sufficient to prevent the spread of HIV/ AIDS [Svenson, Carmel, Varnhagen, 1997].

Attitudes and Knowledge and practices

Attitudes and Knowledge practices regarding HIV/AIDS are crucial corner stones in the fight against the disease. Adequate knowledge about HIV/AIDS is a powerful means of promoting positive attitudes and engaging in safe practices. Many prevention programmes have focused on increasing knowledge on transmission so as to overcome misconceptions that could prevent behavioral change towards safe practices (WHO, 2014) and also reduce the stigma against people living with HIV/AIDS. Same source reported that stigmatizing attitudes have been shown to be strongly associated with misconceptions on HIV transmission and are negative attitudes towards people living with HIV. An assessment of KAPs among any population is highly necessary in planning the management and prevention of HIV, and as baseline to evaluate the success of prevention strategies.

Studies involving the youth carried out in other divisions of African country have documented a high level of awareness of HIV/AIDS but knowledge on various specific aspects relating to HIV/AIDS remain poor, with high levels of risky behaviors such as having multiple sex partners and inconsistent use of condom (WHO, 2003). Despite their engagement in risky behaviors the majority of youths do not perceive themselves to be at risk of contracting the infection. Still, other studies have documented positive changes in condom usage among youth in two major cities in Africa, as a consequence of a youth focused intervention program. Nkole (2012) have a similar view regarding the youth in South African capital city. The fact that a high level of knowledge of HIV risk factors could co-exist with risky sexual behavior in the same individual should not be astonishing. This is entirely consistent with the argument in the classic presentation of the AIDS risk reduction model (Catania JA, Kegeles SM, Coates, 1990; Obi, Ifebunandu, 2006). Having information or becoming aware of the risk factors is an essential first step, but only a first step (Okike et al., 2011; Nguyen et al. (2008)).

There are numerous numbers of HIV/AIDS people in north eastern Nigeria, mostly Borno sate (Mohammed et al., 2016). While some of the documented victims may have access to health information and services, but many are not due to different systematic obstacle to full access. Such obstacles are, stigma, discrimination, language barriers, cultural differences, and occupational situations not lending themselves to health care and information. Specifically, HIV/AIDS prevention is limited for literate and effluents mostly. Though knowledge increases alone are unlikely to substantially reduce risk behaviors, HIV/AIDS-related knowledge deficits represent a potentially important barrier to the acquisition of the skills necessary for behavior change (Minichiello, Marino, Browne, 2001; WHO, 2014; Mohammed et al., 2016). Therefore, it is vital to know who is not well informed about risk factors in order to identify the part the populations that are vulnerable and are target for information and education programs.

In the previous review of the literature the researcher found relatively few articles that focused on knowledge of HIV/AIDS risk factors as a dependent variable to the transmission of mother child infection, especially in health tertiary institutions. In a study of HIV/AIDS knowledge among IDPs and institution of higher learning demonstrate the importance of student nurses'/midwives' status, various demographic and social characteristics as factors related to HIV/AIDS knowledge (Mohammed et l.,2014; London,

ISSN No. 2454-6194 | DOI: 10.51584/IJRIAS | Volume VIII Issue IV April 2023

Driscoll, 1999). A study in Zambia (Slonim-Nevo, Mukuka, 2005) found that age, gender, and marital status are related to knowledge of AIDS. Studies in Zambia (Slonim-Nevo, Mukuka, 2005) and Thailand (Shah, Thongthai, Leoprapai, Mundigo, Prasartkul, 1991; Mullany, Maung, Beyrer, 20033) indicate that those with more education tend to have more knowledge of HIV/AIDS.

Research in Tanzania reported that among key factors that account for the increase in HIV/AIDS transmission in country is lack of HIV/AIDS information (TACAIDS, 2008). In another study among Tanzanian population equally revealed that HIV infection is transmitted mainly through heterosexual intercourse with an infected partner (Barongo, 1992); exposure to infected blood and blood products; and from an infected mother to the baby during delivery or through breast-feeding (Msuya, 2008). In universities sex (often with multiple partners) is taken as a norm among many undergraduate students especially during their first year of study (Khalfani, 2007), thus exposing this group to a greater risk of HIV/AIDS infection unless intervention measures including safe sex are promoted. More than 90 per cent of adults in Sub-Saharan Africa acquire HIV infection from unprotected sexual intercourse with infected partners (NACP, 2005).

Additionally, sexual behavior is subject to social, cultural, religious, gender and moral norms (Klouman, 2004) across communities of different types. Elsewhere HIV/AIDS information has been found to be critical in interventions that have been successful in modifying behavior of young people who are at risk from HIV infection (Hentgen, Jaureguiberry, Ramiliarisoa, Andrianantoandro, Belec, 2008). Given that the predominant mode of HIV infection in Tanzania is heterosexual, this in turn stimulates a strong belief that change of risk behavior is a preventive and control measure for restricting the spread of the. HIV/AIDS pandemic.

A study by Awambeng (2015) revealed high levels of awareness with respect to commonly known modes of transmission and reported that 98 per cent of the adult population in Tanzania is now aware of HIV and AIDS. However according to Khalfani (2007) in spite of this awareness, the stigma attached to HIV and AIDS is still one of the key challenges in the prevention and control of the epidemic. Though the problem is widely recognised, specific studies on the role of HIV/AIDS information in changing risky sexual behaviours and outcomes such as sexually transmitted infections (STIs) and AIDS-related mortality among undergraduate students, are limited. Young people often lack information on sexual health, skills to negotiate sexual relations, and access to reproductive health services. Undergraduate students who do not have good HIV/AIDS information tend to test their sexual capability without protection. Other issues include multiple partners, irregular use of condoms, unwanted pregnancies, forced sex and gender inequalities. Lema et al. (2008) conducted a study of 322 individuals aged between 15 and 24 in Kibaha District, Tanzania. They found that while knowledge about HIV/AIDS was widespread, the proportion of those using condoms was low. Almost two-thirds worked in the public sector, in farming, or were privately employed, while the rest were students. The survey population in this investigation is comprised entirely of undergraduates, and the primary objective is to gain a better understanding of their level of HIV/AIDS information, and the extent to which this information influences them to change risky sexual behaviours

Evidence have shown that insufficient knowledge, bad attitudes and unsafe practices are major impediments in preventing the transmission of the HIV. 420 students from grades 9-12 were selected through random sampling from different schools in Eastern Cape in a study to examine knowledge and attitude toward HIV/AIDS among college students. The majority of students assessed (95.5%) were knowledgeable about the spread of the virus but 35.2 percent to 66.2 percent of them had misconceptions on its transmission. 63.1 percent perceived positive attitudes towards people living with HIV/AIDS, 73.9 percent would continue to study in a class/school with them and 45.2 percent would allow a HIV positive teacher to continue teaching them. Regression analysis result revealed that level of knowledge was statistically significant with attitudes (OR = 8.7, 95% CI = 4.3-16.4, $p < 0.002$). In spite of sufficient HIV/AIDS knowledge among respondents, misconceptions on routes of HIV/AIDS transmission were reported. Negative and undesirable attitudes to PLWH and unsafe practices were also found (Qin, Akinwumi & James, 2016; Nattrass, 2004:13; Dewaal, 2003:11).

Attitude, Practices and HIV/AIDS

The issue of HIV/AIDS is not lack of knowledge on how to prevent an infection, but rather behavioural change. For instance, whereas 46.0% of all respondents reported that condom use would prevent HIV infection, only 15.3% had ever used it in their life. Where condom use is low, faithfulness among sexual partners is in doubt and abstinence is non-existent, HIV can spread very fast. This suggests that the messages to be designed or incorporated into our tertiary institutions of learning should be able to empower the students to change risky behaviours that expose them to HIV infection. Without change in behaviour, HIV will spread unabated with devastating effects on education. Even at the moment, the impact of HIV/AIDS on learning and education is noticeable in several communities in Africa (Thanavanh et al., 2013).

Thanavan, Kasuva and Sakamoto (2013) found that knowledge about the transmission of HIV was poor in senior high school students in Nigeria (31%, 14.4%, 9.1% and 8% of the students studied identified sexual intercourse, blood transfusion, mother to child (vertical) transmission and intravenous drug use, respectively). Only 7.1% identified all of the listed four modes of transmission of HIV whilst 0.7% of the students identified all of the listed preventive methods. Same survey study among

ISSN No. 2454-6194 | DOI: 10.51584/IJRIAS | Volume VIII Issue IV April 2023

adolescents aged between 10 and 19 years in Ghana reported sexual abstinence (78.1%), condom use (72.7%), fidelity to partner (72.5%), not sharing needles (76.4%) and reducing sexual partners (56.7%) as important factors in preventing AIDS. Nearly half of the participants from the school of Pune (India) believed that HIV can be contracted from toilet seats and another study from Afghanistan reported that 53.2% of subjects believed that mosquito bites can transmit HIV. Negative attitudes toward PLHIV and sexual behaviours were also reported by another study (WHO, 2014). Although HIV/AIDS-related KAPs are reported in studies from other countries, there was no such information for school students in Lao PDR.

In a study of knowledge of and attitudes towards AIDS among female college students in Nagasaki in Japan, Maswanya, Moji, Aoyagi, Yahata, Kusano, Nagata, Izumi and Takemoto (2000:2), found that there was a discrepancy with regard to AIDS prevention among college students as well as the development of desirable attitudes towards people with HIV and AIDS. Mass media was viewed as the main source of information; acceptance of someone with HIV and AIDS was an associated with knowledge of the pandemic. They suggested that education programmes in colleges should aim at reducing the discrepancy between general knowledge and desirable attitudes regarding HIV and AIDS. Maswanya et al. (2000:2) argue that the media tend to overemphasize the dreadfulness of HIV infection and this In another study to determine knowledge, attitudes and practices towards HIV/AIDS infection and prevention among Youth form a rural zone in Cameroon, using 956 students' sample in a cross-sectional method from January to April 2014 in students 15-24 years living in a rural zone in Cameroon. Results shows that out of 956 students with a sex ratio of 0.67. The mean age was 18 ± 2.2 years. All the students have heard about HIV and 88% knew about at least one mean for prevention. The hospital was the best place for screening in 75% of them and for treatment in 59% of the students. More than half (53%) were sexually active: 63% from them had 2 to 3 partners, 17% had casual partners, 42% did not used condoms during last sexual intercourse and the mains reasons for that were rush and trust. In this study, 82% of the students have never done a screening test. Conclusion (Ombotto et al., 2016).

People tend to have unrealistically positive views of the self and exaggerated perceptions of personal control (Langer, 1975) and tend to be unrealistically optimistic about the future (Weinstein, 1980). This has been found to influence the way people react to health, illness and safety. People tend to believe that they are less at risk than others around them. The existence of optimistic biases has been demonstrated in a wide variety of domains like in case of AIDS (Bauman & Siegel, 1987). Sexual behaviour is subject to social, cultural, religious, gender and moral norms across communities of different types. Elsewhere HIV/AIDS information has been found to be critical in interventions that have been successful in modifying attitude of young people who are at risk from HIV infection (Adebanjo, Bamgbala, Oyediran, 2003).

Given that the predominant mode of HIV infection in Tanzania is heterosexual, this in turn stimulates a strong belief that change of risk attitude is a preventive and control measure for restricting the spread of the HIV/AIDS pandemic. A study by Mmbaga et al. (2007) revealed high levels of awareness with respect to commonly known modes of transmission and reported that 98 per cent of the adult population in Tanzania is now aware of HIV and AIDS. However according to Khalfani (2007) in spite of this awareness, the stigma attached to HIV and AIDS is still one of the key challenges in the prevention and control of the epidemic. Though the problem is widely recognised, specific studies on the role of HIV/AIDS information in changing risky sexual behaviours and outcomes such as sexually transmitted infections (STIs) and AIDS-related mortality among undergraduate students, are limited.

Research has shown that although, students are knowledgeable about HIV transmission routs, and protection methods, such knowledge rarely deters them from engaging in risky sexual practices or encourage them to increase condom use (Frank, Loop, Christa, 1994). Among Nigerian youth, research indicated that awareness of HIV/AIDS has not translated into behavioural change as observed by Adedimeji, (2003). Same source also found that college students tend to believe that they have minimal personal risk for contracting HIV. Recently, researchers have examined factors outside of HIV knowledge that might influence the adopt of safe sex practice, such as the effect of new treatment on college students' perception of risk and discussion of safe sex. WHO, (2014) found that few students have focused on the health-seeking attitude of college students on HIV/AIDS. Another study found a significant increase in the proportion of subjects that were having negative attitude among samples higher at risk for AIDS (Frank, Loop, Christa, 1994).

Alemayehu (2008) carried a study on the knowledge, attitude and practice of voluntary counseling and testing on HIV among undergraduates in Ethiopia and found that female have a significant acceptance voluntary counseling and testing, thought their male counter fact also showed response. The same study also showed that female is more aware or knowledgeable about and attitude of testing for HIV. Another study conducted by Iliyasu et al., (2006) on the assessment of knowledge and attitude towards counseling and testing of HIV/AIDS among adult in the rural community in the northern Nigeria using pretested questionnaire. The result of the study showed that majority of the respondents did not know the causative agent of HIV, but the knowledge of the route caused was high. The female gender and HIV knowledge significantly predicted positive attitude towards testing and counseling of HIV. Another cross-sectional study using convenient sampling revealed that high risk group for HIV are commercial sex workers and injection of drugs users.

ISSN No. 2454-6194 | DOI: 10.51584/IJRIAS | Volume VIII Issue IV April 2023

Although, the awareness of voluntary counseling for HIV/AIDS was quite high with most antenatal patients harboring positive attitude towards it, there is need to intensify health awareness to conscience the remaining minority who are still skeptical of the benefit of positive attitude and knowledge on MCTC. Another study was conducted among 2,690 Chinese migrant population on the knowledge, attitude and practice of voluntary counseling and testing of HIV/AIDS using questionnaire. Among these participants (2,690) 78% reported having had life time sexual intercourse with 41.3% of singles sex partners, 9.2% having multiple sex partners in the past and only 19% of the participants always used condom where as 61.6% did not use in their sexual acts in the past month. 80% knew HIV infection was diagnosed through blood test, 46.5% had voluntary testing (Jinling Zhang, Jinjian Yao et al., 2009). HIV testing and counseling is a measure part of good practices for the HIV prevention of the mother to child transmission of the disease. These practices demonstrated their ability to increase safe sexual behaviour and use of care and support services among adults (FMOH, 2008). Increasing the patient's knowledge or awareness with positive attitude towards the patients and helping the patients to know his status with a creation of a personalized HIV risk reduction behaviours plan, can provides tremendous progress in the prevention of the mother to child transmission of the disease (WHO, 2004).

HIV counseling and testing have been recognised as a critical intervention tool in HIV prevention and care strategies (Mohammed et al., 2014). Counseling, attitude and testing as preventive measures, provide an opportunity for one to know his or her status. These can be effectively achieved after series of receiving enough information for convincing decision making. Empirical study has shown that positive practices such as counselling, testing and awareness are useful in facilitating sustaining behaviour change and utilization of such practices in conventional health care setting has been limited (FMOH, 2008). Literature have shown a decreased in in the rate of unprotected sex among men and women who participated in voluntary counseling and testing (UNAIDS/WHO, 2004). Another study examined a sample of 3120 individuals and 586 couples randomly and equally reported a decrease in unprotected sexual behaviour with both steady and casual partners following positive practices intervention program and awareness. Different study in Zambia found that only seven percent of the people surveyed, mostly living in urban areas, reported been tested for HIV (Fylkesnes et al., 1999; Ndikom, Onibokun, 2007).

Tarekegn, Gemeda, Demisse, and Bikamo (2017). The growing rate of educational institutions and student population at the tertiary level in Ethiopia lead to a corresponding increase to exposure to HIV/AIDS. In their study to estimate the level of knowledge, attitude and practice of HIV/AIDS among university students in Ethiopia, four hundred forty-one students were chosen through multi-stage probability sampling technique. They used five-point measurement scale in data collection and one sample t-test and Structural Equation Modelling based for data analysis. The result of the study found that the level of HIV/AIDS knowledge, attitude, and practice were 53%, 95%CI = -.03- .06, p = .55; 58 %, 95%CI = .01- .10, $p<.05$; and = 92 %, 95%CI = .37- .42, $p<.001$ respectively. Apart from knowledge, the observed value of attitude and practice were higher than their corresponding expected values with the effect size, d = 0.12 for attitude and d = 0.82 for practice. Implications were discussed to assist students develop comprehensive knowledge and desirable attitude towards self-protective skills against HIV infection.

The evidence is mixed on the HIV knowledge, attitude, and practice (KAP) of Iranian general population. A systematic review of HIV knowledge, attitude and practices studies across different sub-populations in 2011 among Iranian general population, reported relatively high scores of knowledges and attitude among various populations (Haghdoost, Pourkhandani, Motaghipisheh, Farhoudi, Fahimifar, Sadeghirad, 2011). However, most studies in that review were heterogeneous and came from studies with small sample sizes with limited generalizability to the general Iranian population. Indeed, most previous HIV KAP studies among Iranian youth aged 15–29 that indicate a high level of knowledge and positive attitude towards HIV, are mainly limited to high school and medical students (Hanghdoost et al., 2011) in certain provinces. On the other hand, a considerable number of studies on HIV KAP among some demographics of the general and young population, suggest fairly low scores (Nasirian, Doroudi, Gooya, Sedaghat, Haghdoost, 2012). Therefore, given that data on youth's KAP towards HIV play an important role in destigmatizing HIV and reducing their risky behaviors that can endure into adulthood (National AIDS Committee Secretariat, 2015) and the controversial estimates across different studies, it is critical to inform health policy makers and HIV prevention programs with reliable estimates.

Another study estimated that less than one percent of the sexually active urban population in Africa had been tested (Gallant, Maticka-Tyndale, 2003). Similar study estimated that only 0.5% of the pregnant women attending urban health facilities had been counselled, tested and informed about HIV/AIDS, and most of the proportion of this people was even lower in rural areas. In Nigeria, knowledge, counseling and testing led to an increased in the use of condoms and decrease in the prevalence of sexual transmitted disease.

III. Methodology

3.1 Study settings

The research was conducted among the students' nurses and midwives of Bauchi state college of nursing and midwifery living in the campus and those that are off-campus. Data was collected from the student's hostel, rooms, library and various classes. Bauchi State is located in the north-eastern part of Nigeria. The institution has two hostels with three sets of students, though most of them

ISSN No. 2454-6194 | DOI: 10.51584/IJRIAS | Volume VIII Issue IV April 2023

are not married but due to cultural and religious beliefs, some of them are married with two or three children. It is among these students the sample of the study were drowned. The school consists of all the student within and outside the state across religion and ethnic group.

3.2 Research design

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

3,3 Instruments

The instrument for data collection was a self-developed and validated questionnaire. The instrument was pre-tested at the state college of using a test re-test method. Ten copies of the questionnaire were administered to the 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. Later 50 students completed and correctly returned the questionnaires that were used throughout the data analysis. The questionnaire consists of four sections (section A to D). Section A elicited response on the demographic data of the respondents. Section B with multiple choice questions targeted knowledge of the respondents on PMTCT of HIV. The respondent can tick Yes or No for each item and 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/midwives, 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).

3.2.1 Level of knowledge/Composite percentage of scores

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 from the original questionnaire (Mohammed et al., 2014). The present study adapted the questionnaire and scored each item on the basis of 'yes or no' Second to the last item was also modified as "Wearing personal protection devices is needed during palpation" instead of "Palpation wearing personal protection devices" to suit the response of yes or no. 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-0 and positive level-1) 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.

3.2.2 level of Attitude composite scores

Level of attitude

Level of attitude composite scores percentage

Negative <64.99%

Neutral 65%-74.99%

Positive >75%

3.2.3 Level practice Measure

Section D focused on the practices of the respondents as regards PMTCT measures. Option 'Yes and 'No were given. Score "1" was given for "Yes" indicating correct answer and "0" for "No" indicating 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.

ISSN No. 2454-6194 | DOI: 10.51584/IJRIAS | Volume VIII Issue IV April 2023

3.1 Population and sampling techniques

All the matriculated students' nurses and midwives studying in the state college of nursing and midwifery were involved in the study. A total number of 50 nurses/midwives in the school participated in the study and were randomly selected through systematic random sampling techniques.

3.4 Data Collection method

The researchers obtained approval from the authority of the college where study was carried out. Consent was obtained from the respondents after explanation of the purpose and objective of the research. The researchers with the help of assistants administered copies of questionnaires to the participants that includes married and unmarried student in the campus and those living outside the campus. All students' nurses and midwives studying in the college were inclusive and any students who is not a nurse or midwifery were exclusive in the study. After four days, the questionnaires were retrieved, out of the 52 copies of the questionnaire administered; only two were not returned and 50 were returned. The exercise lasted for four days (1st to 4th August, 2021). 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.

3.5 Data analysis

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

IV. Data Analysis

Results and Discussion

4.1 Demographic variables of the respondents

The demographic variables of the respondents show that majority about 22(44%) of the respondents were between ages 25 and 35 years, 21(42%) were between 35 and above years while 6(12%) of the respondents were between 18 and 25 years old. The mean age of the respondents was 26 ± 2 years. 42(84%) of the respondents were not married while 8 (16%) married. Educational qualification shows that 48(96%) were secondary holders, then the remaining 14(26.9%) had some A-level qualification before joining the nursing program.

4.2 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 program, 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 4.3.1 was 66.7%. Comparing the percentages with McDonald's standard of learning outcome measured criteria;

4.2.1 Level of knowledge Composite percentage of scores

A comparison of the percentage of correct responses with McDonald criterion of measuring knowledge is as follows. The scores of each level were as followed:

Very low <60%

Low 60%-69.99%

Moderate 70%-79.99%

High 80%-89.99%

Very high 90%-100%

The mean percentage of 66.7% as can be seen in table 4.3.1 indicates low knowledge of nurses on PMTCT as compared with the McDonald criterion. The mean percentage is obtained by summing up the percentages in the bracket and dividing it by the total number of the items in the questionnaire (800/12 = 66.7%). The result indicates that there is low knowledge of on PMTCT among nurses/midwives.

ISSN No. 2454-6194 | DOI: 10.51584/IJRIAS | Volume VIII Issue IV April 2023

Table 4.2.1 Level of Knowledge

Level of Knowledge	Yes-Correct response	No-Incorrect response
	Ƒ (%)	Ƒ (%)
Awareness of PMTCT of HIV/AIDs is necessary	44(88)	6(12)
How often do you receive information concerning PMTCT?	35(70)	15(30)
Babies can be prevented from HIV during pregnancy and breastfeeding	46(92)	14(28)
Drug commonly used in PMTCT on infant	29(58)	21(42)
1st VCT done for a pregnant woman	43(86)	17(34)
Mothers Need of Post-Test Counselling when Negative	37(74)	13(26)
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	10(20)	40(80)
What are the best Strategies for PMTCT of HIV?	32(64)	18(94)
When should HIV counselling be initiated?	30(60)	20(36)
Discouragement of mixed infant feeding practices	28(56)	22(44)
Awareness on predisposing factors to MTCT of HIV	35(70)	15(30)
Mean percentage	**66.7%**	**41.2%**

4.2.2 Level of attitude Score

A comparison of the percentage of correct responses with McDonald criterion of measuring attitude is as follows. The scores of each level were as followed:

Negative <64.99%

Neutral 65%-74.99%

Positive >75

Table 4.2.2 Level of Nurses' attitude toward PMTCT of HIV.

Level of attitude Score	Yes-positive attitude	No-negative attitude
	Ƒ(%)	Ƒ(%)
I always attend to pregnant women	37(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)
Wearing personal protection devices is needed during palpation	4(8)	46(92)
Nurses need incentives before they care for HIV positive Mothers	16(32)	34(68)
Mean percentage	**41.8%**	**58.2%**

ISSN No. 2454-6194 | DOI: 10.51584/IJRIAS | Volume VIII Issue IV April 2023

Table 4.3.2 put forth the mean percentages of both correct and in-correct responses of nurses/midwives on attitude towards PMTCT as 41.8 and 58.2%, respectively. The result (41.8%) indicates that nurses possessed negative attitude toward PMTCT of HIV. The mean percentage is obtained by summing up the percentages in the bracket and dividing it by the total number of the items in the questionnaire (418/10 = 41.8%)

4.2.3 Level practice measure

Table 4.2.3. Nurses' practice of PMTCT measures.

Level of Knowledge/Practices	% of scores composite
Very low	<60
Low	60%-69.99%
Moderate	70%-79.99%
High	80%-89.99%
Very high	90%-100%

Table 4.2.4 Nurses' practice of PMTCT measures.

Practice of PMTCT measures	Yes-Correct responses	No-Incorrect responses
	Ƒ(%)	Ƒ(%)
Have you Manage a HIV-positive pregnant woman before?	45(90)	15(30)
Do you carry out pre-counsel your client alone before conducting HIV testing?	21(42)	39(78)
Do you obtain informed consent before conducting HIV testing?	23(46)	27(54)
Do you always pre-counsel before HIV testing?	14(28)	36(72)
Do you counsel HIV-positive pregnant mothers on safe infant feeding?	48(96)	12(24)
Do you often counsel HIV-positive pregnant mothers on safe infant feeding at every visit?	41(82)	9(18)
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?	43(86)	17(34)
Mean percentage	**56.6%**	**52.2%**

Comparing the percentages with McDonald's standard of practice measured criteria as in table 4.3.4 we have; 56.6% indicates very low PMTCT practice among nurses as it is below 60%. The result shows that there is very low PMTCT practice among the nurses'/midwives' mothers. The mean percentage is obtained by summing up the percentages in the bracket and dividing it by the total number of the items in the questionnaire. (510/9 = 56.6%).

4.3 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 (66.7%). This finding is supported by Bennett and Weale (1997) who revealed that "awareness training program 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

ISSN No. 2454-6194 | DOI: 10.51584/IJRIAS | Volume VIII Issue IV April 2023

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., 2008). Similarly, the negative attitude exhibited by the nurses may also be possibly due to fears of contagion which negatively affects the care they render to HIV-positive mothers.

The practice of PMTCT (56.6%) 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).

On the hand testing is one of the measures that can greatly assists in the prevention of mother-child transmission of HIV/AIDS. Some of the participants were reluctant about the test. Though reasons for not testing varied. Some, though few reported that they were confident about their health status, mentioning proper and consistent use of condoms and trust in their partners or spouses. The participants pointed out that individuals could reduce their risk by choosing a partner who has tested HIV negative, choosing a safer sex act, using a condom or some combination of these factors. Others admitted fear and anxiety about the whole HIV testing experience.

Stigma, ignorance and discrimination in the population can adversely affect both people's willingness to be tested for HIV/AIDS and their adherence to chemotherapy. Participants who tested for HIV/AIDS status reported that information about HIV/AIDS zero-status could motivate an individual to protect himself/herself against the disease. Almost two-thirds of those who had taken the AIDS/AIDS test did so with a view to preventing mother-to-child transmission, which is greatly reduced if certain drugs are taken and breastfeeding avoided.

V. **Summary and Conclusion**

5.1 Summary

Guidance and counseling department should be established in the college. Health education and mass campaign on the prevention of the HIV infection across all students is highly recommended. Nurses and midwives should be assessing for positive attitude when attending patients with HIV. Health personnel should intensify enlighten on the benefit of the prevention of mother to child prevention and transmission of HIV/AISD Health promotional activities and behavioural change through effective communication routes such as refreshers 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.

5.2 Conclusion

This study demonstrates that nurses in State college of nursing and midwifery, Bauchi are poorly informed on practical issues in the prevention of MTCT of HIV. Hence, they are helpless to play an effective role in this important aspect of prevention of HIV. Most of these nurses/midwives indicates willingness to update their knowledge and improve their attitude and practice of PMTCT. Sensitization, capacity building and appropriate clinical settings remain essential resources for significant intervention outcomes. Forming national continuing nursing education can assist in preparing them to play important roles in the planned and organization of PMTCT in Nigeria.

References

1. Adebanjo SB, Bamgbala AO, Oyediran MA (2003). Attitude of Health Care providers to persons living with HIV/AIDS in Lagos State, Nigeria. Afr. J. Reprod. Health 7(1):103-112.
2. Auerbach, D.M.; W.W. Darrow, H.W. Jaffe, and J.W. Curran (1984). "Cluster of cases of the acquired immune deficiency syndrome. Patients linked by sexual contact". **76** (3): 487–92
3. Awambeng DN (2015). Knowledge, attitude and practice of healthcare providers on PMTCT of HIV in Bamenda health district. Available at: http://www.hsd fmsb.org/index.

ISSN No. 2454-6194 | DOI: 10.51584/IJRIAS | Volume VIII Issue IV April 2023

4. Awofeso N (2010). Improving health workforce recruitment and retention in rural and remote regions of Nigeria. Rural Remote Health 10:1319.
5. Bauman, L. J., & Siegel, K. (1987). Misperceptions among gay men of the risk of AIDS associated with their sexual behavior. Journal of Applied Social Psychology, 17, 329-350.
6. Barongo, R. (1992), "L Human Immunodeficiency virus seroprevalence in adolescents", East African Medical Journal, Vol. 69 No. 2, pp. 323-6.
7. Bennett C, Weale A (1997). HIV and AIDS awareness: an evaluation of short training program for Midwives. J. Adv. Nurs. 26(2):273-82.
8. Bernardi L. (2002). Determinants of individual AIDS risk perception: knowledge, behavioural control and social influence. African J AIDS Res. 1:111–24.
9. Borno State Agency for Control of AIDS (BOSACA) (2011): Annual report publication. pp. 1 20
10. Cameron, D. W., Plummer, E A., Simonsen, J. N., Ndinya-Achola, J., D'Costa, L. J., & Piot, P. (1987, June). Female to male heterosexual transmission of HIV infection in Nairobi (Abstract MP.91). Paper presented at the Third International Conference on AIDS, Washington, DC.
11. Castro, K. G., Lieb, S., Jaffe, H. W., Narkunas, J. P., Calisher, C. H., Bush, T. J., & Witte, J. J. (1988). Transmission of HI V in Belle Glade, Florida: Lessons for other communities in the United States. Science, 239, 193-197.
12. Catania JA, Kegeles SM, Coates TJ (1990). Towards an understanding of risk behavior—an AIDS Risk Reduction Model (ARRM). Health Educ Q.17:53–72.
13. Chamratrithirong A, Boonchalaksi W, Yampeka (2005) P. Prevention of HIV/AIDS among Migrant Workers in Thailand (PHAMIT): the baseline survey 2004. Bangkok: Institute for Population and Social Research
14. Cooper, D. A., Gold, J., Maclean, P., Donovan, B., Finlayson, R., Barnes, T. G., Michelmore, H. M., Brooke, P., & Penny, R. (1985). Acute retrovirus infection: Definition of a clinical illness associated with seroconversion. Lancet, 1, 537-540.
15. De-Cock KM, Fowler MG, Mercier E (2000). Prevention of mother-to-child of HIV transmission in resource-poor countries: translating research into policy and practice. JAMA 283:1175-1182.
16. DE Gaston, JF; Jensen, L; Weed, SE & Tanas, R (1994). Teacher philosophy and program implementation and the impact of sex education outcomes. Journal of Research and Development in Education 27:265-270.
17. FMOH (2008). National Reproductive Heailth Policy and Strategy to Achieve Quality Reproductive and Sexual Health for all Nigerians Abuja: FMOH.
18. Fox, R., Eldred, L. J., Fuchs, E. J., Kaslow, R. A., Visscher, B. R, Ho, M., Phair, J. P., & Polk, B. E (1987). Clinical manifestations of acute infection with human immunodeficiency virus in a cohort of gay men. AIDS, 1, 35-38.
19. Frank W. van der Velde, loop van der Pligt, and Christa Hooykaas (1994) Perceiving AIDS-Related Risk: Accuracy as a Function of Differences in Actual Risk. Health Psychology, American Psychological Association, Inc., and the Division of Health Psychology, Vol. 13, No. 1, 25-33
20. Gallant M, Maticka-Tyndale E (2003). School-based HIV prevention programmes for African youth. Soc Sci Med. 58:1337–51.
21. Haghdoost AA, Pourkhandani A, Motaghipisheh S, Farhoudi B, Fahimifar N, Sadeghirad B. (2011). Knowledge and Attitude concerning HIV/AIDS among Iranian Population: a Systematic Review and Meta-Analysis. Iranian Journal of Epidemiology. 2011;6(4):8–20.
22. Hentgen V, Jaureguiberry S, Ramiliarisoa A, Andrianantoandro V, Belec M (2008). Knowledge, Attitudes and Practices of health personnel with regards to HIV/AIDS in Tamatave. Bull. Soc. Pathol. Exot. 7(3):20-29.
23. Hessol, N. A., O'Malley, P. M., Rutherford, G. w., Lifson, A. R, Darrow, W. W, Hadler, S. C., & Jaffe, H. J. (1988, June). Seroconversion to HIV among homosexual and bisexual men who participated in hepatitis B vaccine trials (Abstract 4614). Paper presented at the Fourth International Conference on AIDS, Stockholm, Sweden.
24. Ho, D. D., Sarngadharan, M. G., Resnick, L., Dimarzo-Veronese, E, Rota, T. R., & Hirsch, M. S. (1985). Primary Human T-Lympho tropic Virus Type III infection. Annals of Internal Medicine, 103, 880-883.
25. Joan, Ben (2015). "Difference Between HIV 1 and HIV 2." Difference Between HIV 1 and HIV 2. Difference Between, 9 June 2011. Web. 01 Jan. 2015.
26. Joint United Nations Program on HIV/Acquired Immune Deficiency Syndrome (UNAIDS) (2014). HIV and AIDS in Nigeria. Available at: http://www.avert.org/professionals/hiv-around-world/sub-saharan-africa/nigeria
27. Joint United Nations Program on HIV (UNAIDS) (2003). Nursing and Midwifery Champions in HIV/AIDS Care in South Africa.
28. Kever RT, Dathini H, Habu H, Maigari B, Uba MN, Lola N, Gagare AA (2015). Knowledge of Ebola Viral Disease and Practice of Preventive Measures among University of Maiduguri Students, North-Eastern Nigeria. Asian J. Multidiscip. Res. 30:119-128.
29. Khalfani, H.O. (2007), "Trends in condom awareness, perceived accessibility and use among school children in Kahe wards, Kilimanjaro Tanzania, 2001-2006", PhD thesis, University of Oslo, Oslo

ISSN No. 2454-6194 | DOI: 10.51584/IJRIAS | Volume VIII Issue IV April 2023

30. Kingsley, L. A., Detels, R., Kaslow, R, Polk, B. E, Rinaldo, C. R., Chmiel, J., Detre, K., Kelsey, S.E, Odaka, N., Ostrow, D., Van Raden, M., & Visscher, B. (1987). Risk factors for seroconversion to human immunodeficiency virus among male homosexuals: Results from the multicenter AIDS cohort study. Lancet. 1. 345-349.
31. Langer, E. J. (1975). The illusion of control. Journal of Personality and Social Psychology, 32, 311-328.
32. Lema, L.A., Katapa, R.S. and Musa, A.S. (2008), "Knowledge on HIV/AIDS and sexual behavior among youths in Kibaha District, Tanzania", Tanzania Journal of Health Research, Vol. 10 No. 2, pp. 79-83.
33. Levy, J. A., Kaminsky, L. S., Morrow, W. J. W., Steimer, K., Luciw, P., Dina, D., Hoxie, J., & Oshiro, L. (1985). Infection by the retrovirus associated with the acquired immunodeficiency syndrome. Annals of Internal Medicine. 103,694-699.
34. London AS, Driscoll AK (1999). Correlates of HIV/AIDS knowledge among U.S.-born and foreign-born Hispanics in the United States. J Immigr Health.1:195–205.
35. Marmor, M., Des Jarlais, D. C., Cohen, H., Friedman, S. R., Beatrice, S. T., Dubin, N., El-Sadr, w., Mildvan, D., Yancovitz, S., Mathur, U., & Holzman, R. (1987). Risk factors for infection with human immunodeficiency virus among intravenous drug users in New York City. AIDS: An International Bimonthly Journal. 1, 39-44.
36. Maswanya, E; Mojil, K; Aotagi, K; Yahata,Y; Kusano, Y; Nagata, K; Izumi, T & Takemoto, T (2000). Knowledge and attitudes toward AIDS among female college students in Nagasaki, Japan Health Education Research, Vol. 15(1): 5-11.
37. McDonald ME (2002). Systemic assessment of learning outcome: Developing multiple choice examinations. Sudbury MA: Jones and Bartiett publishers.
38. Ndikom M, Onibokun A (2007). Knowledge and Behavior of Nurses/Midwives in Prevention of Vertical Transmission in Owerri, Imo State, Nigeria: a cross Sectional Study. BMC Nurs. 6:9.
39. Nubed C.K., and Akoachere J.T. (2016). Knowledge, attitudes and practices regarding HIV/AIDS among senior secondary school students in Fako Division, South West Region, Cameroon. BMC Public Health Journal; 16(1): 847
40. Minichiello V, Marino R, Browne J (2001). Knowledge, risk perceptions and condom usage in male sex workers from three Australian cities. AIDS Care. 13:387–402.
41. Mmbaga, E.J. (2007), "Prevalence and risk factors for HIV-1 infection in rural Kilimanjaro region of Tanzania: implications for prevention and treatment", BMC Public Health Journal, Vol. 7 No. 5, pp. 58-74.
42. Mohammed E, F, Kever R, T, Martins S, T, Afolabi O., and Bulama K. U, (2016). 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. Interanal Journal of nursing and midwifery; Vol. 8(2), pp. 12-17.
43. Msuya, S.E. (2008), "Women and infants at risk", PhD thesis, University of Oslo, Oslo.
44. Mullany LC, Maung C, Beyrer C (2003). HIV/AIDS knowledge, attitudes, and practices among Burmese migrant factory workers in Tak Province, Thailand. AIDS Care. 15:63–70.
45. Nattaraass, N (2004). The Moral Economy of Aids in South Africa. Cambridge University Press.
46. Ndikom M, Onibokun A (2007). Knowledge and Behavior of Nurses/Midwives in Prevention of Vertical Transmission in Owerri, Imo State, Nigeria: a cross Sectional Study. BMC Nurs. 6:9.
47. Nguyen T, Oosterhoff P, Ngoc Y, Wright P, Hardon A (2008). Barriers to access Prevention-of Mother-to-Child-Transmission of HIV Positive women in well resource setting in Vietnam. AIDS Res. Ther. 3:1-10.
48. Nkole T (2012). Knowledge, Attitudes and Practices on Prevention of Mother to Child transmission of HIV among Health Care Providers at the University Teaching Hospital and in Lusaka Urban Clinics. Available at: http://dspace.unza.zm:8080/xmlui/handle/123456789/1421.
49. Obi SN, Ifebunandu NA (2006). Consequences of HIV testing without Consent. Int. J. STD AIDS 7(2):93-6.
50. Okike O, Jeremiah I, Akani C (2011). Knowledge, Attitude and Practice of General Medical Practice in Port Harcourt towards Prevention of Mother to Child Transmission of HIV. Nig. Health J. 3:79-82.
51. Okonkwo, P.I. (2005), "Perception of peers' behavior regarding sexual health decision making among female undergraduates in Anambra State Nigeria", Africa Health Science Journal, Vol. 5 No. 2, pp. 107-13.
52. Ombotto S, Nonga BN, Ntone F, Ambassa G, Zonk DA (2016) Knowledge, Attitude and Behavioral Practices Regarding HIV/AIDS Infection and Prevention among Rural Students in Cameroon. J Community Med Health Educ 6:480. doi:10.4172/2161-0711.1000480
53. Piot, P., Plummer, F. A., Mhalu, F. S., Lamboray, J.-L., Chin, J., & Mann, J. M. (1988). AIDS: An International Perspective. Science, 239, 573-579.
54. Pooja Balani, (2018). Medical Technical Advisor at the Southern African HIV Clinicians Society.
55. President's Emergency Plan for AIDS Relief (PEPFAR) (2010). Scaling up the response to gender-based violence in PEPFAR. Consultation on gender-based violence, Washington DC: AIDSTAR-
56. Poudel KC, Jimba M, Joshi AB, Poudel-Tandukar K, Sharma M, Wakai S (2005). Retention and effectiveness of HIV/AIDS training of traditional healers in far western Nepal. Tropical Med Int Health. 10:640–6.

ISSN No. 2454-6194 | DOI: 10.51584/IJRIAS | Volume VIII Issue IV April 2023

57. Qin A. A,_Akinwumi Y.,O & James N (2016). Knowledge, Attitude and Practices of HIV/AIDS among High School Students in Eastern Cape, South Africa. Journal of Human ecology; Vol. 54(2)
58. Reeves JD, Doms RW (2002). "Human immunodeficiency virus type 2". The Journal of General Virology. **83** (Pt 6): 1253–65. doi:10.1099/0022-1317-83-6-1253.PMID 12029140
59. Simbayi LC, Kaliichman SC, Jooste S, Cherry C, Mfecane S, Cain D (2005). Risk factors for HIV-AIDS among youth in Cape Town, South Africa. AIDS Behav. 9:53–61.
60. Singh, Meharban (2010). Care of the Newborn. p. 7. Edition 7
61. Shah I, Thongthai V, Leoprapai B, Mundigo AI, Prasartkul P, Chamratrithirong A (1991). Knowledge and perceptions about AIDS among married women in Bangkok. Soc Sci Med. 33:1287–
62. Slonim-Nevo V, Mukuka L (2005). AIDS-related knowledge, attitudes and behavior among adolescents in Zambia. AIDS Behav. 9:223–31.
63. Smyth E, Caamano F, Femandez-Riveiro P (2007). Oral health knowledge, attitudes and practice in 12-year old schoolchildren. Med. Oral Patol. Oral Cir. Bucal. 12(8): E614-20
64. Sodoh AE, Fawole AO, Sodoh WE, Oladimeji AO, Sotiloye OS (2006). Attitude of Health Care Workers to HIV/AIDS. Afr. J. Reprod. Health 10(1):39-46.
65. Stewart, G. J., Tyler, J. P. P., Cunningham, A. L., Barr, J. A., Driscoll, G. L., Gold, J., & Lamont, B. J. (1985). Transmission of Human TCell Lymphotropic Virus Type III (HTLV-III) by artificial insemination by donor. Lancet, 2, 581-584.
66. Svenson LW, Carmel S, Varnhagen CK (1997). A review of the knowledge, attitudes and behaviours of university students concerning HIV/AIDS. Health Promot Int. 12:61–8.
67. United Nations Children's Fund (UNICEF) (2010). PMTCT Factsheet. Available at: http://www.readbag.com/unicef-aids-files-ethiopia-pmtctfactsheet-2010
68. TACAIDS (2008), Tanzania HIV/AIDS and Malaria Indicator Survey 2007-08, TACAIDS, Dar es Salaam.
69. Tarekegn T., Gemeda A. U., Demisse G. and Bikamo S. (2017). HIV/AIDS Knowledge, Attitude and Practice among Dilla University Students, Ethiopia. African Journal of Reproductive Health; vol. 21, No. 178
70. Ted Kerr (2018). "AIDS 1969: HIV, History, and Race". Drain Magazine. Retrieved4 September 2018.
71. Thanavanh B. Harun-Or-Rashid M., Kasuya H., and Sakamoto J. (2013). Knowledge, attitudes and practices regarding HIV/AIDS among male high school students in Lao People's Democratic Republic; Journal of the international society; 16(1); 17387
72. Tulloch HE, Balfour L, Kowal J, Tasca GA, Angel JB, Garber G, et al. (2012). HIV knowledge among Canadian-born and sub-Saharan African-born patients living with HIV. Journal of immigrant and minority health / Center for Minority Public Health. 14(1):132–9. Epub 2011/06/07. pmid:21643728.
73. UNAIDS (2004), Report on the Global HIV/AIDS Epidemic, UNAIDS, Geneva, available at: http://data.unaids.org/Global-Reports/Bangkok-2004/unaidsbangkokpress/gar2004html/gar2004_00_en.htm (accessed 6 May 2012).
74. United Nations Children's Fund (UNICEF) (2010). PMTCT Factsheet. Available at: http://www.readbag.com/unicef-aids-files-ethiopia-pmtctfactsheet
75. United Nations General Assembly (2003). Convention on the elimination of all forms of discrimination against women. General Assembly Resolution 34/180, 34 sessions, Supp. No.46 UN Doc A/34/46. New York: United Nations.
76. United States Programs on HIV/AIDS (USAIDS) (2006). Community perception of Prevention-of-Mother-to-Child-Transmission services and safe male circumcision in six focal States in Nigeria.
77. Veronica N, Cebile T, Ksthryn N, and MsVezi (2012). Perception Towards HIV/AIDS, Condom use and voluntary counseling and testing among students at a previously disadvantaged South Africa Tertiary Institution Kamlaraj, 37(1); 1-7.
78. Yu, Jialin; Wu, Shixiao; Li, Fang; Hu, Linyan (2009). "Vertical Transmission of Chlamydia trachomatis in Chongqing China". Current Microbiology. **58** (4): 315–320
79. Weinstein, N. D. (1980). Unrealistic optimism about future life events. Journal of Personality and Social Psychology, 5, 806-820.
80. WHO (2003) "Unsafe Sex is the main mode of HIV Transmission" Bulleting of the World Health Organization. 81(4); 311.
81. Wolfe ND, Switzer WM, Carr JK, Bhullar VB, Shanmugam V, et al. (2004) Naturally acquired simian retrovirus infections in Central African Hunters. The Lancet 363(9413): 932–7
82. Worobey M, Gemmel M, Teuwen DE, Haselkorn T, Kunstman K, et al. (2008) Direct evidence of extensive diversity of HIV-1 in Kinshasa by 1960. Nature 455: 661–664.
83. Wolinsky, S., Rinaldo, C., Farzedegan, H., Gupta, P., Koslow R., Immagawa D., Chmiel J., Phair J., Kwok, J., & Sninsky, J. (1988, June). Polymerase chain reaction detection o/HIV provirus be/or HIV seraconversion (Abstract 1099). Paper presented at the Fourth International Conference on the Acquired Immunodeficiency Syndrome, Stockholm, Sweden.

ISSN No. 2454-6194 | DOI: 10.51584/IJRIAS | Volume VIII Issue IV April 2023

84. World Health Organization (WHO) (2005): Antiretroviral Drugs, Treating Pregnant Women and preventing HIV infection in infants. Available at: http://www.who.int/hiv/en
85. World Health Organization (WHO) (2014). Global HIV and AIDS statistics. Available at: http://www.avert.org/professionals/hivaround-world/globalstatistics.