KNOWLEDGE AND ATTITUDES TOWARDS GUIDELINES FOR PREVENTION OF MOTHER-TO-CHILD TRANSMISSION OF HIV IN ETHIOPE WEST LOCAL GOVERNMENT AREA OF EDO STATE

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Abstract
The study assessed the knowledge and attitudes towards the guidelines to the prevention of mother-to-child transmission of HIV in Ethiope West LGA. Five research questions were raised to guide the study, while four hypotheses were formulated.The descriptive survey research design was adopted for this study. The population of the study consisted of 2,122 women of childbearing age who attended prenatal and postnatal care services between July 2023 and August 2023 at the Primary Healthcare Centres in Ethiope West Local Government Area (Delta State Primary Healthcare Development Agency, Asaba, Delta state). The sample size for this study was 229 respondents and was selected using the multi stage sampling technique. A self-made questionnaire was used to collect data from the respondents and validated by three expert in the department of Health, Safety and Environmental Education, university of Benin. The reliability of the instrument was established through tet – retest and scores from the both first and second administration were analysed using Pearson's Product Moment Correlation Coefficient to obtain a coefficient score of 0.77. The collected data were analysed using descriptive statistics of frequency and percentages for the research questions, while inferential statistics of chi-square was used to test the formulated hypothesis at 0.05 level of significance.The study revealed among others that: that knowledge and attitudes towards PMTCT guidelines are generally high among respondents in Ethiope West LGA of Delta state, age does not significantly influence attitudes towards the guidelines for the prevention of mother-to-child transmission of HIV in Ethiope West LGA,but significantly influences knowledge to the guidelines. *Based on the findings, it was therefore recommended among others that there is a need for continuous education and awareness programs to maintain and improve these levels. Additionally, targeted interventions should be considered to address the gaps identified, particularly among specific age groups and educational levels. Strengthening PMTCT programs through comprehensive education and supportive attitudes can significantly reduce the risk of mother-to-child transmission of HIV, contributing to better health outcomes for mothers and their children.*

Introduction
Throughout history, people observed and fought against several pandemics, with some resulting to a disastrous amount of casualties and economic damage. One of such pandemics that has remained prevalent till this era is the Acquired Immunodeficiency Syndrome (AIDS), a chronic disease caused by the Human Immunodeficiency Virus (HIV). The most common routes of HIV transmission include sexual contact, blood contact, and

mother-to-child transmission (MTCT). Transmission of Human Immunodeficiency Virus (HIV) from an infected mother to her child during pregnancy, labour, delivery, or breastfeeding is known as mother-to-child transmission (MTCT) and it continues to be a major source of HIV infection among children (WHO, 2016). Human Immunodeficiency Virus infection among children has mainly been through Mother-To-Child-Transmission (MTCT) and the most effective way of preventing MTCT of HIV is to prevent infection in women of childbearing age but in scenarios where this could not be achieved appropriate measures should be taken to protect the children. Knowledge of women of childbearing age on prevention of mother-to-child transmission (MTCT) of HIV plays a major role in limiting the number of children being infected by HIV, while although the knowledge of women of childbearing age on the guidelines for prevention of transmission mother-to-child HIV is an important factor, attitudes towards these should not be overlooked as it goes a long way in determining adherence to these guidelines.Acquired Immune Deficiency Syndrome (AIDS) is a major public health problem globally, with more than 36.7 million people estimated to be living with HIV in 2015 an increase from 33.6 million in 2013 (UNAIDS,2016). Human immunodeficiency virus (HIV) in children could be as a result of vertical transmission, also known as mother-to-child transmission (PMT). Without treatment, half of the children living with HIV die before the age of two, with a peak in mortality between 2 and 3 months for newborns (Newell et al.,2004; Ngwej et al.,2015). Therefore, maternal knowledge and attitudes towards the guidelines for the prevention of mother-to-child transmission (PMTCT) is a corner stone for the effective combat and reduction of mother-to-child transmission of HIV.

Despite significant efforts and achievements in PMTCT over the past decade, approximately 1.7 million children were living with HIV, and 150,000 children were newly infected with HIV in 2019, mainly through the transmission of the virus from their mothers during pregnancy, delivery, or breastfeeding and Over 90% of new infections of human immune deficiency virus in infants and young children occur through mother-to-child transmission (UNICEF,2021).Globally, not one of the 2018 or 2020 targets for increased acceleration to eradicate the AIDS epidemic among children and adolescents has been met, a situation compounded by the Covid-19 pandemic (UNICEF,2021). It was discovered that an estimated 95,000 children under the age of 15 died of AIDS-related causes globally and mainly in sub-Saharan countries (Ruszel and Piecewicz-Szczęsna, 2020).The HIV pandemic till date remains an issue of major concern on a global scale. The (UNAIDS, 2011) report indicated an estimated 34 million people worldwide are infected with HIV with women accounting for 52% of this burden. Sub Saharan Africa accounts for more than two-third (68%) of the globally infected population. Children under the age of 15 make up 3.4 million of the global number of infected while Sub Saharan Africa alone accounts for 90% of this burden (WHO/UNICEF/UNAIDS, 2011). Nigeria with a current estimated population of over 200 million and a growth rate of 3.2% according to World Bank report (2011) have an HIV prevalence of 4.1% Federal Ministry of Health (FMOH) ANC Survey report (2010). Presently Nigeria contributes an estimated 30% of the global burden of maternal to child transmission HIV (FMOH, 2010).

In order to prevent HIV from being transmitted from mother to child, the World Health Organization (WHO) devised a four-pronged strategy in 2001 (Oyefabi et al., 2018). The primary prevention of HIV infection in women of reproductive age is the first prong. The second strategy focuses on protecting women with HIV from unintended pregnancies. The third prong involves utilizing antiretroviral medications and other steps to stop transmission from mothers to their infants. The last prong entails offering assistance to HIV-positive women, their infants, and their families. PMTCT of HIV has been considered one of the essential prevention interventions to control HIV epidemics. Since the beginning of PMTCT programs, 1 million deaths and 2.2 million HIV infections have been averted among children (UNAIDS, 2019). One of the pillars of PMTCT and the most cost-effective way is to increase the knowledge and attitude of pregnant mothers toward this intervention strategy (Mtshali et al., 2002). And again one's level of knowledge and attitudes can be influenced by age, marital status, location, education, religious affiliations, socioeconomic status and many others.

The transmission of infectious diseases, such as HIV, from mother to child poses a serious threat to the life and overall development of the child. While this mode of transmission is most likely not intentional, it can have devastating consequences on the vulnerable infant. The physiological makeup of an infant is not strong enough to effectively combat infections, especially those as severe as HIV as newborns and young children have immature immune systems that are ill- equipped to fight off pathogens that can be transmitted from an infected mother. This leaves them highly susceptible to contracting life-threatening illnesses through vertical transmission.

HIV is still prevalent resulting in mother-to-child transmission thus disrupting innocent lives. Prevention of mother-to-child transmission (PMTCT) of HIV is a key to reducing the incidence of HIV worldwide. This issue is of significant concern as it directly impacts the health and wellbeing of both mothers and children, thus, addressing this problem is crucial within the field of public health and HIV prevention. This has led the researcher to ask, what could be the reason for the continued prevalence despite efforts by the Government? Could it be lack of knowledge or poor attitudes towards guidelines for the prevention of mother-to-child transmission of HIV? To adequately answer these questions there is need to investigate thoroughly, the knowledge and attitudes towards the guidelines for the prevention of mother-to-child transmission of HIV among parents of childbearing age.Indeed some studies have been carried out at different levels such as the work of (Haghdoost, 2015; Odimegwu et al.,2017; Ruszel and Piecewicz-Szczęsna, 2020) as far as our knowledge is concerned, there is no evidence about knowledge and attitudes towards the guidelines for the prevention of mother-to-child transmission of HIV among parents of childbearing age in Ethiope West LGA. This observable fact necessitated the need to investigate knowledge and attitudes towards guidelines for the prevention of mother-to-child transmission of HIV in Ethiope West LGA.

Methodology

The descriptive survey research design was adopted for this study. The design allows for collection of data without manipulation from representative sample based on which relevant

interference can be drawn to the population from which it was taken from (Owie, 2013). This design is considered appropriate for this study due to this significant feature. The population of the study consisted of all the 2,122 women of child bearing age who attended prenatal and post-natal care services in the month of July and August2023 at the Primary Health Care Centres in Ethiope West Local Government Area of Delta stateThe sample size for this study was 257 respondents and was selected using multistage sampling technique.

Stage 1: This stage involved the use of simple random sampling technique of balloting with replacement, eight primary healthcare centres was selected from the sixteen primary healthcare centres in Ethiope West Local Government Area. To do this, the researcher wrote all the names of the sixteen primary healthcare centres on a piece of paper and place inside a bag. Each strip was folded and 8 strips was picked randomly one at a time and returned back into the bag. Thereafter, the names of the eight primary healthcare centres picked was listed out.Stage 2: The proportional sampling technique was used to select 40% primary healthcare centres attendees from each of the primary healthcare centres that was sampled. Thus, 59 respondents was selected from Jesse Phc, 49 respondents was selected from Irhodo Phc, 50 respondents was selected from Ekroda phc, 52 respondents was selected from Mosogar Phc, 56 respondents was selected from Otefe Phc, 48 respondents was selected from Ogharaefe Phc, 52 respondents was selected from Ovade Phc and 62 respondents was selected from Oghareki Phc, amounting to 428 respondents.Stage 3: Using the purposive sampling technique 60% was selected from the total of the eight randomly selected primary health care centers. Therefore, the sample for the study was 257 respondents from the target population of 2,122 women of childbearing age who attended prenatal and postnatal care services between July 2023 and August 2023 at the Primary Healthcare Centres in Ethiope West Local Government Area.

The instrument for this study was a self-structured questionnaire titled: “Knowledge and Attitudes towards Guidelines for the Prevention of Mother-to-Child Transmission of HIV in Ethiope West LGA of Delta State”. The questionnaire will consist of two sections (section A, B and C). Section A was used to elicit information from the respondents on their demographic variables such as age, education, marital status and occupation. Section B and C were used to elicit information from the respondents, regarding Knowledge and Attitudes respectively Towards Guidelines for the Prevention of Mother-to-Child Transmission of HIV in Ethiope West LGA of Delta State. Section B consisted of 27 multiple choice items, every correct answer was scored one (01) while the wrong answer was scored zero (0). The total or the highest score per respondent was 27. Based on this the bench mark was set as follows: low knowledge = 0-9, moderate knowledge = 10-17 and high knowledge 18-27.

Section C consisted of nine items ranging from Strongly Agree (SA), Agree (A) ,Disagree (D) to Strongly Disagree (SD). Positive items were scored as follows: SA = 4Points, A = 3points, D = 2points and SD = 1Point while the scoring of negative worded items were reversed. In this case the highest score per individual was estimated to be 36 , meaning 9 itms multiply by 4. Base on this the bench mark of attitudes was set as follows: 0-18 as negative attitude while 19-36 was set as positive attitude. The research instrument

was validated by three experts from the Department of Health, Safety and Environmental Education before it was administered. Their recommendations were incorporated in the final draft of the instrument.

The reliability of the instrument was determined using the test-retest reliability method. This instrument was administered to twenty (20) women of child bearing that were not part of the sample of the study population in Ugheli LGA. After an interval of two weeks, same instrument was re-administered to the same respondents and the scores obtained from both administrations were analysed with the Pearson Product Moment Correlation Coefficient to obtain a coefficient score of 0.77. This the researchers considered high enough to be used for the study.

The instrument was administered by the researcher with the aid of three research assistants who was briefed on the administration and the retrieval of the instrument. The participants were given sufficient time to complete the administered questionnaire and it was collected upon completion to check the level of completeness and ensure that the return rate is high. The collected data were analysed using descriptive statistics of frequency and percentages for the research questions raised. While inferential statistics of chi-square was used to test the formulated hypothesis at 0.05 level of significance.

Results

In the study 257 questionnaires were administered to the respondents and 229 were successfully retrieved. Hence a return rate of 89.10% which was deemed adequate.

Research Question one: What is the knowledge level of guidelines to the prevention of mother-to-child transmission of HIV in Ethiope West LGA?

Table one: Knowledge level of guidelines to the prevention of mother-to-child transmission of HIV in Ethiope West LGA

Knowledge level	Frequency	Percent
High	119	52.0
Low	24	10.5
Moderate	86	37.5
Total	229	100.0

**benchmark: 0-09: low knowledge; 10-18: moderate knowledge; 19-27: high knowledge*

The table above showed the knowledge level of guidelines to the prevention of mother-to-child transmission of HIV in Ethiope West LGA. It can be seen that 52.0% of the respondent had high knowledge (scored between 19 to 27), 10.5% had low knowledge (scored between 0 to 9) and 37.5% had moderate knowledge (scored between 10-18). Thus majority of the respondent had high knowledge level of guidelines to the prevention of mother-to-child transmission of HIV in Ethiope West LGA.

Research question two: What are the attitudes towards guidelines to the prevention of mother-to-child transmission of HIV in Ethiope West LGA?

Table 2(a): Attitudes towards guidelines to the prevention of mother-to-child transmission of HIV in Ethiope West LGA

S/N	Attitudes towards guidelines to the prevention of mother-to-child transmission of HIV	Strongly Agree	Agree	Disagree	Strongly Disagree
1	HIV testing should not be made compulsory for the prevention of mother to child transmission.	18(7.9%)	44(19.2%)	99(43.2%)	68(29.7%)
2	HIV positive mothers should not be allowed to visit public places	16(7.0%)	61(26.6%)	82(35.8%)	70(30.6%)
3	Babies of HIV positive mothers should be collected from them to prevent them from breastfeeding them	18(7.9%)	65(28.4%)	74(32.3%)	72(31.3%)
4	HIV positive mothers should not be forced to take their drugs.	65(28.4%)	90(39.3%)	51(22.3%)	23(10.0%)
5	HIV **positive** mothers who breastfeed their children should be fined	32(14.0%)	44(19.2%)	76(33.2%)	77(33.6%)
6	It does not matter if babies of HIV positive mothers test positive	32(14.0%)	60(26.2%)	83(36.2%)	54(23.6%)
7	HIV positive mothers who do not take their drugs should be fined.	28(12.2%)	63(27.5%)	77(33.6%)	61(26.6%)
8	It does not matter if HIV positive mothers do not engage in post natal follow-up	11(4.8%)	59(25.8%)	69(30.1%)	90(39.3%)
9	HIV positive mothers should be allowed to live the kind of life they desire.	20(8.7%)	63(27.5%)	79(34.5%)	67(29.3%)

Table 2a showed the attitudes towards guidelines to the prevention of mother-to-child transmission of HIV in Ethiope West LGA. The table revealed that majority of the respondents disagree that HIV testing should not be made compulsory for the prevention of mother to child transmission (43.2%), HIV positive mothers should not be allowed to visit

public places (35.8%), babies of HIV positive mothers should be collected from them to prevent them from breastfeeding them (32.3%), HIV positive mothers who breastfeed their children should be fined (33.6%), it does not matter if babies of HIV positive mothers test positive (36.2%), HIV positive mothers who do not take their drugs should be fined (33.6%), it does not matter if HIV positive mothers do not engage in post natal follow-up (39.3%) and HIV positive mothers should be allowed to live the kind of life they desire (34.5%). They agreed that HIV positive mothers should not be forced to take their drugs (39.3%). Based on their response, it can be deduced that majority of the respondents have positive (concern) attitude toward guidelines to the prevention of mother-to-child transmission of HIV in Ethiope West LGA.

Table 2(b) Attitudes levels towards guidelines to the prevention of mother-to-child transmission of HIV in Ethiope West LGA

Attitudes level	Frequency	Percent
Positive	165	72.1
Negative	64	27.9
Total	229	100.0

*benchmark- positive attitude: 19 to 36; negative attitude: 1-18

Table 2b showed the attitudes levels towards guidelines to the prevention of mother-to-child transmission of HIV in Ethiope West LGA. It can be seen that 72.1% of the respondents had positive attitude and 27.9% had negative attitude towards the guidelines to the prevention of mother-to-child transmission of HIV in Ethiope West LGA.

Hypothesis one: Age does not significantly influence knowledge to the guidelines for the prevention of mother-to-child transmission of HIV in Ethiope West LGA.

Table 3: Independent sample chi-square on age does not significantly influence knowledge to the guidelines for the prevention of mother-to-child transmission of HIV in Ethiope West LGA

		know_level						
		High	low	moderate	X^2	Df	Sig.	Remark
Age	19 and below	33	0	27	17.29	4	0.00	Ho rejected
	20 to 30	51	20	33				
	40 and above	35	4	26				
Total		119	24	86				

Table 3 revealed the independent sample chi-square on age does not significantly influence knowledge level to the guidelines for the prevention of mother-to-child transmission of HIV in Ethiope West LGA. It can be deduced that the chi-square value is 17.29, the degree of freedom is 4 and the level of significance is 0.00 which is less than the set alpha level of 0.05. Hence the null hypothesis which stated that age does not significantly influence knowledge to the guidelines for the prevention of mother-to-child transmission of HIV in Ethiope West LGA is rejected. This showed that age does significantly influence knowledge

level to the guidelines for the prevention of mother-to-child transmission of HIV in Ethiope West LGA.

Hypothesis two: Age does not significantly influence attitudes to the guidelines for the prevention of mother-to-child transmission of HIV in Ethiope West LGA.

Table 4: Independent sample chi-square on age does not significantly influence attitudes level to the guidelines for the prevention of mother-to-child transmission of HIV in Ethiope West LGA.

		Attitude level					
		Positive	negative	X^2	Df	Sig	Remark
Age	19 and below	48	12	3.04	2	0.21	Ho accepted
	20 to 30	70	34				
	40 and above	47	18				
Total		165	64				

Table 4 showed the independent sample chi-square on age does not significantly influence attitudes level to the guidelines for the prevention of mother-to-child transmission of HIV in Ethiope West LGA. It can be seen that the chi-square value is 3.04, the degree of freedom is 2 and the level of significance is 0.21 which is greater than the set alpha level of 0.05. Hence the null hypothesis which stated that age does not significantly influence attitudes level to the guidelines for the prevention of mother-to-child transmission of HIV in Ethiope West LGA is retained. Thus age does not significantly influence attitudes level to the guidelines for the prevention of mother-to-child transmission of HIV in Ethiope West LGA.

Hypothesis three: Educational level does not significantly influence knowledge to the guidelines of the prevention of mother-to-child transmission of HIV in Ethiope West LGA/

Table 5: Independent sample chi-square on educational level does not significantly influence knowledge to the guidelines of the prevention of mother-to-child transmission of HIV in Ethiope West LGA

		Knowledge level						
		High	low	moderate	X^2	Df	Sig.	Remark
Educational status	Primary	47	10	35	0.69	4	0.95	Ho accepted
	Secondary	48	8	35				
	Tertiary	24	6	16				
Total		119	24	86				

Table 5 showed the independent sample chi-square on educational level does not significantly influence knowledge to the guidelines of the prevention of mother-to-child transmission of HIV in Ethiope West LGA. It can be seen that the chi-square value is 0.69, the degree of freedom is 4 and the level of significance is 0.95 which is less than the set alpha level of 0.05. Thus the null hypothesis which stated that educational level does not

significantly influence knowledge to the guidelines of the prevention of mother-to-child transmission of HIV in Ethiope West LGA is retained. This showed that educational level does not significantly influence knowledge to the guidelines of the prevention of mother-to-child transmission of HIV in Ethiope West LGA.

Hypothesis four: Educational level does not significantly influence attitudes to the guidelines of the prevention of mother-to-child transmission of HIV in Ethiope West LGA

Table 6: Independent sample chi-square value of educational level does not significantly influence attitudes to the guidelines of the prevention of mother-to-child transmission of HIV in Ethiope West LGA

		Attitude					
		Positive	negative	X^2	Df	Sig.	Remark
Educational status	Primary	68	24	0.59	2	0.74	Ho accepted
	Secondary	63	28				
	Tertiary	34	12				
Total		165	64				

Table 6 revealed the independent sample chi-square value of educational level does not significantly influence attitudes to the guidelines of the prevention of mother-to-child transmission of HIVin Ethiope West LGA. It can be seen that the chi-square value is 0.59, the degree of freedom is 2 and the level of significance is 0.74 which is greater than the set alpha level of 0.05. Hence the null hypothesis which stated that educational level does not significantly influence attitudes to the guidelines of the prevention of mother-to-child transmission of HIVin Ethiope West LGA is retained. Thus educational level does not significantly influence attitudes to the guidelines of the prevention of mother-to-child transmission of HIVin Ethiope West LGA.

Discussion of findings

The discussion of results provides insights into the knowledge and attitudes towards guidelines for the prevention of mother-to-child transmission (PMTCT) of HIV in Ethiope West LGA, drawing on the literature reviewed. The high level of knowledge observed among 52.0% of the respondents aligns with the findings of Cherie et al. (2022), who reported that a majority of pregnant women had good knowledge of PMTCT. This suggests that extensive health education efforts, as mentioned by Kassie et al. (2023), might have been effective in the Ethiope West LGA. However, the presence of a significant proportion (37.5%) with moderate knowledge indicates room for improvement in disseminating comprehensive information on PMTCT guidelines.Regarding attitudes, the results show that 72.1% of respondents had a positive attitude towards PMTCT guidelines, consistent with Nyarko et al. (2019), who found that the majority of their study participants had favorable attitudes towards PMTCT. This positive attitude is crucial as it can encourage the uptake and adherence to PMTCT services, as noted by Nezha et al. (2023). The specific attitudes towards compulsory HIV testing, public restrictions for HIV-positive mothers, and punitive

measures for non-adherence to drugs highlight the complex social dimensions of HIV prevention efforts. The mixed responses indicate that while there is general support for PMTCT guidelines, certain stigmatizing views persist, which can hinder effective implementation.The chi-square analysis results suggest that age significantly influences knowledge levels, corroborating the findings of Musarandega et al. (2017), who highlighted age-related differences in ANC attendance and HIV status awareness. However, the lack of significant influence of age and educational level on attitudes towards PMTCT, as shown in the results, contrasts with studies like those by Sambah et al. (2019), which emphasized the role of education in shaping health attitudes and behaviors. This discrepancy could be due to specific local factors in Ethiope West LGA that mitigate the impact of education on attitudes, such as the effectiveness of community-based health interventions that reach across educational levels.Hence, while the majority of respondents in Ethiope West LGA showed high knowledge and positive attitudes towards PMTCT guidelines. There were notable gaps and stigmatizing views that need to be addressed. Continued health education and community engagement, especially targeting the less knowledgeable and those with negative attitudes, are essential to enhance the effectiveness of PMTCT programmes. This aligns with the broader findings in the literature that emphasized the importance of comprehensive education and positive community attitudes in the successful implementation of PMTCT interventions.

Conclusion

The study concluded that a significant majority of the respondents demonstrated positive attitudes toward the PMTCT guidelines.The following recommendations were suggested :

1. There is need for the implementation of ongoing educational initiatives to sustain and enhance the knowledge of PMTCT guidelines among all demographics. These programs should be designed to address specific gaps identified in the study, ensuring comprehensive understanding and adherence to PMTCT protocols.
2. The government should develop targeted interventions focusing on younger age groups who demonstrated lower levels of knowledge. These interventions could include peer education programs, youth-friendly health services, and the incorporation of PMTCT education into school curricula.
3. The government and key stakeholders should integrate PMTCT education into routine maternal and child health services to ensure that all expectant mothers receive consistent and accurate information. This can be achieved through prenatal visits, community health outreach programs, and collaborations with local health centers.

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