

Assessment of Factors Influencing the Uptake of Elimination of Mother to Child Transmission Services Among Pregnant and Breastfeeding Mothers in Shangombo District, Zambia

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ABSTRACT

Introduction: Elimination of Mother to Child Transmission (EMTCT) involves stopping the passing of HIV, syphilis, and hepatitis B from a mother to her child during pregnancy, labour, delivery, and breastfeeding. The role of EMTCT programs is to guarantee that MTCT for HIV, syphilis, and HBV is managed and incidence is lowered to such a low level that these diseases no longer pose a public health risk. The effective prevention of mother to child transmission of HIV is dependent on diagnosing maternal infection early and beginning and maintaining lifetime treatment for all women and girls of reproductive age with HIV, offer care programs and preventive care for male partners.

Objectives: To identify the knowledge level of pregnant and breastfeeding mothers regarding EMTCT services in Shangombo District, to examine the availability and accessibility of EMTCT services within health facilities in Shangombo District, to assess the role of healthcare provider attitudes and communication in influencing the uptake of EMTCT services among pregnant and breastfeeding mothers in Shangombo District.

Methods: A descriptive cross-sectional and retrospective study designs were employed to evaluate all EMTCT services offered to all pregnant and breastfeeding mothers in Shangombo district. A simple random sampling method was employed to select participants for this study. The total sample size for this study was 202. Participants who voluntarily consented were provided with a questionnaire to complete. Structured questionnaire was utilized to collect data which was analyzed by Statistical Package for Social Sciences (SPSS) version 22.0 and was presented by tables. Multivariate logistic regression analysis was employed to explore the relationships between socio-demographic characteristics and elimination of mother to child transmission of HIV parameters.

Results: The study disclosed that, most of the respondents had adequate level of knowledge on EMTCT services. This is because the vast majority (93.6%) of respondents have heard about EMTCT services. Many of the respondents, (84.6%) are aware that EMTCT services help to prevent the transmission of HIV from mother to child during pregnancy, labour, delivery and breastfeeding in Shangombo district. The study has also disclosed that, nearly all respondents (93.1%) know where to access EMTCT services in Shangombo district. The study also disclosed that, most of the respondents (93.1%) agreed that, they received information or counseling about EMTCT services during their pregnancy from health care providers. A substantial proportion of respondents (84.2%) affirmed that, they were aware that, exclusive breastfeeding help to prevent HIV transmission from HIV positive mothers to the babies which highlights a positive trend in knowledge dissemination and health education efforts. Social class, occupation, age, sex, and marital status were found to have a significant association with level of knowledge regarding the utilization of EMTCT services among pregnant and breastfeeding mothers in Shangombo District, in the Western Province of Zambia. The study also disclosed that, a high proportion of pregnant and breastfeeding mothers (98.0%)

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visited health facilities during their pregnancy/breastfeeding period in Shangombo district. The study has also revealed that, a substantial portion of respondents (75.7%) had challenges in accessing EMTCT services due to their availability and accessibility issues. A good proportion of study participants (91.6%) agreed that, they were provided with information about EMTCT services during their visit to the health facility. While a considerable number of respondents (67.3%) found it easy to access EMTCT services within health facilities, a significant minority (32.7%) encountered difficulties. It was also found that, a good proportion of study participants (88.6%) were aware about the benefits of timely utilization of EMTCT services. The study has also disclosed that, most of the respondents (87.6%) agreed that, they discussed the steps involved in how to utilize and access EMTCT services with healthcare providers during their visit to the health facility. The study has also revealed that, many respondent (94.1%) agreed that, healthcare providers play a critical role in shaping the perceptions of pregnant and breastfeeding mothers regarding EMTCT services in Shangombo District. A significant majority (90.8%) of respondents recognized effective communication by healthcare providers as a crucial factor in encouraging pregnant and breastfeeding mothers to utilize EMTCT services. The data also suggest that improving healthcare provider attitudes has the potential to increase the utilization of EMTCT services among pregnant and breastfeeding mothers, with 93.1% of respondents agreeing to this statement. The data also indicate that healthcare provider attitudes and communication are perceived as vital in influencing the uptake of EMTCT services among pregnant and breastfeeding mothers, with 90.3% of respondents agreeing to this statement. The findings have also shown that, 90.6% of respondents affirmed that positive interactions with healthcare providers encourage pregnant and breastfeeding mothers to engage with EMTCT services. Age, religion, social class, and occupation were found to have a substantial relationship with the attitudes and communication of healthcare providers regarding EMTCT uptake among pregnant and breastfeeding mothers in Shangombo District, located in Zambia's Western Province.

Conclusion: In conclusion, the findings reveal a high level of awareness among pregnant and breastfeeding mothers regarding EMTCT services, indicating effective dissemination of health information through various channels such as health education, health communication, Social mobilization and community engagement. While respondents demonstrate adequate level of knowledge about EMTCT services and their benefits, challenges persist in accessing these services due to availability issues. Efforts should thus concentrate on improving availability, enhancing communication and counseling skills among healthcare providers, addressing accessibility barriers, and strengthening provider training in order to ensure optimal care and support for EMTCT services utilization among pregnant and breastfeeding mothers. The author recommends that, there is a need to conduct a study on the impact of healthcare provider attitudes and communication on the utilization of EMTCT services in Shangombo District of Zambia.

Keywords: EMTCT, Pregnant and Breastfeeding Mothers, Shangombo District, Zambia

Introduction

Elimination of mother-to-child transmission (EMTCT) refers to the prevention of transmission of HIV, syphilis, and hepatitis B virus (HBV) from a mother to her child during pregnancy, labour, childbirth, and breastfeeding. In the absence of any interventions during these stages, rates of HIV transmission from mother-to-child can be between 15% and 45%. MTCT can be nearly fully prevented if both the mother and the baby are provided with ARV drugs as early as possible in pregnancy and during the period of breastfeeding [1].

Moreover, evidence explains that, mother-to-child transmission, or vertical transmission, is a significant contributor to the HIV pandemic, accounting for 9% of new infections globally in 2017. A growing body of evidence shows that a number of countries are achieving very low rates of MTCT and some countries such as Armenia, Belarus, Cuba and Thailand have been formally validated for elimination of MTCT of HIV as a public health problem. The African Region bears the highest burden with more than 90% of new infections being recorded among children. In 2016, for instance, 110 000 new HIV infections occurred among children and 350 000 cases of congenital syphilis occurred among children globally. Untreated maternal syphilis results in congenital syphilis in over half of affected pregnancies and can lead to early fetal loss, premature birth, stillbirth, low birth weight and newborn death [2].

Other than that, research demonstrates that, in 2012 an estimated 260 000 children were newly infected with HIV, and an estimated 3.3 million children were living with HIV. Without prophylactic treatment, approximately 15-30% of infants born to HIV-positive women will become infected with HIV during gestation and delivery, with a further 5-15% becoming infected through breastfeeding. HIV infection of infants creates a life-long chronic condition that potentially shortens life expectancy and contributes to substantial human, social, and economic costs.

Primary prevention of HIV, prevention of unintended pregnancies, effective access to testing, counselling, antiretroviral therapy (ART), safe delivery practices, and appropriate infant feeding practices (including access to antiretroviral drugs to prevent HIV transmission to infants) all contribute to prevention of mother-to-child transmission (PMTCT) and also reduce child mortality [3]. The Elimination of Mother-to-Child Transmission of HIV (EMTCT) is a critical public health goal, particularly in countries like Zambia, where the prevalence of HIV/AIDS remains high. The successful implementation of EMTCT services is contingent upon understanding and addressing the various factors that influence the uptake of these services among pregnant and breastfeeding mothers. EMTCT services encompass a range of interventions aimed at preventing the transmission of HIV from mother to child during pregnancy, childbirth, and breastfeeding. These services include antenatal care, HIV testing and counseling, provision of antiretroviral therapy (ART), safe delivery practices, and support for safe infant feeding practices. Ensuring that pregnant and breastfeeding mothers utilize these services is crucial for preventing new HIV infections among infants and improving maternal health outcomes [1].

Moreover, another study found that, the uptake of the prevention of mother-to-child transmission of HIV (PMTCT) services is predictive of HIV transmission. However, the study found that many barriers limit pregnant women living with HIV from maximizing EMTCT services. Five barriers to EMTCT services uptake were found and these are fear of stigmatization, poor support from family, conflict between attending to social role demands and EMTCT programs, financial and time cost to health facilities, and poor service provider-patient interaction [4].

Another research, done in Burkina Faso, discovered that the HIV/AIDS program is one of the most successful in Africa, with lowering HIV prevalence and treatment outcomes comparable to those seen in industrialized nations. Since August 2014, Burkina Faso has used Option B+ to keep moms on lengthier therapy, enhancing their survival and that of their children. According to studies, EMTCT reduced HIV transmission from 10.4% in 2006

to 0% in 2015. The EMTCT program continues to be the most effective strategy to care for HIV-infected pregnant mothers and their newborns. The present EMTCT policy is based on data indicating male partner engagement is related to female EMTCT completion. According to this study, the reduction in mother-to-child HIV transmission in Burkina Faso throughout the years is mostly attributable to the development of EMTCT programs. Efforts to incorporate male partners must still be done [5].

Method

A mixture of a descriptive cross-sectional and retrospective study designs were employed in the evaluation of all EMTCT services offered to all the pregnant and breastfeeding mothers in Shangombo district of Zambia. These study designs allowed researchers to identify potential factors influencing EMTCT services uptake. By collecting data on demographic characteristics, socio-economic status, health beliefs, accessibility to healthcare facilities, and other relevant variables, researchers gained insights into what factors might be associated with higher or lower uptake rates. A retrospective study design allowed researchers to look back in time and analyze data from past records. This was particularly useful for understanding trends in EMTCT service uptake over time, as well as assessing the impact of interventions or policy changes. Ethical approval was sought from Lusaka Apex Medical University Ethics Committee (LAMUREC), and Shangombo District Health Office before the study commenced. The study was conducted in Shangombo District of Western Province of Zambia at randomly selected health facilities because they were the only health facilities with the most densely populated catchment areas in the district. Besides that, these health facilities were randomly selected from a total of 10 health facilities that had similar characteristics in the district. The study area had both literate and illiterate people, rich and poor people, and one gender of female, and working class and non-working class which gave a correct representation of the characteristics of the study population in the study area. The target population for this study included pregnant women in Shangombo District who were at risk of transmitting HIV to their unborn children, It also consisted of breastfeeding mothers in the same district who were either HIV-positive or at increased risk of transmitting HIV to their infants through breast milk. The study population comprised female patients and clients aged between 15 and 49 years who were seeking EMTCT services at selected health facilities in Shangombo District of Zambia. A simple random sampling method was employed to select participants for this study, ensuring every respondent had an equal opportunity of being selected. The total sample size for the study was determined using a sample size calculation formula, considering parameters such as a desired confidence level of 90%, an acceptable margin of error of 5%, a response distribution of 50%, and a total catchment population for Shangombo district of Zambia of 76,184. Therefore, the total sample size for this study was determined to be 270. However, it was adjusted to 202 due to financial constraints. Efforts were made to ensure that respondents were fully informed that their anonymity and confidentiality would be rigorously maintained throughout the entirety of the study process. Participants in the study were provided with a thorough explanation of the research's nature, and all those who willingly consented were provided with a questionnaire to complete, facilitating their participation. They were assured of the option to withdraw from the study at any time without any form of coercion. Study participants were also informed that, there were no personal

benefits or risks to participating in the study. The anticipated time commitment for participants was approximately ten minutes, and their valuable input was expected to significantly enhance our comprehension of the factors influencing uptake of elimination of mother to child transmission services among pregnant and breastfeeding mothers in Shangombo district of Zambia. Prior to commencing the main data collection process, a pilot study was conducted at Mulonga Rural Health Centre to evaluate the validity, reliability, clarity, relevance, and feasibility of the data collection instrument. Feedback from the pilot study participants was utilized to fine tune the questionnaire and implement necessary adjustments to ensure the validity and reliability of the data collection instrument. Mulonga Rural Health Centre was not involved in the final study in order to avoid bias. Structured questionnaire was employed as the primary data collection tool enabling systematic and standardized data gathering. Primary data was collected from respondents, while secondary data was obtained from the Shangombo district health information office and through the analysis of registers from Maternal and Child Health (MCH) departments. The collected data underwent analysis using Statistical Package for Social Sciences (SPSS) version 22.0 and was presented through tables and pie charts. Multivariate logistic regression analysis was employed to explore the relationships between socio-demographic characteristics and parameters pertinent to the elimination of mother to child transmission of HIV. Significant level of association was put at $P < 0.05$.

Results

Table 1: Demographic Data

Demographic Data			
1	How old are you?	15-20	16.3%
		21-30	38.6%
		31-40	30.7%
		41-50	11.9%
		51-60	2.5%
2	What is your marital status?	SINGLE	36.1%
		MARRIED	47.0%
		DIVORCED	11.4%
		WIDOWED	3.0%
		SEPARATED	2.5%
3	Which social class do you belong to?	UPPER CLASS	17.3%
		MIDDLE CLASS	17.3%
		LOWER CLASS	65.3%
4	What is your religion?	CHRISTIAN	95.0%
		MUSLIM	1.5%
		HINDUSM	3.5%
5	What is your level of education?	NONE	27.2%
		PRIMARY	39.1%
		SECONDARY	30.2%
		TERTIARY	3.5%
6	What is your occupation?	UNEMPLOYED	82.2%
		INFORMAL EMPLOYMENT	10.4%

6	What is your occupation?	FORMAL EMPLOYMENT	7.4%
		ONE	32.2%
7	How many children do you have?	TWO	20.3%
		THREE	16.8%
		FOUR	13.4%
		FIVE	6.9%
		SIX	5.9%
		SEVEN	4.0%
		EIGHT	0.5%

This demographic data reflects a relatively young population, with a mean age of approximately 31.3 years and a standard deviation of approximately 9.5 years. Marital status shows that 47.0% of respondents are married, while 36.1% are single. In terms of socioeconomic status, the mode of the social class is the lower class, accounting for 65.3% of respondents. Christian affiliation is highly prevalent, with 95.0% of respondents identifying as such. Educational attainment varies, with 39.1% having completed primary education, 30.2% secondary education, and 27.2% reporting no formal education. The occupation distribution reveals a high level of unemployment, with 82.2% of respondents being unemployed.

Table 2 shows that most of the respondents had adequate level of knowledge on EMTCT services. This is because the vast majority (93.6%) of the respondents have heard of EMTCT services in Shangombo district. The study has also revealed that, 84.6% of the respondents are aware that EMTCT services help to prevent the transmission of HIV from mother to child during pregnancy, during labour, during delivery and during breastfeeding. The study has also disclosed that, nearly all respondents (93.1%) know where to access EMTCT services in Shangombo district. The study also disclosed that, most of the respondents (93.1%) agreed that, they received information or counseling about EMTCT services during their pregnancy. A substantial proportion (84.2%) of respondents affirmed that, they were aware that, exclusive breastfeeding help to prevent HIV transmission from HIV positive mothers to the babies which highlights a positive trend in knowledge dissemination and health education efforts.

Table 2: Level of Knowledge of Pregnant and Breastfeeding Mothers Towards EMTCT Services

Level of Knowledge of Pregnant and Breastfeeding Mothers Towards EMTCT Services			
1	Have you ever heard of EMTCT services in Shangombo district?	YES	93.6%
		NO	6.4%
2	Are you aware that EMTCT services can help prevent the transmission of HIV from mother to child?	YES	84.6%
		NO	5.4%
3	Do you know where to access EMTCT services in Shangombo district?	YES	93.1%
		NO	6.9%
4	Have you received any information or counseling about EMTCT during your pregnancy?	YES	93.1%
		NO	6.9%

5	Are you aware of the importance of exclusive breastfeeding in preventing HIV transmission to your baby?	YES	84.2%
		NO	15.8%
6	Have you ever attended an EMTCT awareness session or workshop in Shangombo district?	YES	44.6%
		NO	55.4%
7	Do you know the recommended duration for exclusive breastfeeding to reduce HIV transmission risk?	YES	61.9%
		NO	38.1%
8	Are you familiar with the available support services for HIV-positive mothers and their infants in Shangombo district?	YES	57.9%
		NO	42.1%

Table 3 shows that, an overwhelming high proportion of pregnant and breastfeeding individuals (98.0%) visited health facilities during their pregnancy or breastfeeding period in Shangombo district. The study also revealed that, a substantial portion (75.7%) of respondents had challenges in accessing EMTCT services due to their availability issues. A good proportion of study participants (91.6%) agreed that, they were provided with information about EMTCT services during their visit to the health facility. The study found that 92.6% of respondents were aware of the locations within Shangombo District where EMTCT services were being provided, while 7.4% were not aware of such locations. While a considerable number of respondents (67.3%) found it easy to access EMTCT services within health facilities, a significant minority (32.7%) encountered difficulties. It was also found that, a good proportion of study participants (88.6%) were aware about the benefits of timely utilization of EMTCT services. The study has also disclosed that, most of the respondents (87.6%) agreed that, they discussed the steps involved in how to utilize and access EMTCT services with healthcare providers during their visit to the health facility.

Table 3: Availability and Accessibility of EMTCT Services

Availability and Accessibility of EMTCT Services			
1	Have you visited a health facility in Shangombo District during your pregnancy or breastfeeding period?	YES	98.0%
		NO	2.0%
2	Were you provided with information about EMTCT services during your visit to the health facility?	YES	91.6%
		NO	8.4%
3	Do you know the locations within Shangombo District where EMTCT services are available?	YES	92.6%
		NO	7.4%
4	Have you ever faced challenges in accessing EMTCT services due to their availability?	YES	75.7%
		NO	24.3%
5	Did you find it easy to access EMTCT services within the health facility?	YES	67.3%
		NO	32.7%
6	Were there any barriers that hindered your ability to access EMTCT services?	YES	73.3%
		NO	26.7%
7	Did healthcare providers discuss the steps involved in utilizing EMTCT services during your visit?	YES	87.6%
		NO	12.4%
8	Were you informed about the benefits of timely utilization of EMTCT services?	YES	88.6%
		NO	11.4%

The results from Table 4 shows that, many respondent (94.1%) agreed that, healthcare providers play a critical role in shaping the perceptions of pregnant and breastfeeding mothers regarding EMTCT services in Shangombo District. Also a significant majority (90.8%) of respondents recognized effective communication by healthcare providers as a crucial factor in encouraging pregnant and breastfeeding mothers to utilize EMTCT services. The study also found that, most of the respondents (93.1%) agreed that, improving healthcare provider attitudes has the potential to increase the utilization of EMTCT services among pregnant and breastfeeding mothers. The study also disclosed that healthcare provider attitudes and communication are perceived as equally important in influencing the uptake of EMTCT services among pregnant and breastfeeding mothers, with 90.3% of respondents agreeing to this statement. The findings also show that, most of the study participants (90.6%) affirmed that, positive interactions with healthcare providers have a notable impact on the decision making process of pregnant and breastfeeding mothers to engage with EMTCT services. The study further disclosed that, a good proportion of respondents (87.6%) agreed that, negative attitudes of healthcare providers deter pregnant and breastfeeding mothers from accessing EMTCT services in Shangombo District.

Table 4: Attitudes and Communication of Healthcare Providers on EMTCT Services

Attitudes and Communication of Healthcare Providers on EMTCT Services			
1	Do healthcare provider attitudes significantly impact the uptake of EMTCT services among pregnant and breastfeeding mothers in Shangombo District?	YES	89.6%
		NO	10.4%
2	Is effective communication by healthcare providers a crucial factor in encouraging pregnant and breastfeeding mothers to utilize EMTCT services in Shangombo District?	YES	90.8%
		NO	9.4%
3	Do negative attitudes of healthcare providers deter pregnant and breastfeeding mothers from accessing EMTCT services in Shangombo District?	YES	87.6%
		NO	12.4%
4	Does improving healthcare provider attitudes have the potential to increase the utilization of EMTCT services among pregnant and breastfeeding mothers in Shangombo District?	YES	93.1%
		NO	6.9%
5	Is there a correlation between healthcare provider communication skills and the likelihood of pregnant and breastfeeding mothers seeking EMTCT services in Shangombo District?	YES	88.2%
		NO	11.8%
6	Are healthcare provider attitudes and communication equally important in influencing the uptake of EMTCT services among pregnant and breastfeeding mothers in Shangombo District?	YES	90.3%
		NO	9.7%

7	Can positive interactions with healthcare providers positively influence the decision of pregnant and breastfeeding mothers to engage with EMTCT services in Shangombo District	YES	90.6%
		NO	9.4%
8	Do healthcare providers play a critical role in shaping the perceptions of pregnant and breastfeeding mothers regarding EMTCT services in Shangombo District?	YES	94.1%
		NO	5.9%

Table 5: Association between socio-demographic variables and Level of knowledge on EMTCT services uptake among pregnant and breastfeeding mothers

Socio-demographic Variables	χ^2 value	Df	p value
SEX	24.891	2	0.004**
AGE	23.416	4	0.000**
MARITAL STATUS	25.374	6	0.002**
RELIGION	24.515	4	0.4021
OCCUPATION	25.183	3	0.000**
SOCIAL CLASS	22.471	2	0.000**

**Significant at P<0.05.

Table 6: Association between socio-demographic variables and Attitudes and Communication of Healthcare Providers on EMTCT services uptake among pregnant and breastfeeding mothers

Socio-demographic Variables	χ^2 value	Df	p value
SEX	26.131	5	0.485
AGE	25.173	3	0.003**
MARITAL STATUS	21.691	4	0.590
RELIGION	23.173	2	0.004**
OCCUPATION	24.466	3	0.000**
SOCIAL CLASS	24.192	6	0.002**

Discussion of the Findings

This study has found that, demographic data reflected a relatively young population, with a mean age of approximately 31.3 years and a standard deviation of approximately 9.5 years. Marital status shows that 47.0% of respondents are married, while 36.1% are single. In terms of socioeconomic status, the mode of the social class is the lower class, accounting for 65.3% of respondents. Christian affiliation is highly prevalent, with 95.0% of respondents identifying as such. Educational attainment varies, with 39.1% having completed primary education, 30.2% secondary education, and 27.2% reporting no formal education. The occupation distribution reveals a high level of unemployment, with 82.2% of respondents being unemployed.

Moreover, Table 2 shows that most of the respondents had adequate level of knowledge on EMTCT services in Shangombo district, which clearly suggests widespread recognition within the target population. This is because the vast majority (93.6%) of the respondents have heard of EMTCT services in Shangombo district. The study has also revealed that, 84.6% of the respondents are aware that EMTCT services help to prevent the transmission of HIV from mother to child during pregnancy,

during labour, during delivery and during breastfeeding reflecting a solid grasp of its primary objective. The study has also disclosed that, nearly all respondents (93.1%) know where to access EMTCT services in Shangombo district, an indication of good dissemination of health information among the populace. The study also disclosed that, most of the respondents (93.1%) agreed that, they received information or counseling about EMTCT services during their pregnancy, which is a clear indication of an established system for education and support system. However, while 84.2% of respondents acknowledged the importance of exclusive breastfeeding in HIV prevention, 15.8% of study participants remained unaware, suggesting a need for further outreach education programs. Furthermore, while participation in EMTCT awareness sessions is notable at 44.6%, there is room for increased engagement of pregnant and breastfeeding mothers. The study also disclosed that, 61.9% of the respondents know the recommended duration for exclusive breastfeeding, which is an indication of moderate understanding about EMTCT services. Similarly, 57.9% of study participants are familiar with support services for HIV-positive mothers and infants, highlighting a need for further information dissemination among the population on the importance of EMTCT services. Social class, occupation, age, sex, and marital status were found to have a significant correlation with the level of knowledge of pregnant and breastfeeding mothers regarding the utilization of EMTCT services in Shangombo District, located in the Western Province of Zambia.

Moreover, the results of the present investigation align closely with those of a study conducted in South Africa focusing on awareness and attitudes toward HIV infection, as well as the prevention of mother-to-child transmission (PMTCT) among breastfeeding mothers. The study revealed that knowledge regarding HIV/AIDS and PMTCT played a crucial role in motivating individuals to seek antiretroviral therapy (ART). Specifically, it was found that 91% of participants were aware of the possibility of a mother transmitting HIV to her child. However, when asked about the modes of mother-to-child transmission (MTCT), only 55% identified pregnancy as a potential transmission route, and merely 19% recognized delivery as a transmission risk [6]. Furthermore, the results of the present investigation align with those of a comparable study conducted among breastfeeding mothers in the Manzini region of Eswatini. The study found that a significant majority of breastfeeding mothers living with HIV (77.8%) exhibited substantial knowledge regarding PMTCT. Additionally, 90% demonstrated favorable attitudes, and an equal proportion displayed positive behaviors towards PMTCT. Nonetheless, challenges such as stigma and discrimination within families, reluctance to disclose HIV status to sexual partners, economic hardship, and concerns about potential drug resistance in the future were identified as factors contributing to non-adherence to ARV prophylaxis. Moreover, inconsistent condom use, varied feeding practices, and the practice of wet-nursing were highlighted as additional factors contributing to the heightened risk of postnatal HIV transmission among breastfeeding mothers living with HIV. The study also noted a low level of knowledge, below 50% irrespective of educational background, on specific questions, which is likely to influence respondents' attitudes and behaviors, thereby increasing the risk of HIV transmission to their infants during breastfeeding [7].

The current study's findings align with research conducted in Tanzania, which found that most mothers were aware of Prevention of Mother-to-Child Transmission (PMTCT) services that were offered at antenatal clinics. They showed good understanding of HIV transmission risks during breastfeeding (99.8%) and labour (97.2%), but fewer (61.5%) knew about transmission during pregnancy. Almost all mothers (94.6%) received HIV information during antenatal care, and two-thirds (65.5%) received infant feeding counseling. HIV testing coverage was nearly complete, with 97.7% of mothers offered tests, and almost all accepted, except for one who had not received results. However, knowledge about condom use during pregnancy (54.5%) and breastfeeding (37.3%) was incomplete. Additionally, only half knew about the protective effect of exclusive breastfeeding against transmission during breastfeeding [8].

Moreover, the results from Table 3 show that, almost all pregnant and breastfeeding mothers (98.0%) in Shangombo District visited a health facility during their pregnancy or breastfeeding period. This is mainly due to massive health education, risk communication, and health communication as well as community engagement and social mobilization implemented in Shangombo district during which pregnant women are encouraged to attend antenatal care visits regularly throughout their pregnancy in order to monitor their health and the health of their unborn baby. These visits often include essential health checks, screenings, HIV testing services, vaccinations, and health education sessions on pregnancy, childbirth, nutrition, available services and newborn care. The expectation of receiving these vital services prompts many pregnant women to seek care at the nearest health facilities. Apart from that, the availability of comprehensive healthcare services for mothers and children in health facilities usually motivates them to visit health facilities regularly during their pregnancy and breastfeeding periods. However, despite this high rate of visits, only 91.6% were provided with information about Elimination of Mother-to-Child Transmission services during their visit. Additionally, while 92.6% of mothers knew where EMTCT services were available within the district, a concerning 75.7% of respondents faced challenges in accessing EMTCT services due to availability issues. These availability issues are mainly attributed to shortages of trained healthcare providers, inadequate infrastructure, and resource constraints at health facilities. While a considerable number of respondents (67.3%) found it easy to access EMTCT services within health facilities, a significant minority (32.7%) encountered difficulties, an indication of potential accessibility issues. It was also found that, a good proportion of study participants (88.6%) were aware about the benefits of timely utilization of EMTCT services. The study also disclosed that, most of the respondents (87.6%) agreed that, they discussed the steps involved on how to utilize and access EMTCT services with healthcare providers during their visit to the health facility. Such barriers as insufficient coverage of EMTCT services within the district, and long distances to health facilities offering such services were reported by 73.3% of respondents. Conversely, in rural areas like Shangombo District, where access to healthcare facilities may be limited, women may need to travel considerable distances for them to reach a facility offering EMTCT services. Moreover, poor road infrastructure and limited transportation options usually exacerbate the difficulty of accessing healthcare services, particularly for pregnant women who may face physical discomfort or mobility issues.

The present research's findings are comparable to those from a study conducted on pregnant women in Ethiopia. The survey discovered that around 94% of pregnant women visited a health institution for an ANC check-up. Only 18% and 9% of respondents went to the institution for HIV counselling and testing (HCT) and antiretroviral prophylaxis, respectively. The study further found that, approximately 90% of respondents were aware that an HIV-positive mother may transmit the virus to her child, and most women (72.4%) preferred MTCT through breast milk over transmission during pregnancy (49.7%) or birth (49.5%). Approximately 94% of study participants indicated that they were tested for HIV during their current pregnancy while 60% of respondents explained that their partners were also tested for HIV. The study further disclosed that, approximately 80% of respondents perceived adequate privacy and secrecy during therapy (90.8% at hospitals and 78.6% at health facilities), although 16% preferred a different counselor. The primary reasons given for not receiving HIV testing during the current pregnancy were the absence of counselors, inadequate counseling services, lack of awareness and information of HCT, lack of motivation, and psychological unpreparedness [9]. The results of this study also match those of another study in South Africa which found that many breastfeeding and pregnant women struggled to get PMTCT treatments due to poor roads, limited transportation, and weak communication systems, showing how poverty affects the area. The study further found that, families had little money for travel, and most lived far from health facilities offering PMTCT services. Emergency transportation was hard to come by and expensive in these remote areas. Poor infrastructure also meant that, many households lacked safe drinking water, making it hard for them to use baby formula which further exacerbated the situation. Additionally, pregnant and nursing women faced challenges such as underfunded health facilities which were not able to offer the needed services due to lack of material resources. The author suggested introducing mobile PMTCT services and involving traditional birth attendants and local groups to educate the community about PMTCT benefits [10].

In addition, the results from Table 4 shows that, many respondent (94.1%) agreed that, healthcare providers play a critical role in shaping the perceptions of pregnant and breastfeeding mothers regarding EMTCT services in Shangombo District. This clearly highlights the pivotal position which healthcare providers hold in influencing healthcare-seeking behaviours among the respondents in the community. Apart from that, the study further revealed that, a significant majority of respondents (89.6%) agreed that, positive attitudes among healthcare providers greatly influence the uptake of EMTCT services among pregnant and breastfeeding mothers. The study further disclosed that, most of the respondents (87.6%) affirmed that, negative attitudes of healthcare providers deter pregnant and breastfeeding mothers from accessing EMTCT services in Shangombo District. The study also exposed that, a significant majority (90.8%) of respondents recognized effective communication by healthcare providers as a crucial factor in encouraging pregnant and breastfeeding mothers to utilize EMTCT services in the district. These findings underscore the interconnectedness of positive attitudes and clear communication in fostering engagement with essential healthcare services. The results have also revealed that, most of the respondents (93.1%) agreed that, improving healthcare provider attitudes has the potential to increase the utilization of

EMTCT services among pregnant and breastfeeding mothers in Shangombo district. The study also disclosed that healthcare provider attitudes and communication are perceived as equally important in influencing the uptake of EMTCT services among pregnant and breastfeeding mothers, with 90.3% of respondents agreeing to this statement. The findings also show that, most of the study participants (90.6%) affirmed that, positive interactions with healthcare providers have a notable impact on the decision making process of pregnant and breastfeeding mothers to engage with EMTCT services in the district. Additionally, a strong correlation, highlighted by 88.2% of respondents, between healthcare provider communication skills and the likelihood of pregnant and breastfeeding mothers seeking EMTCT services was observed, emphasizing the importance of effective communication strategies in healthcare settings. Age, religion, social class, and occupation were found to have a substantial relationship with the attitudes and communication of healthcare providers regarding EMTCT uptake among pregnant and breastfeeding mothers in Shangombo District which is located in Zambia's Western Province.

The findings from this study are in line with the results from a study which was carried out in Ghana on the attitudes and perception of midwives towards EMTCT services. The study found that, most of the respondents (70%) held optimistic views regarding the EMTCT of HIV services, while 85% exhibited favorable attitudes toward their provision. The study further found that, in their practice, midwives systematically screened every pregnant woman attending the ANCs, directing those with HIV positive results to other facilities for ongoing monitoring and further management. Among the factors taken into account were opinions regarding the retesting of HIV-positive pregnant women during their gestation period. Notably, a direct connection emerged between the attitudes and perceptions of midwives concerning PMTCT of HIV services [11]. The results of this study align with those of a similar research conducted in Togo, focusing on practices, attitudes, and knowledge. The Togo study revealed that a majority of respondents or healthcare providers (83%) exhibited positive attitudes towards the PMTCT program, with 87% referring pregnant women for HIV serology testing [12]. However, the findings from this study are not in line with the study which was done in Sub-Saharan Africa which found that, the large proportion of study participants (60.7%) had negative attitudes towards EMTCT services. It was further found that, only respondents aged more than 33 years had positive attitudes towards EMTCT services [13,27].

Other than that, the findings of the current study are consistent with those of a study conducted in Uganda. Interviews with adolescent and young mothers in that study disclosed that the care and attention they received from healthcare providers can encourage other mothers to make use of EMTCT services. Additionally, the study revealed that negative attitudes among healthcare workers act as a hindrance or barrier to the utilization of EMTCT services among the pregnant and breastfeeding mothers. Various participants recounted incidents, such as nurses mistreating pregnant young girls, causing most of them to run away before being attended to, and instances of rudeness towards mothers when healthcare workers were fatigued or overworked [14]. The findings from this study affirms a similar study done in Tanzania where healthcare worker reported that

effective communication via knowledge transfer to the patient or psycho-social support influenced the uptake of EMTCT services. Interestingly, findings from the study reports that unclear communication did not necessarily impede the use of EMTCT services as some of the patients reported taking their drugs despite confusion over their purpose [15]. Moreover, the findings of the current study align with those of a similar study conducted in Ethiopia. They observed that unfriendly or negative attitudes displayed by healthcare providers acted as a deterrent for pregnant and breastfeeding mothers in accessing and utilizing EMTCT services. This suggests a common barrier across different settings, emphasizing the importance of addressing healthcare provider attitudes to improve service utilization and ultimately prevent mother-to-child transmission of HIV/AIDS [16, 21, 22].

Moreover, these findings corroborate the systematic review conducted by one researcher who emphasized the crucial role played by healthcare providers, such as midwives, in influencing the acceptance and utilization of PMTCT services among the pregnant and breastfeeding mothers. This influence has been shown to have a positive impact on shaping patient perceptions towards EMTCT services utilization in the community. Additionally, these findings are consistent with the research by another scholar who highlighted a significant correlation between healthcare provider attitudes and the adoption of PMTCT services among pregnant and breastfeeding mothers in Malawi. This evidence supports the notion that both positive and negative attitudes of healthcare providers are essential in influencing service utilization among pregnant and breastfeeding mothers. This alignment with previous studies underscores the significant role of provider attitudes in the utilization of EMTCT services [17,18, 23, 24].

In addition, these findings are in line with one study which found that the attitudes of healthcare providers play a vital role in enhancing both the quality of care and the utilization of EMTCT services among pregnant and breastfeeding mothers. The study showed that positive provider attitudes are associated with an increase in the uptake of EMTCT services. This conclusion is further supported by another research, which emphasized that interactions between healthcare providers and pregnant women are crucial in influencing their decisions regarding HIV testing and EMTCT services [19,20]. Both studies highlight the significant impact of provider-patient relationships on decision-making, underlining the importance of fostering positive attitudes among healthcare providers to improve service utilization and care quality.

Recommendations

The researcher recommends that, Shangombo District Health Office should continue strengthening and expanding health education, risk communication and conduct awareness campaigns to ensure that all pregnant and breastfeeding mothers are well-informed about EMTCT services.

The researcher further recommends that, the District Health office should ensure that, communication and counseling services are provided to pregnant and breastfeeding mothers during their visit to maternal and child health (MCH) Clinical Services. This will ensure that healthcare providers effectively discuss all the steps involved in the utilization of EMTCT services to the mothers.

More also, the researcher recommends that, Shangombo District Health Office should continue capacity building of healthcare providers to improve their attitudes, communication skills, counselling skills and promote health awareness of EMTCT services in order to achieve patient's and clients' satisfaction.

The researcher also recommends that, Shangombo District Health Office should continue to foster community engagement and social mobilization initiatives in order to enhance understanding and acceptance of EMTCT services among pregnant and breastfeeding mothers.

The author further recommends that, there is need to ensure that all barriers to EMTCT services are addressed in order to improve its accessibility and availability among pregnant and breastfeeding mothers in Shangombo District, in the Western Province of Zambia.

The author also recommends that, there is a need to conduct a comprehensive study on the impact of healthcare provider attitudes and communication on the utilization of Elimination of Mother-to-Child Transmission (EMTCT) services in Shangombo District of Zambia.

Conclusion

In conclusion, the findings reveal a high level of awareness among pregnant and breastfeeding mothers regarding EMTCT services, indicating effective dissemination of health information through various channels such as health education, health communication, Social mobilization and community engagement. While respondents demonstrate adequate level of knowledge about EMTCT services and their benefits, challenges persist in accessing these services due to availability issues. Efforts should thus concentrate on improving availability, enhancing communication and counseling skills among healthcare providers, addressing accessibility barriers, and strengthening provider training in order to ensure optimal care and support for EMTCT services utilization among pregnant and breastfeeding mothers. Additionally, there is a need to raise awareness about exclusive breastfeeding and increase community participation in EMTCT awareness programs through targeted outreach and health education initiatives. Furthermore, the study highlights the pivotal role of healthcare providers in shaping perceptions and behaviors related to EMTCT services among pregnant and breastfeeding mothers. Positive provider attitudes and effective communication are essential for encouraging utilization of EMTCT services. However, challenges such as negative provider attitudes hinder access to these services. Therefore, addressing these challenges, while reinforcing positive attitudes and improving communication skills, holds promise for increasing the uptake of EMTCT services and reducing HIV transmission from mother to child in Shangombo District, in the Western province of Zambia.

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Conflicts of Interest

The authors declare no conflicts of interest.

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