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Original Research Article

Factors influencing HIV-free survival among exposed infants in Homa Bay County: a qualitative analysis

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ABSTRACT

Background: Prevention of mother-to-child transmission programs significantly reduce the transmission of Human Immunodeficiency Virus (HIV) from mothers to children. However, uptake remains low in high-prevalence areas such as Homa Bay County, Kenya. Socio-economic, cultural, and logistical factors limit integration of prevention of mother-to-child transmission into maternal and child health services.
Methods: This study explored barriers and enablers to uptake of prevention of mother-to-child transmission services among human immunodeficiency virus-positive mothers. Data were collected from 13 key informant interviews with healthcare providers and eight focus group discussions with human immunodeficiency virus-positive mothers across seven sub-counties of Homa Bay County. The Gioia methodology guided thematic analysis to identify first-order concepts, second-order themes, and aggregate dimensions.
Results: Participants identified major barriers including stigma, economic hardship, transportation challenges, cultural norms, misinformation, and gaps in the referral system. Enablers of service uptake included male partner involvement, effective service delivery models, peer support systems, and community sensitization. Emotional and nutritional support, alongside consistent health education, were considered essential to improving adherence to prevention of mother-to-child transmission protocols.
Conclusions: Improving uptake of prevention of mother-to-child transmission in high human immunodeficiency virus-prevalence settings requires addressing both systemic and sociocultural barriers. Interventions should enhance male participation, community engagement, service integration, and referral coordination. These findings support need for multifaceted, context-sensitive strategies to strengthen prevention of mother-to-child transmission outcomes in Homa Bay County.

Keywords: Barriers to care, Homa Bay County, Human immunodeficiency virus, Maternal health, Prevention of mother-to-child transmission

INTRODUCTION

Approximately 2.5 million children live with Human Immunodeficiency Virus (HIV), majority in sub-Saharan Africa.[1] Many acquire infection from their mothers during birth, breastfeeding, or pregnancy.[2–3] Mother-to-child transmission remains the most significant source of HIV in children.[4] Crucial intervention to prevent HIV transmission is the introduction of Prevention of Mother-to-Child Transmission programs (PMTCT).[5] During pregnancy, labor, delivery, and breastfeeding, PMTCT therapies help prevent HIV transmission from an infected mother to her child.[6] Timely antiretroviral therapy to an HIV-positive pregnant woman and her unborn child

dramatically lowers risk of Mother-to-Child Transmission (MTCT).[7,8] Consequently, PMTCT is a critical public health strategy.[9-11]

Prevention of Mother-to-Child Transmission interventions can reduce risk of HIV transmission from 45% to 5% during pregnancy, delivery, and lactation.[4] The World Health Organization recommends option B lifelong ART for all HIV-positive pregnant and nursing women, regardless of clinical condition.[12] Early infant diagnosis programs track HIV-exposed infants until the age of two.[4] In 2002, the United Nations established a four-pronged approach aimed at preventing HIV in reproductive-age women, reducing unintended pregnancies among HIV-positive women, limiting mother-to-child transmission, and providing care for affected families,[13] seeking to reduce HIV transmission, increase ART access, and improve survival outcomes.[14,15]

Kenya began implementing PMTCT initiatives as stand-alone projects in 2002.[16] Despite success, a significant number of mothers continue to drop out, primarily due to stigma associated with Comprehensive Care Clinics (CCCs).[17] Prevention of Mother-to-Child Transmission is increasingly being integrated into maternal and newborn healthcare services, aiming to enhance access for women and children while optimizing financial and human resources to improve service quality, and may help reduce stigma faced by HIV-positive women.[18-20] The Kenyan government still encounters various barriers.[21] Socioeconomic and cultural factors remain critical obstacles to care.[22-24]

Homa Bay County, located in western Kenya, has one of the highest HIV incidence and prevalence rates in the country, approximately 15% of new HIV cases.[21,25] While logistical and economic barriers to PMTCT services have been studied, impact of community attitudes, gender norms, stigma, and traditional beliefs remains under explored.[26,27] Male involvement and psychosocial support networks in PMTCT are understudied.[28]

METHODS

Study design

A qualitative exploratory research design was used to examine barriers and enablers affecting the uptake of PMTCT services in Homa Bay County, Kenya, conducted within the context of a broader longitudinal cohort study (January 2019 to November 2020) that tracked HIV-exposed infants and their mothers.

Data collection

Thirteen key informant interviews with healthcare providers and eight focus group discussions with HIV-positive mothers. The Gioia methodology was applied to conduct thematic analysis, enabling the systematic categorization of data into first-order concepts and second-order themes to provide a comprehensive understanding of service utilization. Key informant interviews were conducted with healthcare providers, and focus group discussions (FGDs) were conducted with mothers.

Study area

Homa Bay County is located in the western part of Kenya. It sits along the shores of Lake Victoria, the largest lake in Africa.

Inclusion criteria

HIV positive mothers at between 38 weeks of gestation and term (using uterine height and date of last menstrual period, and ultrasound when available), residing within Homa Bay County, who have been informed of the study's details and signed an informed consent form.

Exclusion criteria

HIV positive mothers between 38 weeks of gestation and term, not intending to be within Homa Bay County during the study period were excluded. Also, HIV-positive mothers near full term whose religious or cultural beliefs affect their use of modern health care were excluded.

Data analysis

In line with the inductive and interpretive approach and Gioia's methodology, the researcher shifted back and forth, exploring theory and analyzing data from the interviews and focus groups, structured as follows. First-order analysis identifies codes and categories based on participants' recurrent expressions. Afterward, categories were abstracted into second-order themes. In this step, the findings are compared with the existing literature, leading to refined codes and concepts that link theory and data. Final step, data-driven categories and theoretically informed themes were aggregated into dimensions, following recommendations of Gioia, Corley, and Hamilton.

RESULTS

Demographic characteristics of participants

Participants' demographic details are summarized in Table 1. All key informants had undergone PMTCT training, ensuring substantial experience in providing PMTCT services.

Thematic analysis

Transcripts from interviews and focus groups were coded to identify first-order concepts, grouped into second-order themes, and further refined into aggregate dimensions. A data structure was then created to visualize emerging themes and concepts (Figure 1). Based on Gioia

methodology, seven main themes emerged, which were grouped into three aggregate dimensions.

Barriers and enablers of access- two themes: Barriers to accessing PMTCT services; and male involvement in PMTCT.

Service delivery and implementation- three themes: effective service delivery, adherence to treatment protocols, and infant feeding practices.

Psycho-social and cultural dynamics- two themes: socio-cultural dynamics that shape perceptions and behaviors, and psycho-social and emotional needs.

Table 1: Demographic details of key informant interview participants.

Participant	Facility	Profession	PMTCT training (year)	Key duties	Date of interview
Participant 1	Nyangiela Health Center	Nursing Officer	2012	Refill antiretroviral therapy, antenatal services, discuss clients failing medication, client reminders, and health education	22/02/2021
Participant 2	Ndiru Health Center	Nurse	2012	Refill antiretroviral therapy, general check-ups, counseling, timely VR/PCR uptake, antenatal services, tracing clients	10/06/2021
Participant 3	Nyangiela Health Center	Nursing Officer	2014	Timekeeping, counseling, client bookings, health education, follow-ups	22/02/2021
Participant 4	Ndiru Health Center	Nurse	2015	Refill antiretroviral therapy, VR/PCR for HEI, antenatal services, counseling, tracing clients	10/06/2021
Participant 5	Konyango Health Center	Nurse	2012	Counseling, antiretroviral therapy/prophylaxis refill, home visits, client follow-ups	10/03/2021
Participant 6	Miranga Health Center	Nurse	2012	Antiretroviral therapy refills, health education, ANC, follow-ups, client tracing	11/05/2021
Participant 7	Ndhiwa Sub-County Hospital	Clinical Officer	2012	Health education, day-to-day care, linkage to antiretroviral therapy, and psychological support	14/07/2021
Participant 8	Ngegu Dispensary	Nursing Officer	2012	Antiretroviral therapy refills, adherence counseling, nutritional education, PCR/HEI follow-ups	10/03/2021
Participant 9	Miranga Health Center	Nurse	2012	Day-to-day care, maternal health education, follow-ups, and client defaulter tracing	11/05/2021
Participant 10	Nyadhiwa Sub County hospital	Clinical Officer	2012	Antiretroviral therapy refills, nutritional counseling, adherence counseling, and client follow-ups	13/04/2021
Participant 11	Ober Health Center	Nurse	2013	Antiretroviral therapy refills, client follow-ups, psychological support, and continuous health education	14/04/2021
Participant 12	Rangwe Sub-County Hospital	Nursing/ Clinical Officer	2012	Day-to-day care, antiretroviral therapy refills, health education, community sensitization	10/03/2021
Participant 13	Nyangiela Health Center	Nursing Officer	2014	Counseling, community sensitization, continuous health education, and follow-ups	22/02/2021

Theme 1: Barriers to accessing Prevention of Mother-to-Child Transmission Services

Insights from participants highlight key barriers. Summarized in Table 2.

Stigma as a barrier: Many participants avoided seeking assistance for fear of community criticism and rejection. *"Some clients refuse care because they are afraid of being identified as* HIV-*positive in the community"* (interview participant 11). *"Stigma is a huge barrier. Some people in our community look down on us for being* HIV-*positive, making it hard to seek help"* (focus group 7 participant). The comment shows that stigma leads people to internalize societal criticism and isolate themselves.

Transportation challenges**:** Where health facilities are far apart, and travel costs are high. *"Poverty makes it difficult for clients to travel to high-level facilities when referred"* (interview participant 6). This highlights the simultaneous challenges of distance and economic hardship. "*Transportation can be difficult. Clinics can be far and*

expensive to reach" (focus group 7 participant), demonstrating how geography and budget limit access to vital services.

Economic hardships: Financial constraints prohibited prioritizing healthcare. "*Many clients cannot afford transport or other associated costs*" (interview participant 13). This comment shows that the costs of PMTCT include daycare, lost earnings, and dietary needs, in addition to transportation. "*Poverty is a major reason clients fail to adhere to referrals or access services*" (interview participant 13). Financial pressures impact care.

Knowledge gaps and misinformation**:** One participant said, *"Some clients are unaware of the importance of seeking* PMTCT *services"* (interview participant 9). *"There's also a lot of misinformation about HIV and* PMTCT*, so some women don't know they should seek these services"* (focus group 7 participant). Myths surrounding HIV transmission and PMTCT services encourage avoidance, particularly where misinformation prevails.

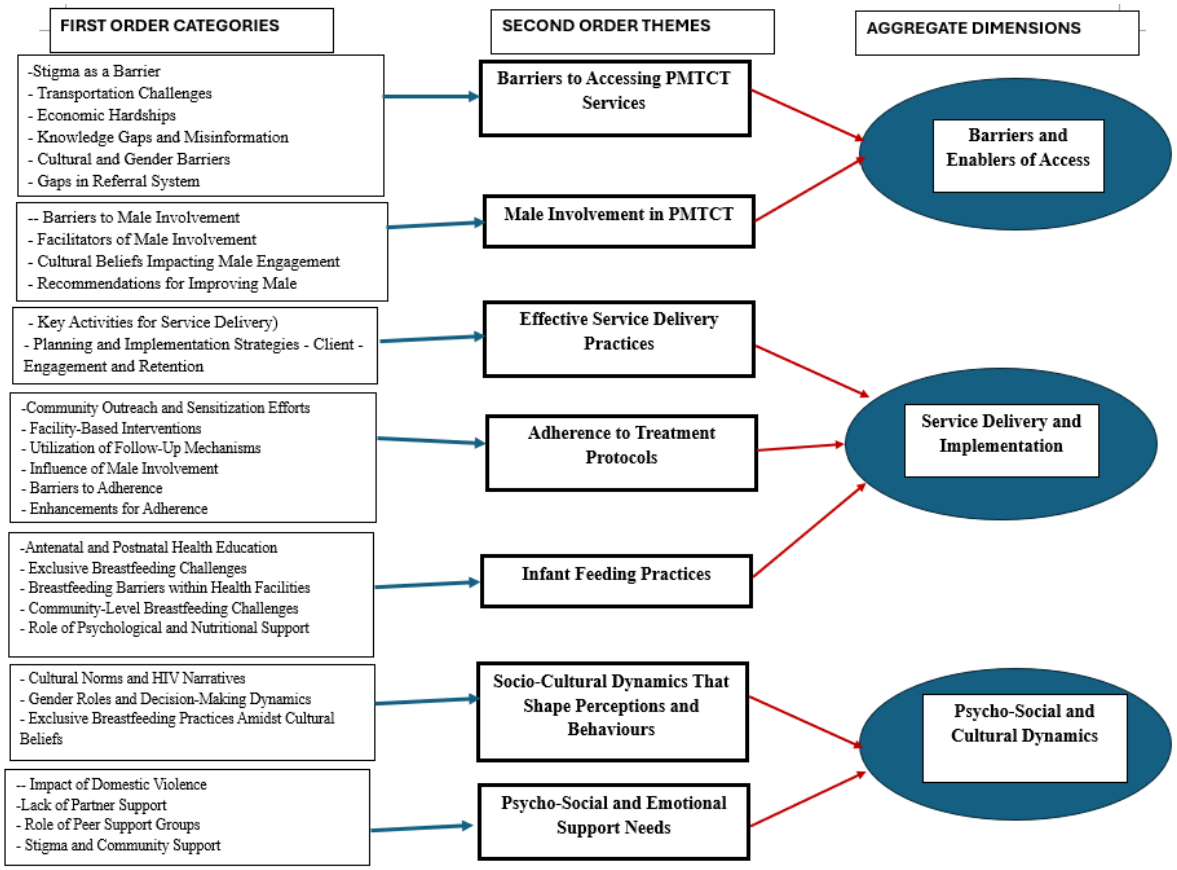

Figure 1: Data structure showing the first-order categories, themes, and aggregate dimensions.

Cultural and gender barriers**:** Many participants' male un-involvement in healthcare decision-making is a significant barrier to Preve PMTCT services for women. *"Many men feel they shouldn't be involved in women's health matters, which can limit their participation"* (focus group 7 participant). Another focus group 8 participant said, *"Cultural beliefs often dictate that women handle health matters alone, making it hard for them to access necessary support."* These emphasize the critical influence of cultural attitudes and highlight the need for community engagement to foster gender parity in healthcare.

Gaps in the referral system**:** *"Poverty makes it difficult for clients to travel to high-level facilities when referred"* (interview participant 6). Participant emphasized lack of clarity in the referral process, stating, *"Clients often fail to follow referrals due to a lack of resources and inadequate guidance"* (interview participant 8)- inefficiencies within the referral system, where inadequate communication and support mechanisms contribute to missed opportunities for essential care.

A nurse suggested, *"Clients should be supported so that most services they are referred for are either free or subsidized."* (interview participant 6). *"If proper*

communication is done before the referral, it would help reduce confusion and ensure that clients know exactly where to go and what to expect." (interview participant 10). *"We refer clients, but there is no follow-up to see if they made it to the referral facility or received the care they needed."* (interview participant 5). Ensuring continued engagement after referral was identified as a critical step to improving health outcomes and minimizing care disruptions.

Table 2: Subthemes for barriers to accessing prevention of mother-to-child transmission services.

Subtheme	Description	Representative quote
Stigma as a barrier	Fear of being identified as HIV-positive deters clients from seeking PMTCT services.	*"Some clients refuse care because they are afraid of being identified as* HIV-*positive in the community"* (interview participant 11).
Transportation challenges	Long distances and high transportation costs hinder access to PMTCT services.	*"Transportation can be difficult, too. Sometimes the clinics are far away, and getting there is expensive"* (focus group 7 participant).
Economic hardships	Financial difficulties prevent clients from affording transport and the associated costs of PMTCT care.	*"Many clients cannot afford transport or other associated costs"* (focus group 6 participant).
Knowledge gaps and misinformation	Lack of awareness and misconceptions about PMTCT limit service utilization.	*"Some clients are unaware of the importance of seeking PMTCT services"* (interview participant 9).
Cultural and gender barriers	Traditional gender roles and cultural norms discourage male involvement and restrict support for women accessing PMTCT.	*"Cultural beliefs often dictate that women handle health matters alone, making it hard for them to access necessary support"* (focus group 8 participant).
Gaps in the referral system	Poor communication, financial strain, and inadequate guidance hinder the successful follow-up of referrals.	*"Clients often fail to follow referrals due to a lack of resources and inadequate guidance"* (focus group 8 participant).

PMTCT-Prevention of Mother-to-Child Transmission; HIV-Human Immunodeficiency Virus

Table 3: Effective service delivery practices.

Subtheme	Category/activity	Representative quote
Key activities for service delivery	Antiretroviral therapy: refills and client check-ups	*"Refill of* antiretroviral therapy *and general checking of clients"* (interview participants 1, 2, 5, 9, 10, 12).
	Providing antenatal services	*"Providing antenatal services"* (interview participants 1, 2, 9, 10).
	Counseling and adherence discussions	*"Discussing clients who are failing on medication"* (interview participants 1, 2, 5, 9, 12).
	Health education and physiological support	*"Health education and physiological support provided before seeing clients"* (interview participants 2, 4, 6).
	Infant feeding health education	*"Teaching the importance of exclusive breastfeeding for six months"* (interview participants 4, 6, 9).
	Follow-ups and tracing	*"We trace clients who miss appointments to ensure they return for care"* (interview participants 1, 2, 4, 6).
Planning and implementation strategies	Daily bookings and appointment scheduling	*"Activities are planned by booking clients daily"* (interview participants 1, 4, 6).
	Community sensitization and awareness	*"Community sensitization programs to reduce stigma and encourage service uptake"* (focus group 7: participants 15, 25).
	Peer and mentor support	*"Involving peer educators and mentor mothers in PMTCT services"*(interview participants 6, 9).
	NGO and government support	*"The Ministry of Health and EGPAF supports these activities"* (interview participants 4, 6, 9, 10).
Client engagement and retention	Timely follow-ups	*"Phone reminders help clients stay engaged in* PMTCT *care"* (interview participants 1, 6, 9).
	Privacy and confidentiality	*"Maintaining privacy encourages clients to continue care"* (interview participant 6).

Theme 4: Adherence to treatment protocols

Interviews and focus groups revealed healthcare facilities' tactics, community and facility-based interventions, follow-up mechanisms, counseling, and male involvement. Table 4 summarizes the identified key concepts under this theme.

Community awareness campaigns coordinated by trustworthy local leaders and peer educators reduce stigma and boost treatment uptake, making discussions about Human Immunodeficiency Virus more comfortable for participants, they claimed. However, stigma and resource limits limit their potential. Access is improved via facility-based antiretroviral therapy, nutritional counselling, and psychological support. Understaffing and large patient volumes hinder responsibility and trust, although appointment reminders and planned therapy sessions help.

Mentor mothers, peer educators, and mobile reminders provide continuity and emotional support. Even with these attempts, tracking patients' rapidly changing demands requires greater networks and technology. Male involvement is crucial because supportive spouses improve adherence through shared accountability. Participants emphasized that inclusive health education can boost male participation, reduce stigma, and improve adherence and outcomes.

Prevention of Mother-to-Child Transmission program adherence issues demonstrate the difficulty of maintaining client treatment. Stigma and prejudice were major issues because the fear of judgment deters therapy. *"Fear of stigma stops people from coming to the clinic or taking their medication openly"* (interview participant 6). Participants cited transport and other expenditures as prohibitive, and food insecurity, especially for women using medicine. Domestic abuse and male apathy also weaken treatment adherence support structures. Relocating without notifying healthcare facilities hampers follow-up and challenges continuity of care.

Participants suggested adherence tactics; integrating services under one roof reduced logistical challenges, while community-based support groups and mentor programs reduced isolation and promoted adherence. *"Creating support groups in the community helps patients feel less isolated and more encouraged to adhere"* (interview participant 4). To reduce financial stress, food support was suggested, along with funding for income-generating activities. Phone reminders and peer-led tracing networks can improve patient participation.

Table 4: Subthemes and representative quotes for adherence to treatment protocols.

Subtheme	Description	Representative quotes
Community outreach and sensitization efforts	Focus on educating communities to reduce stigma and encourage service uptake and adherence to treatment.	*"We conduct community awareness campaigns to educate people on HIV, its treatment, and why adherence is important"* (interview participant 1).
Facility-based interventions	Strategies implemented at healthcare facilities include routine education, service integration, and specialized support.	*"Antiretroviral therapy is provided alongside counseling and nutritional education, all under one roof"* (key informant interview); *"We are reminded of our appointments during every clinic visit"* (focus group 4 participant).
Utilization of follow-up mechanisms, reminders, and counseling	Tracking clients through reminders, counseling, and tracing missed appointments to sustain adherence.	*"Mentor mothers and peer educators are key in following up with patients"* (key informant interview).
Influence of male involvement in maintaining treatment consistency	The role of male support in enhancing adherence among mothers and families.	*"When husbands accompany their wives to clinics, it boosts the women's confidence and encourages them to stick to their treatment"* (interview participant 11)
Barriers to adherence	Factors such as stigma, domestic violence, food insecurity, and financial constraints hinder treatment adherence.	*"Mothers lack enough food to eat to provide breast milk and sustain their health while on medication"* (interview participant 3).
Proposed enhancements for adherence	Suggestions for improving adherence, including integrating services and providing psychosocial and economic support.	*"Providing all services under one roof"* (interview participant 5); *"Ensure active support group"* (interview participant 4, 7, 8, and 9).

Theme 2: Male involvement in Prevention of Mother-to-Child Transmission services

The theme explores factors limiting male participation, strategies to facilitate their involvement, and the wide-ranging benefits of male engagement in PMTCT services.

The key issue was the stigma men face when attending clinics. A participant expressed, *"Fears of sitting between women because of stigma. Other women will also know that they are HIV positive.* "The demanding nature of men's work, particularly those engaged in night fishing, limits their availability during clinic hours. *"Because they are fishing at night, they are not getting time to come with their wives because during the day they are sleeping"* (focus group 3 participant). Logistical challenges, long waiting times, and the perception that clinic settings are designed primarily for women discourage male involvement. *"They are waiting for a long time before being served, and booking makes it difficult for male involvement"* (interview participant 9). Participants highlighted the need for structural adjustments and community-level advocacy to improve male participation. Prioritizing men at clinics was suggested as an effective strategy: *"Being given priority as they come for* PMTCT *services encourages attendance."* Another added that respectful communication from healthcare workers could further motivate male involvement, stating, *"By talking to them in a friendly manner and not shouting at them when they missed their appointment."*(interview participant 3). Community-based interventions such as education programs for men and support groups were recommended. *"Encouraging community leaders to advocate for male engagement can help shift perceptions,"* reflecting the potential of leadership to influence societal attitudes (focus group 7).

A participant remarked, *"In our culture, many still believe that issues related to* HIV *and health care are women's responsibilities"* (focus group 5 participant*). "Some men worry about challenges to their masculinity if they show involvement in what is seen as a female issue". (*focus group 1 participant). These necessitate targeted interventions to address deep-rooted perceptions about gender roles and health responsibilities.

Proposed various strategies to enhance male participation included regular health education for men and couples. *"Conduct health education regularly when they come for their visits"* (interview participant 10). Home visits to educate and support families could bridge existing gaps. *"Conduct home visits to see how they live and how they give prophylaxis to their infants"*(interview participant 1). These insights underline the importance of multi-faceted approaches that combine systemic changes, community engagement, and cultural sensitivity to promote male involvement in PMTCT services.

Theme 5: Infant feeding practices

Antenatal and post-natal education, barriers to exclusive breastfeeding, and psychological and nutritional assistance are important. Qualitative insights concerning infant feeding practices are summarized in Table 5.

Table 5: Subthemes for theme 7-infant feeding practices.

Subtheme	Description	Representative quotes
Antenatal and postnatal health education	Structured sessions were provided to educate HIV-positive mothers on infant feeding practices.	"*They are taught the importance of exclusive breastfeeding until six months*." (interview participant 1)
Exclusive breastfeeding challenges	Barriers to adherence to exclusive breastfeeding among HIV-positive mothers.	"Mother lacks enough food to eat to provide sufficient breast milk." (focus group 3 participant)
Barriers within health facilities	Institutional challenges affecting the implementation of feeding practices.	"We lack enough food support for the clients, even for those in need." (interview participant 4)
Community-level challenges and recommendations	Societal and cultural factors impacting infant feeding practices and proposed solutions.	"Encourage men to support their partners to adhere to infant feeding guidelines." (focus group 5 participant)
Role of psychological and nutritional support	Continuous support mechanisms to enhance adherence to infant feeding guidelines.	"Provide continuous psychological and nutritional support to mothers." (interview participant 7)

Key issues include health education, exclusive breastfeeding barriers, facility constraints, and community stigma. Participants emphasized the need for nutritional aid and a supportive family environment to improve adherence. *"They are taught the importance of exclusive breastfeeding until six months"* (*interview participant 1*).

Healthcare facilities struggle to provide adequate support due to resource limitations, insufficient food assistance, and frequent medication shortages. *"We lack enough food support for the clients, even for those in need"* (interview participant 4), while another participant noted, *"There is often a shortage of infant prophylaxis"* (interview participant 10). Participants recommended community sensitization campaigns to reduce discrimination and

encourage supportive practices. *"Create community awareness to reduce discrimination and support mothers"* (interview participant 9). Promoting male involvement was viewed as essential: *"Encourage men to support their partners to adhere to infant feeding guidelines"* (focus group 5 participant).

Peer mentorship programs and support groups provide valuable emotional and informational assistance. *"Provide continuous psychological and nutritional support to mothers"* (interview participant 7), another added, *"Clients with special needs are seen separately in their support groups"* (interview participant 6).

Theme 3: Effective service delivery practices

Antiretroviral therapy refills, prenatal services, counselling, health education, and community involvement address service delivery and accessibility. Key activities for service delivery, planning and implementation strategies, and client engagement and retention strategies were identified (Table 3).

"*Our main duties are to provide antenatal services and refill ARVs*" (interview participant 9). Frequent antiretroviral therapy refills and prenatal care improve patient-provider relationships and minimize medication interruptions, which ultimately improve PMTCT outcomes.

Counselling has become a vital part of service delivery, helping clients manage medication-related issues and combat stigma. "*We talk about clients who are not taking their medications as a way to understand their problems and find solutions*" (interview participant 1). Building trust and promoting adherence are two benefits of empathic involvement, particularly for patients who are dealing with negative pharmacological effects or social stigma. Health education programs help to clarify myths. "*Teaching women about exclusive breastfeeding helps them protect their babies"* (interview participant 4). Having accurate information enhances adherence to PMTCT treatments and empowers women to make educated decisions.

Phone reminders and proactive tracing efforts were cited as effective tools for re-engaging clients who missed appointments. "*We trace clients who miss appointments to ensure they return for care*," said a participant (interview participant 6).

Planning and implementation strategies that optimize healthcare delivery were highlighted, including daily appointment scheduling to reduce overcrowding and improve service efficiency. "*Activities are planned by booking clients daily to avoid overcrowding*," (interview participant 6). Community sensitization and awareness campaigns were found to be effective in reducing stigma and promoting service uptake, with local leaders and peer educators playing key roles in outreach. "*Community sensitization programs help reduce stigma and encourage mothers to seek care*" (focus group 7 participant). Furthermore, involving mentor mothers fosters emotional support and inspires clients, as reflected in the comment, *"Involving mentor mothers helps clients see that living positively is manageable"* (interview participant 8).

External support from non-governmental organizations and government agencies enhances service delivery by providing resources and expertise. "*These activities are supported by NGOs, which makes it easier to reach more clients*" (interview participant 10).

Participants highlighted the importance of timely reminders and maintaining confidentiality during consultations. "*Phone reminders help clients stay engaged in PMTCT care*" (interview participant 1). Ensuring privacy during consultations was deemed essential in fostering trust and comfort: "*Privacy during consultations helps mothers feel comfortable and safe" (*interview participant 6). These practices reduce stigma, enhance trust, and improve adherence.

Table 6: Subthemes socio-cultural dynamics.

Subtheme	Description	Representative quotes
Cultural norms and human immunodeficiency virus narratives	Cultural beliefs frame Human Immunodeficiency Virus as a curse or punishment, perpetuating stigma and discouraging open discussion.	"In some communities, people think HIV is a curse or punishment, so they avoid discussing it openly" (interview participant 6). "There are people who believe that breastfeeding spreads HIV no matter what" (FGD 8 participant).
Gender roles and decision-making dynamics	Traditional gender roles limit women's healthcare autonomy and discourage male involvement in PMTCT.	"Men are not involved, which makes it harder for mothers to adhere to treatment" (interview participant 5). "Many men feel they shouldn't be involved in women's health matters, which can limit their participation" (FGD 8 participant).
Exclusive breastfeeding practices	Societal misconceptions about breastfeeding and food insecurity hinder adherence to guidelines.	"Some people think that if you're HIV-positive, you should just use formula, even if exclusive breastfeeding can be safe" (FGD 7 participant). "Food insecurity is a major challenge. Without enough to eat, it's hard to sustain breastfeeding" (interview participant 13).

Theme 6: Socio-cultural dynamics that shape perceptions and behaviors

The subthemes that emerged include cultural norms and HIV narratives; gender roles and decision-making dynamics; and exclusive breastfeeding amid cultural beliefs (Table 6).

Cultural norms and HIV narratives

Many participants highlighted how Human Immunodeficiency Virus is perceived through the lens of punishment or curses, perpetuating stigma and silence. One participant noted,

"*In some communities, people think* HIV *is a curse or punishment, so they avoid discussing it openly***"** (interview participant 6).

"Stigma is a huge barrier. Some people in our community look down on us for being HIV-*positive, making it hard to seek help"* (FGD 7 participant 3).

Misconceptions about HIV transmission also emerge within this context, with participants expressing fear and misinformation.

"There are people who believe that breastfeeding spreads HIV *no matter what"* (FGD 8 participant 3).

Gender roles and decision-making dynamics

Traditional gender roles significantly influence access to HIV prevention services and decision-making processes.

"Men are not involved, which makes it harder for mothers to adhere to treatment" (interview participant 5).

Participants described the impact of limited male engagement on the prevention of mother-to-child transmission outcomes:

"Many men feel they shouldn't be involved in women's health matters, which can limit their participation" (FGD 8 participant 12).

At the same time, some participants acknowledged potential for improvement if men actively supported their partners:

"If men see other men actively supporting their partners, they may feel encouraged to join in, too" (focused group discussion 8 participant 15).

Addressing patriarchal norms and promoting male involvement is critical for enhancing adherence and reducing stigma associated with HIV.

Exclusive breastfeeding practices amidst cultural beliefs

Exclusive breastfeeding among HIV-positive mothers often intersects with cultural beliefs and misinformation. Many mothers recounted societal opposition to breastfeeding, driven by the misconception that it inevitably transmits HIV to the child.

"Some people think that if you're HIV-*positive, you should just use formula, even if exclusive breastfeeding can be safe"* (focused group discussion 7 participant 11).

However, some participants highlighted the importance of adherence to medical guidance:

"Health professionals usually recommend exclusive breastfeeding for HIV-*positive mothers, provided they are on antiretroviral treatment and have an undetectable viral load"* (focused group discussion 8 participant 19).

Resource limitations also challenge breastfeeding adherence:

"Food insecurity is a major challenge. Without enough to eat, it's hard to sustain breastfeeding" (interview participant 13).

Encouraging adherence to medical advice, addressing misinformation, and providing community support are vital to overcoming these barriers.

Theme 7: Psycho-social and emotional support needs

This theme explores crippling impacts of domestic abuse and lack of support from partners, as well as the life-changing potential of peer support groups, therapy, and compassionate medical professionals in offering much-needed emotional support-key insights summarized in Table 7.

A recurring barrier highlighted by participants was emotional distress caused by domestic violence and a lack of partner support. Several respondents reported that without the involvement and support of their partners, many mothers felt isolated and discouraged from continuing care. One healthcare worker remarked,

"Men are not involved, and some women face domestic violence, which discourages them from following up with care."

Peer support groups, mentor mothers, and counselling were key facilitators, helping HIV-positive mothers manage challenges and build emotional resilience. Peer groups offered safe spaces for sharing experiences: *"We encourage mothers to join support groups where they can share their experiences and encourage each other"* (interview participant 7). Mentor mothers, serving as role models, inspired adherence by demonstrating that positive living is achievable. Despite these efforts, stigma remains

a significant barrier. One participant highlighted, *"Stigma and discrimination in society are still big challenges"* (interview participant 13). Addressing these issues is crucial to improving engagement with and outcomes of the PMTCT service.

Table 7: Psycho-social and emotional support needs.

Subtheme	Description	Representative quotes
Impact of domestic violence and lack of partner support	Examines how domestic abuse and lack of partner involvement hinder adherence to PMTCT care and emotional stability.	2. "*Domestic violence at home discourages mothers from adhering to the care they are given."* (interview participant 6*)* 3. "*Some men are not supportive of these mothers to ensure that they adhere to the care they are given*." (interview participant 9)
Role of peer support groups	Highlights the importance of counseling, peer groups, and mentor mothers in providing emotional resilience and adherence support.	4. "*Continuous psychological support helps mothers cope with their diagnosis and adhere to treatment*." (interview participant 2*)* 6. "*Mentor mothers play a big role in showing new clients that living positively is manageable*." (interview participant 8*)*
Stigma and community support	Focuses on the adverse effects of societal stigma and the need for community-level interventions to normalize support for HIV.	7. "*Women who experience violence at home often face judgment in the community, which worsens their mental health and discourages them from seeking help*." (interview participant *6)* 8. "*Stigma and discrimination in society are still big challenges*." (interview participant 13*)* 9. "*Create community awareness to reduce discrimination and instead support the mothers*." (interview participant 5)

DISCUSSION

The study found several obstacles to accessing PMTCT services, including financial limitations, transportation barriers, cultural misconceptions, information gaps, stigma, and ineffective referral practices. Stigma is associated with social exclusion and delayed care in Nigeria, Ethiopia, and Eswatini.[7] Stigma was increased in Kenyan society since the PMTCT was linked to adultery.[20] In Zimbabwe and Uganda, poverty and high transportation costs made it impossible to receive consistent care. Incomplete referral systems and information gaps hampered.[29,30] Service acceptability is comparable to that of Swaziland and Kenya. Community education, male involvement, and quicker referrals have been suggested to improve care access.[9,22,31]

Male engagement became vital to adherence to PMTCT; supportive male partners provide shared responsibility and emotional support, thereby improving adherence. Ugandan studies found that male engagement increased antiretroviral therapy usage and reduced stigma.[32] Swaziland and Indonesian research found that feminine healthcare facilities discourage male engagement.[31-33] Similar gender biases were found in Kibera, Kenya.[34] Interventions should include marital counselling and clinic scheduling changes for men, documented successful Malawian community campaigns that demonstrate the potential of male-focused initiatives to improve PMTCT outcomes.[34,35]

Effective service delivery is key to the success of PMTCT. Consistent ARV refills, adherence counselling, and thorough health education were highlighted. In Guinea-Bissau and Kenya, integrated service delivery enhanced patient retention and adherence.[16] The study showed that phone reminders and peer-led interventions improved service continuity. Community health worker interventions in Ethiopia lowered PMTCT dropout rates.[35] Constant issues included excessive wait times and staff shortages. Similar systemic inefficiencies were found in South Africa, prompting capacity-building recommendations.[36]

Program efficacy depends on compliance with the PMTCT protocol. Economic challenges, transportation issues, and food insecurity were key impediments, and financial issues were found to affect adherence in Uganda and Mozambique greatly.[9,29] Local support mechanisms, including peer educators and mentor mothers, helped promote adherence. Studies in Tanzania and Malawi found that peer-led efforts provide emotional and informational support.[37] Indonesians report stigma and domestic abuse still prevent adherence. 38 An integrated approach with structural and psychosocial assistance is needed to overcome these problems.[6]

Participants noted that medical advice, cultural norms, and economic considerations affect newborn feeding. Cultural misconceptions about breastfeeding and HIV were major impediments, as in Guinea-Bissau and Eswatini.[6] Nutritional help is needed since food insecurity makes feeding habits harder to follow. Ethiopian and Kenyan studies related baby feeding issues to poverty.[20] Effective prenatal and postnatal counselling can reduce these difficulties, as shown in Malawi and Ethiopia.[2,8]

Sociocultural factors greatly impact the PMTCT. Cultural stigmas and gender inequality restrict service uptake, participants said. Tanzanian research indicated that moral

stigma around HIV causes social isolation.[37] Zimbabwe and Nigeria also hinder women's healthcare access due to patriarchal norms.[12,30] Challenges to such norms require the involvement of community and local leaders.[22]

Psychosocial support boosted adherence to PMTCT. Mentor mothers, peer support groups, and counselling help HIV-positive women build resilience. Studies of Malawi and Ethiopia found that emotional support boosts service engagement.[10] Domestic abuse and poor partner support remain major issues. These concerns require comprehensive psychological therapies, as shown in Eswatini and Indonesia.[6,39]

CONCLUSION

Major challenges identified include stigma, financial constraints, transportation issues, and cultural misconceptions, which hinder consistent adherence. For effective service delivery, male involvement, community engagement, and peer support were significant facilitators promoting the Prevention of Mother-to-Child Transmission uptake.

Recommendations

Strengthening PMTCT outcomes requires greater male and community engagement through peer support networks and targeted male involvement to reduce stigma and improve adherence at the household level. Improving resource accessibility is also critical, including stronger referral systems, consistent availability of essential services, and expanded health education to address financial and transportation barriers. Additionally, investing in longitudinal research is necessary to generate evidence on the long-term impact of these interventions and inform sustainable health policy development.

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