JOURNAL OF FERTILITY AND REPRODUCTIVE HEALTH
Jan-Mar 2025, VOL. 3, ISSUE 1, pp. 1-14
https://doi.org/10.61577/jfrh.2025.100001

RESEAPRO JOURNALS

ORIGINAL ARTICLE

OPEN ACCESS

The influence of HIV on reproductive health: A qualitative exploration in Mizoram

Priyanka Prusty
Department of Biotechnology, Utkal University, Odisha, India

ABSTRACT

Background: HIV significantly impacts fertility, pregnancy outcomes, and access to reproductive healthcare services. The prevalence of HIV in Mizoram (2.73%) is the highest in India, compared to the national average of 0.20%, increasing the burden on reproductive health systems. Despite the effectiveness of prevention of mother-to-child transmission (PMTCT) programs, misinformation, provider reluctance, and limited access to assisted reproductive technologies (ARTs) contribute to reproductive challenges. HIV-associated sperm abnormalities, hormonal imbalances, and increased risk of pregnancy complications further affect fertility outcomes. This study examines the barriers to reproductive healthcare, the role of stigma, and gaps in healthcare policies impacting fertility decisions among PLHIV in Mizoram.

Methods: A qualitative study was conducted using semi-structured interviews with 7 participants, including healthcare professionals and PLHIV facing fertility challenges. Participants were selected based on purposive sampling criteria. Thematic analysis was performed using NVivo software, coding transcripts to identify patterns in reproductive healthcare barriers, stigma, and policy gaps.

Results: Findings reveal that fear of vertical transmission, inconsistent reproductive counselling, and denial of ART-based fertility services are prevalent. Male infertility remains underdiagnosed, and women experiencing pregnancy complications frequently lack medical and psychosocial support. Stigma within healthcare settings contributes to delayed or concealed reproductive decisions.

Conclusions: Integrating fertility counselling into ART services, expanding ART-based reproductive technologies, and eliminating provider bias is critical. Strengthening policy frameworks for HIV-inclusive reproductive healthcare is essential for ensuring equitable, patient-centred fertility care in Mizoram.

KEYWORDS

HIV infections; Pregnancy complications; Reproductive techniques; Male infertility; Health policy

ARTICLE HISTORY

Received 06 January 2025;
Revised 27 January 2025;
Accepted 03 February 2025

Introduction

HIV/AIDS remains a major public health concern globally, with substantial implications for reproductive health. Despite advancements in antiretroviral therapy (ART) and prevention programs, individuals living with HIV continue to face challenges in fertility, pregnancy outcomes, and access to reproductive healthcare. ART has significantly reduced mother- to-child transmission (MTCT) and improved life expectancy, yet comprehensive reproductive health services for people living with HIV (PLHIV) remain inadequate in many settings [1] (Figure 1).

In India, HIV-related reproductive health concerns are particularly relevant in Mizoram, which has the highest HIV prevalence in the country, with an adult prevalence rate of 2.73%, compared to the national average of 0.20%. The epidemic in Mizoram is primarily driven by unsafe injection drug use and unprotected sexual practices, disproportionately affecting young adults and individuals of reproductive age [2]. Given the high disease burden, it is critical to examine the impact of HIV on reproductive health, including fertility decisions, pregnancy planning, and access to healthcare services. (Table 1) presents the HIV/AIDS epidemic in India in 2023 and (Table 2) presents the HIV/AIDS epidemic in Mizoram in 2023. The data is taken from India HIV Estimates 2023: Technical Report, Ministry of Health & Family Welfare, Government of India.

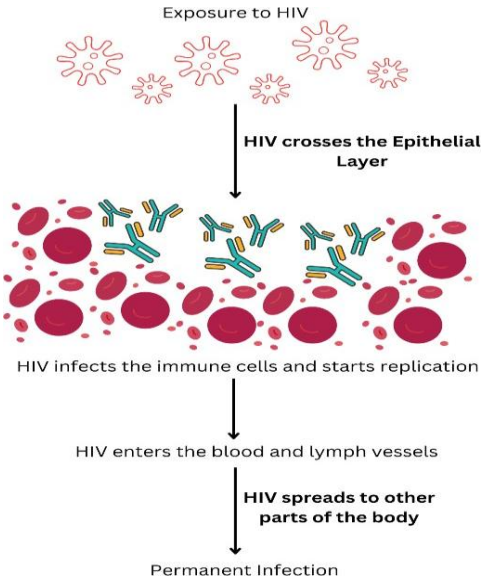


Figure 1. Schematic diagram representing HIV infection.

***Correspondence:** Ms. Priyanka Prusty, Department of Biotechnology, Utkal University, Odisha, India, e-mail: priyankaprusty110@gmail.com

Table 1. Survey of HIV/AIDS cases registered in India in 2023.

Indicator	Category	Value
Adult (15-49 years) HIV Prevalence (%)	Total	0.20 (0.17-0.25)
	Male	0.22 (0.18-0.27)
	Female	0.19 (0.16-0.23)
Number of People Living with HIV (in Lakh)	Total	25.44 (21.98-30.38)
	Women (15+ years)	11.22 (9.5-13.9)
	Children (<15 years)	2.61 (1.9-3.6)
	Young people (15-24)	1.63 (1.3-2.07)
HIV Incidence per 1,000 Uninfected Population	Total	0.04 (0.03-0.07)
	Male	0.05 (0.04-0.07)
	Female	0.03 (0.03-0.07)
Number of New HIV Infections (in Thousand)	Total	68.45 (45.87-108.07)
	Adults (15+ years)	66.11 (44.10-106.86)
	Women (15+ years)	27.04 (18.40-43.19)
	Children (<15 years)	2.35 (1.37-4.18)
	Young people (15-24)	16.19 (10.75-26.23)
Change in New HIV Infections since 2010 (%)	Total	-49.4
	Adults (15+ years)	-39.4
	Women (15+ years)	-41.04
	Children (<15 years)	-81.9
	Young people (15-24)	-46.99
AIDS-related Deaths per 1,00,000 Population	Total	2.61 (1.7-3.94)
	Male	3.39 (2.37-4.34)
	Female	1.78 (1.0-3.00)
Number of AIDS-Related Deaths (in Thousand)	Total	35.87 (24.32-54.40)
	Adults (15+ years)	34.68 (23.5-52.94)
	Women (15+ years)	11.32 (6.4-19.06)
	Children (<15 years)	3.88 (2.6-6.21)
	Young people (15-24)	0.90 (0.59-1.47)
Change in AIDS-Related Deaths since 2010 (%)	Total	-53.1
	Adults (15+ years)	-51.4
	Women (15+ years)	-58.4
	Children (<15 years)	-63.1
	Young people (15-24)	-47.3
Need of Services for EYT (in Thousand)	Total	19.96 (16.4-23.9)
Final MTCT Rate of HIV (%)	Total	11.75 (9.3-17.66)

https://doi.org/10.61577/jfrh.2025.100001

Table 2. Survey of HIV/AIDS cases registered in Mizoram in 2023.

Indicator	Disaggregation	Value
Adult (15-49 years) HIV Prevalence (%)	Total	2.73 (2.18-3.32)
	Male	3.04 (2.43-3.76)
	Female	2.41 (1.95-2.93)
Number of People Living with HIV	Total	25294 (20441-30197)
	Adult (15+ years)	24591 (19887-30425)
	Women (15+ years)	10757 (8766-13106)
	Children (<15 years)	703 (566-870)
	Young people (15-24)	2526 (1793-3560)
HIV Incidence per 1,000 Uninfected Population	Total	1.02 (0.79-1.30)
	Male	1.16 (0.78-1.67)
	Female	0.87 (0.58-1.22)
Number of Annual New HIV Infections	Total	1226 (840-1727)
	Adults (15+ years)	1200 (823-1683)
	Women (15+ years)	510 (336-703)
	Children (<15 years)	27 (19-48)
	Young people (15-24)	350 (228-485)
Change in Annual New HIV Infections since 2010 (%)	Total	-17.33
	Adults (15+ years)	-13.42
	Female (15+ years)	-12.8
	Children (<15 years)	-72.16
	Young people (15-24)	-15.66
AIDS-related Deaths per 1,00,000 Population	Total	10.81 (6.88-16.30)
	Male	9.42 (6.61-13.71)
	Female	12.22 (6.71-20.34)
Number of AIDS-related Deaths	Total	133 (83-194)
	Adults (15+ years)	101 (55-181)
	Women (15+ years)	59 (30-99)
	Children (<15 years)	32 (17-53)
	Young people (15-24)	6 (4-9)
Change in AIDS-related Deaths since 2010 (%)	Total	-77.2
	Adults (15+ years)	-81.23
	Female (15+ years)	-74.76
	Children (<15 years)	-45.76
	Young people (15-24)	-56
Need of Services for EVTH	Total	292 (235-317)
Final MTCT Rate of HIV (%)	Total	9.13 (7.12-12.95)

https://doi.org/10.61577/jfrh.2025.100001

The relationship between HIV and reproductive health is multifaceted. HIV infection can lead to reduced fertility due to immunological and hormonal alterations, increased risk of adverse pregnancy outcomes, and challenges in accessing fertility-related services. Studies indicate that HIV-positive women experience higher rates of miscarriage, preterm labour, and maternal morbidity compared to their HIV-negative counterparts [3]. Despite ART improving overall health, concerns regarding vertical transmission and social stigma continue to limit reproductive autonomy among PLHIV. In Mizoram, where 42% of PLHIV are women, many face discrimination in healthcare settings, discouraging them from seeking reproductive care. The stigma surrounding HIV and pregnancy is exacerbated by misconceptions about transmission risks and limited access to reproductive counselling. Although Prevention of Mother-to-Child Transmission (PMTCT) programs are available, challenges persist in ensuring consistent adherence to ART and antenatal care, leading to an MTCT rate of 9.13% in Mizoram [4].

While ART has improved reproductive outcomes by lowering viral load and transmission risks, it does not inherently enhance fertility. Many HIV-positive individuals in Mizoram remain uncertain about conception safety, pregnancy risks, and available reproductive options, largely due to insufficient fertility counselling within ART clinics. Current healthcare services in Mizoram focus primarily on HIV treatment and viral suppression, with minimal integration of reproductive health support [5]. Reports indicate that ART clinics do not consistently provide fertility counselling or assisted reproductive services, leaving many individuals without the necessary guidance to make informed reproductive choices. Additionally, healthcare providers often lack specialized training in managing fertility concerns in PLHIV, leading to misinformation and inconsistent care [6].

Sociocultural factors further complicate reproductive decision-making among HIV-positive individuals in Mizoram. Traditional societal norms and expectations regarding childbearing influence fertility choices, with many individuals facing pressure to either forgo parenthood or conceal their reproductive intentions. Women with HIV often experience discrimination within their communities and families, limiting their ability to make independent reproductive decisions [2,7]. Male partners play a critical role in reproductive health, yet their involvement in fertility-related discussions and HIV care remains limited. Studies indicate that low male engagement in PMTCT programs correlates with poorer maternal ART adherence and higher vertical transmission risks. Addressing these sociocultural barriers requires targeted interventions that promote male partner involvement, reduce stigma, and ensure equitable reproductive healthcare access [8].

Although epidemiological data provide valuable insights into HIV prevalence and healthcare utilization, they do not adequately capture the lived experiences and challenges faced by PLHIV in their reproductive health journeys. A qualitative research approach is necessary to understand the barriers to reproductive healthcare, decision-making processes, and interactions with the healthcare system. This study aims to document the reproductive health experiences of PLHIV in Mizoram, highlighting how stigma, healthcare access, and cultural norms shape their fertility choices. By focusing on personal narratives and healthcare experiences, this research will generate evidence-based insights to inform policy recommendations and healthcare interventions that improve reproductive health outcomes for PLHIV.

The primary objective of this study is to examine the impact of HIV on fertility choices, pregnancy outcomes, and reproductive aspirations among PLHIV in Mizoram. Additionally, this research seeks to evaluate the effectiveness of ART and PMTCT programs in shaping reproductive health decisions while identifying barriers to fertility-related healthcare access. Through in-depth interviews and focus group discussions, the study will explore stigma, discrimination, and healthcare provider attitudes regarding reproductive health among HIV-positive individuals. By integrating qualitative data with epidemiological findings, the study will provide a comprehensive understanding of the challenges faced by PLHIV in reproductive healthcare.

Literature Review

HIV and reproductive health

HIV infection influences reproductive health through immunological, hormonal, and socio-behavioural factors, contributing to altered fertility, increased pregnancy complications, and barriers to reproductive healthcare. Research indicates that HIV-positive women experience higher rates of spontaneous abortions, preterm births, and low birth weight infants, largely due to chronic immune activation, systemic inflammation, and opportunistic infections. Although antiretroviral therapy (ART) has significantly improved maternal health outcomes, its effects on fertility remain complex, as ART can modulate hormonal pathways while reducing systemic HIV-related morbidity [9].

Globally, integrated PMTCT programs have reduced vertical HIV transmission to <2% in well-resourced settings, but in India, regional disparities in PMTCT coverage result in continued transmission risks. While ART adherence plays a key role in preventing mother-to-child transmission, limited access to reproductive health counselling and stigma within healthcare settings continue to deter HIV-positive individuals from seeking fertility services [2,10] (Figure 2).

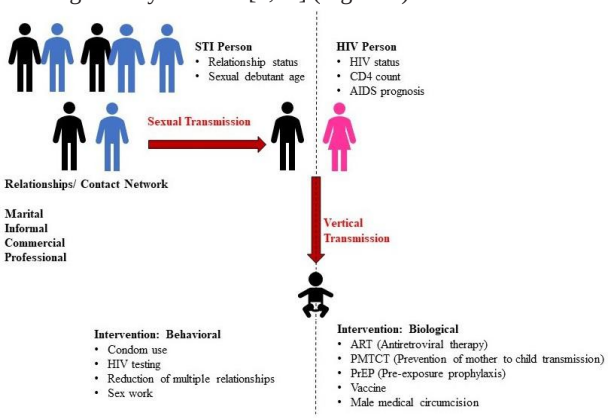


Figure 2. Network diagram representing HIV model and its reproductive components.

https://doi.org/10.61577/jfrh.2025.100001

HIV prevalence and the health system in Mizoram

With an HIV prevalence of 2.73%, Mizoram faces significant reproductive health challenges for people living with HIV (PLHIV). The absence of structured fertility counselling and inconsistent integration of reproductive health services within ART programs limits access to safe conception strategies, pregnancy planning, and assisted reproductive technologies (ARTs) [2] (Figure 3).

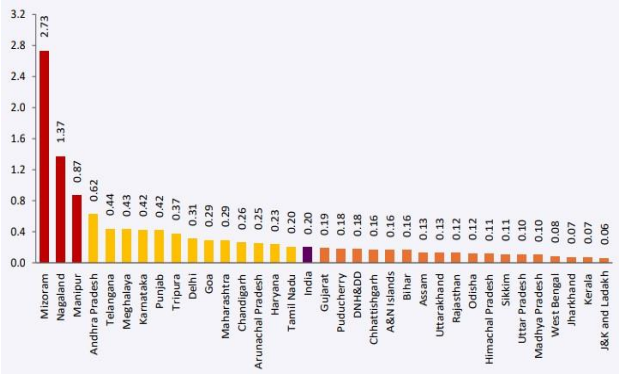


Figure 3. State wide Adult HIV Prevalence (%) in India, 2023. (HIV Estimates 2023: Technical Report, Ministry of Health & Family Welfare, Government of India.)

Despite increasing ART coverage and improved PMTCT services, healthcare access remains fragmented, particularly in rural areas. While ART retention among pregnant women at delivery has reached 94-97% nationally, retention rates in resource-limited settings like Mizoram remain inconsistent. The lack of reproductive health specialists within HIV care programs further contributes to misconceptions regarding transmission risks during pregnancy and fertility concerns among PLHIV [2,4,11].

Additionally, assisted reproductive technologies (ARTs) remain largely inaccessible in Mizoram, requiring PLHIV seeking fertility assistance to travel to metropolitan cities. This financial and logistical burden disproportionately affects women in low-income settings, further restricting reproductive choices [2,4].

Stigma and social factors

Stigma in reproductive healthcare for PLHIV in Mizoram exists at multiple levels within families, communities, and healthcare systems. Many HIV-positive women face discrimination from healthcare providers when seeking fertility support, contributing to psychosocial distress and reluctance to pursue reproductive health services [2,4].

Cultural norms further shape reproductive expectations, where HIV-positive women experience pressure from families to either conceive despite health risks or avoid pregnancy altogether due to misconceptions about vertical transmission. Male partner involvement in reproductive health remains limited, reducing shared decision-making and increasing the psychological burden on HIV-positive women. Studies in other Indian states indicate that male engagement in PMTCT programs enhances maternal ART adherence and reduces perinatal HIV transmission. However, Mizoram lacks structured initiatives promoting male participation in fertility-related discussions, exacerbating gender disparities in reproductive decision-making. Addressing these barriers requires integrating male-focused interventions into reproductive healthcare services for PLHIV [2,4,12].

Gaps in the literature

Despite ongoing research, there remains a significant lack of qualitative data on reproductive aspirations and fertility choices among PLHIV in Mizoram. Most studies focus on HIV epidemiology, ART adherence, and maternal health outcomes, with insufficient attention to personal decision-making, psychosocial barriers, and access to reproductive healthcare [2,4].

Key areas requiring further research include:

1. Fertility intentions and decision-making processes among HIV-positive individuals in Mizoram.
2. Effectiveness of PMTCT programs in rural healthcare settings.
3. Barriers to accessing assisted reproductive technologies (ARTs) for PLHIV.
4. Impact of stigma on reproductive healthcare utilization.
5. Role of male partners in HIV reproductive health decision-making.

The absence of qualitative patient-centred research limits the ability to develop evidence-based interventions that align with the specific reproductive needs of PLHIV in Mizoram. Future studies should focus on understanding patient perspectives and improving healthcare accessibility to develop comprehensive reproductive health models that integrate HIV and fertility care.

Methodology

This study adopts a qualitative research design to explore the impact of HIV on reproductive health in Mizoram. Given the complexity of reproductive decision-making and healthcare experiences among people living with HIV (PLHIV), a qualitative approach is most appropriate to capture their lived experiences, perceptions, and barriers to reproductive healthcare. The study will utilize semi-structured in-depth interviews with healthcare professionals and individuals diagnosed with HIV experiencing fertility issues to gain insights into the challenges, stigmas, and gaps in reproductive health services.

Study design

Qualitative research is chosen to allow flexibility in capturing diverse experiences. Two independent interview groups are formed to obtain multi-perspective insights:

- Interview 1: Participants with expertise in reproductive and sexual health management.
- Interview 2: Participants diagnosed with HIV or related sexually transmitted infections (STIs), experiencing fertility concerns.

This dual-interview framework ensures a balanced analysis of medical perspectives and patient experiences, helping to identify healthcare gaps and potential intervention strategies.

https://doi.org/10.61577/jfrh.2025.100001

Inclusion and exclusion criteria

Interview 1: Health workers

Inclusion criteria:

- Professionals with at least three years of experience in HIV care, reproductive health, or sexual health counselling.
- Actively working in hospitals, ART clinics, or community reproductive health programs in Mizoram.
- Willing to participate in a one-on-one, semi-structured interview lasting approximately 45-60 minutes.

Exclusion criteria:

- Individuals without direct patient interaction in HIV reproductive health management.
- Professionals who have no prior experience in handling fertility-related concerns in PLHIV.

Interview 2: Individuals diagnosed with STIs and experiencing fertility issues

Inclusion criteria:

- Adults aged 18-45 years diagnosed with HIV or other STIs affecting reproductive health.
- Individuals who have sought reproductive healthcare services.
- Willing to participate in a confidential, one-on-one interview lasting 45-60 minutes.
- Able to provide informed consent, ensuring voluntary participation.

Exclusion criteria:

- Individuals with co-existing severe medical conditions that may impact reproductive health beyond HIV-related concerns.
- Participants unwilling to discuss fertility-related experiences due to privacy concerns.
- Individuals unable to provide informed consent due to cognitive impairment or language barriers.

Data collection methods

Two separate sets of semi-structured interviews will be conducted to obtain detailed insights from both healthcare professionals and individuals affected by HIV-related fertility concerns.

Interview 1:

1. These interviews will focus on professional experiences, barriers in reproductive healthcare for PLHIV, and gaps in fertility management.
2. Questions will address clinical challenges, stigma, patient counselling strategies, and limitations in available reproductive technologies for HIV-positive individuals.
3. Interviews will be conducted in hospitals, ART clinics, or professional office settings and audio-recorded with consent.

Interview 2:

1. These interviews will capture personal experiences regarding fertility challenges, access to reproductive healthcare, stigma, and psychological impacts.
2. Questions will focus on barriers to seeking fertility treatment, fears of HIV transmission, male infertility concerns, pregnancy complications, and societal pressures.
3. Interviews will be conducted in a confidential setting, such as community centers, ART clinics, or private meeting spaces, ensuring privacy and emotional comfort for participants.

Data analysis

A thematic analysis approach will be applied to analyse qualitative data systematically. The following steps will be followed:

1. **Transcription and Translation:** All interviews will be audio-recorded with consent and transcribed verbatim. Non-English interviews will be translated into English for uniformity.

2. **Coding Process:**
   - Initial coding: Identifying key themes related to healthcare challenges, stigma, reproductive choices, and patient-provider interactions.
   - Axial coding: Establishing connections between themes, such as stigma-related healthcare avoidance, barriers in ART clinics, and gender-based reproductive concerns.

3. **Theme Identification:** Common patterns and recurring experiences will be categorized under key themes such as fertility concerns, healthcare stigma, accessibility barriers, and coping mechanisms.

4. **Triangulation:** Data from healthcare professionals and affected individuals will be cross-examined to identify converging and diverging perspectives.

NVivo software will be used for qualitative data management and coding, ensuring systematic analysis and reliability.

Ethical considerations

Ethical approval will be obtained from the Institutional Ethics Review Board before participant recruitment. Key ethical considerations include:

Informed Consent:

- Participants will receive detailed information about the study objectives, interview process, and confidentiality protocols.
- Written informed consent will be obtained from all participants before data collection.

Confidentiality:

- Participants will be assigned unique identification codes instead of real names.
- Interview recordings, transcripts, and notes will be securely stored in encrypted digital files, accessible only to authorized researchers.

Psychological safety:

- Participants discussing sensitive topics like infertility, societal stigma, and discrimination will have access to mental health support and counselling services if required.
- The research team will ensure a non-judgmental, supportive environment during interviews.

Right to Withdraw:

- Participants may withdraw at any stage without justification.

https://doi.org/10.61577/jfrh.2025.100001

- Any collected data will be immediately destroyed upon request.

Interview and results

We describe the key findings and themes based on the qualitative interviews on HIV infections and its adverse effects on the reproductive health on the individuals in Mizoram. This involved collecting qualitative data through interviews and questionnaires before conducting content analysis to identify and interpret themes. Table 3 and 4 summarizes the questions asked, the themes identified, the responses from participants, and the key findings and themes derived from the content analysis.

Table 3. Qualitative interview and analysis of healthcare individuals.

S/N.	THEME	QUESTION	PARTICIPANT RESPONSE	RESPONSE ANALYSIS
1	Impact of HIV on Female Fertility and Pregnancy Outcomes	How does HIV infection affect female fertility and pregnancy outcomes?	Participant 1: "HIV disrupts menstrual cycles, causes infertility, and increases pregnancy complications." Participant 2: "Male infertility due to HIV can contribute to conception difficulties and pregnancy risks." Participant 3: "Couples fear transmission and experience anxiety, which affects reproductive choices."	HIV significantly impacts fertility through hormonal imbalances, immune suppression, and psychosocial factors. While medical complications such as menstrual irregularities and poor sperm quality are major contributors, stigma and misinformation further discourage pregnancy planning. Healthcare providers must integrate fertility assessments within ART clinics to address these concerns.
2	Gaps in Maternal Healthcare for HIV-Positive Women	What are the challenges in providing reproductive healthcare to HIV-positive women?	Participant 1: "There is a shortage of specialists managing high-risk HIV pregnancies." Participant 2: "HIV care and reproductive health services are poorly coordinated." Participant 3: "Women avoid prenatal care due to fear of discrimination."	Limited healthcare infrastructure, poor integration of reproductive health in ART clinics, and stigma within healthcare settings restrict maternal care access for HIV-positive women. Many avoid seeking early prenatal care, leading to higher pregnancy risks. Expanding HIV-specific maternal health programs is essential.
3	HIV and Male Infertility: Reduced Sperm Quality and Hormonal Effects	What are the most common reproductive issues faced by HIV-positive men?	Participant 1: "Male infertility is underdiagnosed and overlooked in HIV care." Participant 2: "ART and chronic HIV infection cause hormonal disturbances and sperm dysfunction." Participant 3: "Men avoid fertility counselling, believing they cannot father children."	Male infertility in HIV is underreported and rarely addressed, despite clear evidence linking HIV and ART to reduced sperm quality. Misinformation, reluctance to discuss reproductive health, and lack of male-focused counselling contribute to poor fertility outcomes. Awareness campaigns are needed to encourage fertility screening for HIV-positive men.
4	Barriers in Fertility Treatment for HIV-Positive Men	What challenges do HIV-positive men face when seeking fertility treatment?	Participant 1: "Many fertility centres refuse to treat HIV-positive men." Participant 2: "Men do not prioritize fertility; they rely on female partners to seek care." Participant 3: "There are no structured male fertility counselling programs for HIV-positive men."	The medical community's reluctance to provide fertility treatment for HIV-positive men and men's lack of engagement in reproductive health create significant barriers. The absence of specialized reproductive services for HIV-positive men further limits access. Strategies to integrate fertility support within HIV care are required.
5	Psychosocial Barriers in Fertility Decision-Making for HIV-Positive Individuals	What emotional and psychological challenges do HIV-positive individuals face when making reproductive decisions?	Participant 1: "Women fear transmission risks and pregnancy complications." Participant 2: "Men feel guilty about their HIV status and hesitate to plan for children." Participant 3: "Lack of emotional support adds stress to reproductive decisions."	The psychosocial impact of HIV on reproductive decision-making is profound, with fear, guilt, and stigma influencing choices. Many avoid conception due to anxiety over transmission risks or pressure from societal expectations. Counselling and mental health support should be incorporated into HIV reproductive health programs.
6	Need for Comprehensive Reproductive Counselling in HIV Care	Do current ART clinics provide adequate reproductive health counselling for PLHIV?	Participant 1: "ART clinics lack structured fertility counselling." Participant 2: "Male patients receive little information on fertility." Participant 3: "PLHIV are unaware of safe conception options."	HIV reproductive counselling is inadequate, with ART clinics focusing solely on infection management. Men are particularly neglected in fertility discussions, while women receive minimal guidance on conception safety. Structured reproductive health counselling within HIV care is necessary.

https://doi.org/10.61577/jfrh.2025.100001

7	Stigma-Driven Delays in Seeking Reproductive Healthcare	How does stigma impact healthcare-seeking behaviour among HIV-positive individuals?	Participant 1: "Women delay prenatal visits due to fear of judgment." Participant 2: "Patients seek fertility care in distant clinics to avoid being recognized." Participant 3: "Stigma prevents open discussions about reproductive health."	HIV-related stigma discourages individuals from accessing fertility care, delaying prenatal visits and ART adherence during pregnancy. Many prefer private clinics over public healthcare facilities, increasing financial burdens and disrupting continuity of care. Anti-stigma policies should be implemented in reproductive health settings.
8	Limited Availability of Assisted Reproductive Technologies (ARTs) for PLHIV	Are fertility treatments accessible for HIV-positive individuals in Mizoram?	Participant 1: "HIV-positive couples must travel to other states for ART procedures." Participant 2: "Healthcare providers rarely discuss assisted reproduction options." Participant 3: "Many HIV-positive individuals assume they cannot conceive safely."	Lack of assisted reproductive services in Mizoram and poor awareness among both patients and providers limit fertility options for PLHIV. More training for healthcare professionals and local ART services are needed.
9	Partner and Family Influence on Reproductive Decisions	How do families and partners influence fertility decisions among PLHIV?	Participant 1: "In-laws influence whether women should conceive." Participant 2: "Men refuse to have children due to HIV-related fears." Participant 3: "Social expectations shape reproductive decisions."	Family and partner influence significantly impact fertility choices, often limiting women's autonomy. Men's reluctance to have children and societal pressure on women create psychological stress. Programs promoting shared decision-making and gender-equitable reproductive counselling should be developed.

HIV significantly affects fertility and pregnancy outcomes. Disruptions in menstrual cycles, anovulation, and hormonal imbalances contribute to female infertility, while HIV and antiretroviral therapy (ART) reduce sperm count, motility, and morphology in men. Psychosocial stress and fear of transmission further discourage reproductive planning. Integrating fertility assessments within HIV care can improve management. HIV-positive women face inadequate maternal healthcare due to poor coordination between HIV and reproductive health services. Stigma prevents early prenatal care, increasing pregnancy risks. Establishing HIV-specific maternal care programs within ART clinics is essential.

Male reproductive health is under-addressed in HIV care. ART-induced hormonal imbalances and chronic infection impair spermatogenesis, yet male fertility screening is rare. Many men avoid discussions on fertility due to misconceptions about reproductive potential. Additionally, fertility clinics frequently deny treatment to HIV-positive men. Integrating fertility support into HIV care and improving male-focused reproductive counselling are critical. Stigma delays prenatal care and limits discussions on reproductive health. Women face pressure from families and partners regarding childbearing, while men experience guilt and fear of transmission. Targeted counselling and anti-stigma policies are needed to support informed reproductive choices (Table 3).

In Mizoram, assisted reproductive services are scarce, requiring PLHIV to seek treatment in other states. Healthcare providers rarely discuss fertility options, and misinformation prevents safe conception planning. Expanding local ART services and provider training is necessary.

Table 4. Qualitative interview and analysis of infected individuals.

S/N.	THEME	QUESTION	PARTICIPANT	RESPONSE	RESPONSE ANALYSIS
1	Fear and Uncertainty About Parenthood Among HIV-Positive Individuals	How do you feel about planning a pregnancy while living with HIV?	Participant A	"I worry about passing HIV to my baby, even though I know ART reduces the risk."	Despite medical advancements, fear of vertical transmission remains a major concern among PLHIV. Misinformation and lack of reproductive counselling contribute to uncertainty. Psychological distress further complicates reproductive decision-making.
			Participant B	"My partner and I hesitate because we don't know anyone with HIV whohas had a healthy child."	
			Participant C	"I fear pregnancy could make my wife's health worse."	
			Participant D	"I lost a pregnancy before, and I am terrified to try again."	

https://doi.org/10.61577/jfrh.2025.100001

2	Barriers in Accessing Reproductive Healthcare for HIV-Positive Individuals	What challenges have you faced when trying to access reproductive healthcare?	Participant A	"Doctors treat me differently when they find out I have HIV. I feel judged."	HIV-related stigma in healthcare settings discourages individuals from seeking reproductive services. Many are refused treatment or not given adequate information, pushing them toward private or distant clinics, increasing financial and emotional burden.
			Participant B	"We were told to find another clinic because they didn't want to treat us."	
			Participant C	"Doctors don't discuss fertility with HIV-positive men. I had to find information online."	
			Participant D	"I was denied emergency care because of my HIV status."	
3	Impact of HIV Diagnosis on Sexual and Emotional Relationships	How has your HIV status affected your relationship and intimacy?	Participant A	"I feel guilty, like I'm bringing danger into my relationship."	HIV deeply impacts self-esteem and intimacy. Fear of transmission, infertility, and emotional distress create distance between partners. Many individuals experience guilt, avoidance of intimacy, or reduced sexual confidence.
			Participant B	"Our sex life has changed completely. It's more stressful than enjoyable now."	
			Participant C	"I avoid talking about fertility issues. I don't want to feel like less of a man."	
			Participant D	"After my pregnancy loss, I distanced myself from my partner."	
4	Social and Family Pressure in Reproductive Decision-Making	How does your family influence your decision to have children?	Participant A	"My parents want me to have a child, but they don't understand the risks."	Family expectations add pressure on PLHIV to conceive, while societal stigma discourages them from doing so. Many individuals feel caught between cultural norms and medical realities, leading to stress and confusion.
			Participant B	"My in-laws think we should not have children because of my HIV status."	
			Participant C	"I feel ashamed to tell my family I can't have kids."	
			Participant D	"My family sees my pregnancy loss as a sign that I shouldn't try again."	
5	Emotional and Psychological Burden of HIV on Couples Planning Pregnancy	How has HIV affected your emotional health while trying to conceive?	Participant A	"I constantly question if I shouldbe trying to have a baby at all."	HIV-related fertility concerns cause significant emotional distress. Anxiety, guilt, and fear prevent many from pursuing parenthood, even when medical options exist.
			Participant B	"We are overwhelmed. We want to be parents, but we are scared."	
			Participant C	"I feel like I'm failing my wife. First HIV, now infertility."	
			Participant D	"Losing a pregnancy has drained me emotionally. I don't know if I can go through it again."	
6	Trust and Communication Issues in HIV-Affected Relationships	How has HIV affected trust and communication in your relationship?	Participant A	"My partner worries I could infect them, even though I'm on ART."	Misinformation about transmission risks leads to trust issues. Many avoid discussing their concerns, leading to emotional distance between partners.
			Participant B	"We argue more because of the stress of trying to conceive safely."	
			Participant C	"I avoid talking about infertility. It makes me feel weak."	
			Participant D	"After my ectopic pregnancy, I couldn't talk about it with my partner. It hurt too much."	
7	Barriers to Fertility Treatment for HIV-Positive Individuals	What challenges have you faced when trying to access fertility treatments?	Participant A	"Clinics don't take HIV-positive patients for fertility treatments."	PLHIV face rejection from fertility clinics, lack of information, and stigma. Many must travel to find non-discriminatory care.
			Participant B	"We had to go to another city for IVF. It was expensive."	
			Participant C	"Doctors didn't explain my options, they just said I can't have kids."	
			Participant D	"I was discouraged from trying again after my pregnancy loss."	

https://doi.org/10.61577/jfrh.2025.100001

8	Male Infertility and Emotional Well-Being Among HIV-Positive Men	How has infertility affected your mental health?	Participant A Participant B Participant C Participant D	"It's devastating. I feel broken." "My husband won't talk about it, but I see him struggling." "I feel like less of a man." "I don't know how to support my partner through this."	HIV-related male infertility is stigmatized, leading to depression, low self-worth, and silence on the issue.
9	Experiences of Medical Neglect and Delayed Care in HIV-Positive Women	Have you experienced medical neglect due to HIV?	Participant A Participant B Participant C Participant D	"I was made to wait longer for treatment." "They prioritized other patients over us." "I wasn't offered the same fertility treatments as HIV-negative men." "I had an emergency and was told to go to another hospital."	HIV-positive women face delays, discrimination, and refusal of care in emergency medical situations.
10	Partner and Family Responses to Pregnancy Loss in HIV-Positive Women	How did your family and partner react to pregnancy loss?	Participant A Participant B Participant C Participant D	"People think I lost my baby because of HIV." "We were heartbroken, but people asked if we should have even tried." "I blamed myself." "My in-laws see this as a sign I shouldn't have children."	Pregnancy loss is heavily stigmatized in HIV-positive women, with blame and discouragement from trying again.
11	Challenges in Safe Conception and Pregnancy for Serodiscordant Couples	What challenges do you face as an HIV-positive couple trying to conceive?	Participant A Participant B Participant C Participant D	"Doctors give us different advice. It's confusing to know what's actually safe." "We don't know whether it's safer to conceive naturally or use fertility treatments." "I want to try sperm washing, but it's not available where I live." "After my ectopic pregnancy, I'm afraid of complications. I need clearer medical support."	Serodiscordant couples face inconsistent medical guidance on conception safety, limited access to assisted reproductive services, and heightened anxiety over transmission risks.
12	Experiences of Reproductive Stigma and Discrimination in Society	How does society treat you regarding your reproductive choices?	Participant A Participant B Participant C Participant D	"People think HIV-positive individuals shouldn't have kids. They judge us just for considering it." "We don't tell anyone about our plans to have a baby. We don't want judgment." "I was called selfish for wanting kids despite my condition." "People assume my pregnancy loss happened because of HIV, which isn't true."	Public stigma discourages PLHIV from parenthood, forcing many to keep their reproductive plans a secret to avoid discrimination. Misinformation fuels negative societal attitudes.
13	Male Infertility and Emotional Well-Being Among HIV-Positive Men	How has infertility affected your mental health?	Participant A Participant B Participant C Participant D	"It's one thing to have HIV, but now to also be infertile? I feel broken." "My husband doesn't talk about it, but I can see it's affecting him deeply." "I feel like less of a man. It's hard to deal with." "I want to help my partner, but I don't know how."	HIV-positive men with infertility experience severe psychological distress, including feelings of inadequacy, shame, and self-blame. Many avoid discussing their fertility struggles, worsening emotional isolation.
14	Emotional Trauma and Psychological Recovery After Ectopic Pregnancy in HIV-Positive Women	How did your ectopic pregnancy affect your emotional well-being?	Participant A Participant B Participant C Participant D	"It was heartbreaking. I felt like I lost my chance at motherhood." "No one prepared me for how much it would affect me emotionally." "I don't know if I'll ever be able to try again. The fear is too much." "I felt like people around me didn't understand my pain."	Pregnancy loss in HIV-positive women leads to significant emotional trauma, often resulting in hesitation to conceive again. Many feel unsupported by their families and partners, exacerbating psychological distress.

https://doi.org/10.61577/jfrh.2025.100001

15	Challenges in Future Pregnancy Planning After Ectopic Pregnancy in HIV	What concerns do you have about planning another pregnancy?	Participant A Participant B Participant C Participant D	"I am terrified that it will happen again. I don't know if my body can handle it." "I want to try again, but I need proper medical care and assurance." "My partner is hesitant. He doesn't want me to go through that pain again." "Doctors have told me not to try again, but I want to."	HIV-positive women with a history of ectopic pregnancy experience intense fear and uncertainty about future pregnancies, due to lack of medical reassurance and emotional support.
16	Experiences of Medical Neglect and Delayed Care in HIV-Positive Women With Pregnancy Complications	Have you experienced medical neglect or delays in care due to your HIV status?	Participant A Participant B Participant C Participant D	"Yes, I was told I had to wait longer for treatment because my case was 'complicated'." "We were made to wait while other patients were treated first. It felt like we didn't matter." "I wasn't given the same treatment options as HIV-negative men." "I had an emergency, but the hospital refused to admit me right away. I had to go somewhere else."	HIV-positive women with pregnancy complications often face discrimination in medical settings, including delays in emergency care and refusal of treatment. This increases health risks for both the mother and child.
17	Barriers to Fertility Treatment for HIV-Positive Individuals	What challenges have you faced when trying to access fertility treatments?	Participant A Participant B Participant C Participant D	"I was told that HIV-positive people don't qualify for fertility treatments here." "We had to travel to another city for IVF because no clinic here would take us." "The doctor told me there's nothing they can do because I have HIV. No one even explained my options." "I was told that since I already lost one pregnancy, I shouldn't even try again."	HIV-positive individuals face discrimination in fertility clinics, often being denied assisted reproductive services. The limited availability of ART procedures for PLHIV forces many to travel for care, increasing financial and emotional strain.
18	Partner and Family Responses to Pregnancy Loss in HIV-Positive Women	How did your family and partner react to pregnancy loss?	Participant A Participant B Participant C Participant D	"People assume I lost my baby because of HIV, and that hurts." "We were heartbroken, but people kept asking if we should have even tried in the first place." "I blamed myself because of my fertility issues. Maybe we were never supposed to have kids." "My husband supported me, but I could feel that my in-laws saw it as a 'sign' that I shouldn't have kids."	HIV-related pregnancy loss is often misunderstood, leading to social blame, discouragement from future conception, and emotional distress. Many women lack emotional support from family and partners.

The findings highlight significant medical, psychological, and social barriers affecting reproductive health in people living with HIV (PLHIV). Despite advancements in the prevention of mother-to-child transmission (PMTCT) programs and antiretroviral therapy (ART), concerns regarding vertical transmission persist, primarily due to misinformation, limited reproductive counselling, and inconsistent guidance from healthcare providers.

Access to reproductive healthcare remains inadequate, with healthcare discrimination, denial of services, and the absence of fertility counselling being frequently reported. Many individuals experienced delays in obstetric and emergency care due to provider reluctance, and assisted reproductive technologies (ARTs) were largely inaccessible due to financial constraints and institutional policies restricting fertility treatment for PLHIV. Male infertility, particularly reduced sperm count due to chronic HIV infection and ART-related hormonal imbalances, was largely overlooked in HIV care, with minimal diagnostic evaluation or intervention offered.

Psychosocial distress was prominent, with fear of pregnancy complications, infertility-related stigma, and emotional burden from reproductive loss being key concerns. Many men avoided discussing fertility issues due to stigma, while women experiencing pregnancy loss reported psychological distress exacerbated by societal blame and discouragement from future conception. Sero discordant

https://doi.org/10.61577/jfrh.2025.100001

couples lacked structured reproductive counselling, leading to heightened anxiety regarding transmission risks and confusion about safe conception options.

Family and societal pressures significantly influenced reproductive decisions, with individuals facing conflicting expectations between the pressure to conceive versus discouragement due to stigma. These findings underscore the urgent need for integrated reproductive counselling within HIV care, training of healthcare providers to eliminate discrimination, and expansion of fertility treatment access for PLHIV to ensure equitable reproductive healthcare and improved pregnancy outcomes (Table 4).

Discussion

Reproductive aspirations among people living with HIV (PLHIV) are influenced by multiple factors, with fear of vertical transmission being a primary concern. Despite the effectiveness of prevention of mother-to-child transmission (PMTCT) programs, many individuals remain hesitant about a pregnancy due to misinformation, inconsistent medical guidance, and limited access to reproductive counselling [13]. Participants reported conflicting advice from healthcare providers, leading to anxiety and uncertainty in family planning. Studies show that while ART reduces vertical transmission risks to less than 2%, gaps in patient education and lack of fertility-focused counselling hinder informed decision-making.

HIV diagnosis significantly alters fertility intentions, with concerns about disease progression, partner health, ART side effects, and life expectancy leading to delayed or reconsidered parenthood. The study data also revealed that serodiscordant couples lacked awareness of safe conception strategies, such as timed unprotected intercourse, sperm washing, or pre-exposure prophylaxis (PrEP) for negative partners. Poor integration of reproductive services within ART programs limits the reproductive autonomy of PLHIV [14].

Barriers to maternal and reproductive healthcare for PLHIV remain substantial, with stigma, provider bias, and systemic healthcare gaps playing a crucial role. The study findings highlight that many HIV-positive individuals face discrimination in healthcare settings, leading to delayed obstetric care, limited access to ART-related reproductive counselling, and frequent denial of assisted reproductive technologies (ARTs). Participants reported that some providers actively discouraged them from pursuing pregnancy, citing medical risks without offering alternative reproductive options or counselling [15].

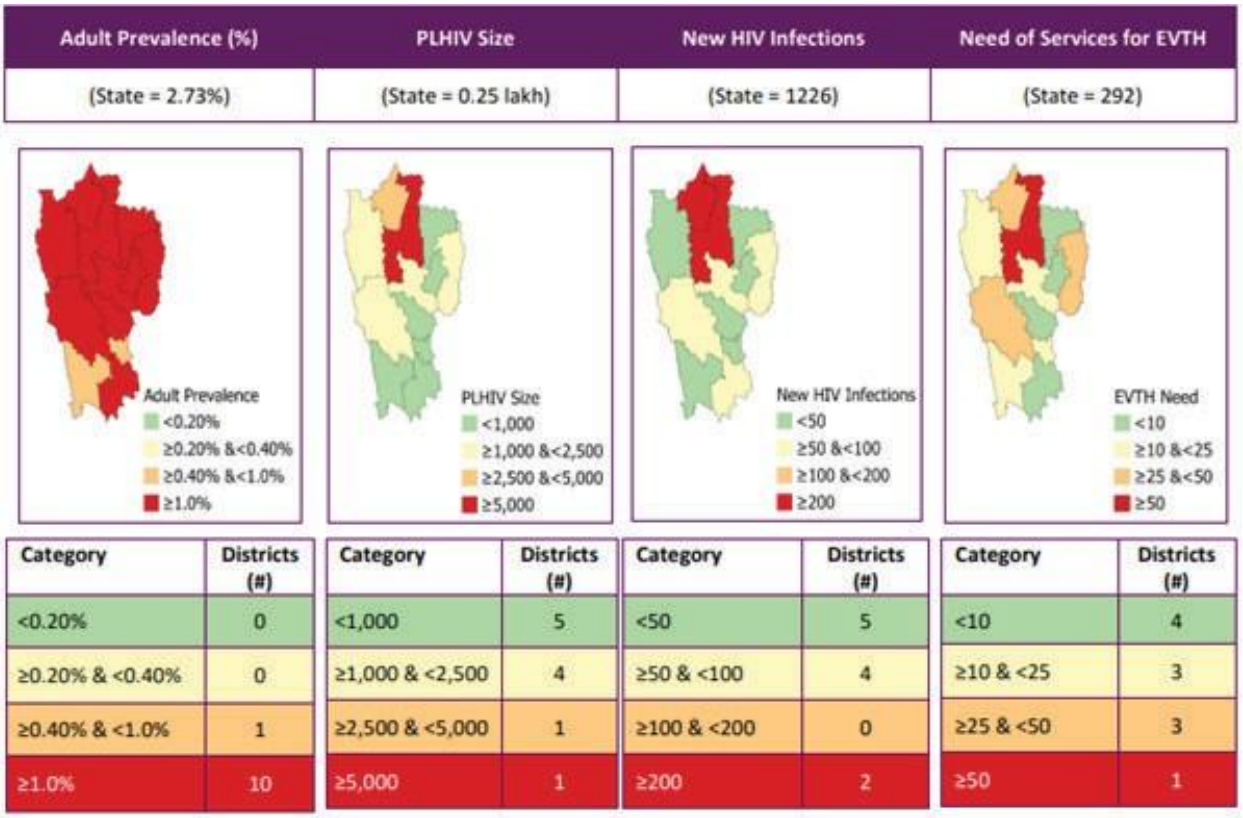
Women with ectopic pregnancies or pregnancy loss were often advised against future conception without a thorough medical assessment. Male infertility concerns were frequently overlooked, with minimal reproductive support available for HIV-positive men. National data confirms that while ART coverage has expanded, reproductive health counselling remains poorly integrated. Studies indicate that comprehensive reproductive healthcare integration within ART programs improves maternal outcomes, enhances ART adherence, and reduces stigma-related healthcare avoidance [16]. Mizoram's healthcare system lacks structured services to support PLHIV in navigating reproductive choices. Table 5 presents the district wise data of registered HIV cases in Mizoram in 2023.

Stigma remains a significant barrier to reproductive decision-making among PLHIV, both in healthcare settings and within communities. Participants reported concealing their reproductive intentions due to fear of judgment and discrimination. In some cases, healthcare providers displayed reluctance or bias, reinforcing self-doubt and discouraging family planning efforts. Family expectations strongly influenced reproductive decisions, with some individuals pressured to conceive despite health concerns, while others were actively discouraged from parenthood [17]. Traditional gender norms contributed to contradictory pressures, where women were expected to bear children despite HIV status, while men with infertility faced stigma related to masculinity and reproductive failure. Studies in other Indian states confirm that family influence often outweighs medical advisement in reproductive decision-making. Targeted community-based interventions promoting awareness of safe conception options and ART efficacy can significantly reduce reproductive stigma [18].

Table 5. District-wide estimate of HIV cases in Mizoram, 2023. {(HIV Estimates 2023: Technical Report, Ministry of Health & Family Welfare, Government of India.) (Figure 4).}

S. No.	District Name	Adult Prevalence	PLHIV Size	New HIV Infections	Incidence per 1,000 Uninfected Population	Need of Services for EVTH	District Priority
1	Aizawl	3.93	12150	554	1.38	140	High
2	Champhai	3.689	2162	77	0.999	25	High
3	Hnahthial	1.855	444	<25	0.639	<25	High
4	Khazawal	2.613	787	35	0.875	<25	High
5	Kolasib	3.634	2559	207	2.255	30	High
6	Lawngtlai	0.889	927	44	0.333	<25	Moderate
7	Lunglei	2.009	2251	84	0.572	40	High
8	Mamit	1.789	1306	40	0.421	<25	High
9	Saitual	1.625	697	<25	0.389	<25	High
10	Serchhip	2.261	1236	77	1.076	<25	High
11	Siaha	1.592	775	66	1.047	<25	High

https://doi.org/10.61577/jfrh.2025.100001



Category	Districts (#)
<0.20%	0
≥0.20% & <0.40%	0
≥0.40% & <1.0%	1
≥1.0%	10

Category	Districts (#)
<1,000	5
≥1,000 & <2,500	4
≥2,500 & <5,000	1
≥5,000	1

Category	Districts (#)
<50	5
≥50 & <100	4
≥100 & <200	0
≥200	2

Category	Districts (#)
<10	4
≥10 & <25	3
≥25 & <50	3
≥50	1

Figure 3. District-wide Map on registered HIV cases in Mizoram, 2023.

The psychological burden of reproductive decision-making in PLHIV is substantial. Fear, anxiety, and uncertainty about conception safety contribute to emotional distress, self-doubt, relationship strain, and guilt. Men with reduced sperm count due to chronic HIV infection or ART-related hormonal imbalances were often reluctant to seek fertility evaluation, leading to emotional isolation and avoidance of reproductive discussions [19].

For women, pregnancy loss was a significant psychological stress, often accompanied by guilt, social blame, and discouragement from future pregnancies. Those who had ectopic pregnancies or miscarriages reported insufficient emotional support from healthcare providers, further increasing their distress. The absence of structured mental health services within HIV care programs limits psychological support for PLHIV facing reproductive challenges. Research indicates that integrating psychosocial support into ART programs improves emotional well-being and reproductive confidence [20].

Healthcare providers play a critical role in reproductive decision-making for PLHIV, yet the study findings reveal gaps in service delivery, lack of structured fertility counselling, and provider bias. Participants frequently received incomplete or contradictory reproductive guidance, leading to delayed or abandoned fertility plans. The reluctance of healthcare workers to discuss fertility options stems from personal bias and insufficient training in HIV-inclusive reproductive care [21]. Fertility services for HIV-positive men remain severely lacking, with reports indicating that male infertility concerns were often dismissed in ART clinics. The absence of ART clinics offering integrated reproductive counselling further limits access to safe conception strategies. Global studies emphasize that training healthcare providers in HIV-sensitive fertility counselling significantly improves patient outcomes and reproductive autonomy [22].

The study findings align with global and national research on HIV and reproductive health but highlight Mizoram-specific sociocultural influences. While global research emphasizes that ART has transformed reproductive possibilities for PLHIV, misconceptions about transmission and stigma remain significant barriers in resource-limited settings. Unlike in high-income countries where reproductive counselling is widely integrated into HIV care, Mizoram lacks structured reproductive health interventions for PLHIV. Studies from South Africa and Brazil demonstrate that integrating fertility services within ART programs significantly improves reproductive health outcomes, yet such models are not widely implemented in India. The need for localized, culturally sensitive reproductive healthcare strategies is evident, as reproductive choices in Mizoram are strongly influenced by societal norms and stigma rather than medical advisement [2,4,23].

Conclusions

This study highlights the significant reproductive health challenges faced by people living with HIV (PLHIV) in

https://doi.org/10.61577/jfrh.2025.100001

Mizoram, including persistent fears of vertical transmission, limited access to fertility care, and stigma-related healthcare discrimination. Despite the effectiveness of PMTCT programs in reducing transmission to below 2%, inconsistent reproductive counselling and misinformation continue to create uncertainty. Many individuals reported denial of fertility services, inadequate guidance on safe conception, and limited access to assisted reproductive technologies (ARTs) due to healthcare provider reluctance or systemic barriers.

HIV-positive men with infertility concerns remain largely overlooked in ART programs, with minimal availability of fertility diagnostics, sperm preservation, or reproductive interventions. Chronic HIV infection and ART-related hormonal imbalances have been linked to sperm abnormalities, yet structured fertility support for men remains absent in HIV care settings. Women with pregnancy complications frequently faced discouragement rather than medical intervention, further exacerbating psychosocial distress and reproductive anxiety.

Stigma within healthcare settings directly influenced fertility decisions, with some individuals avoiding prenatal care or concealing reproductive intentions due to fear of discrimination. To address these challenges, it is essential to integrate fertility counselling into ART services, expand access to HIV-inclusive reproductive technologies, and train healthcare providers to eliminate bias in fertility care. Strengthening stigma reduction policies, mental health support, and equitable reproductive healthcare services is crucial in ensuring comprehensive, patient-centred reproductive care for PLHIV in Mizoram and beyond.

Disclosure statement

No potential conflict of interest was reported by the authors.

References

1. Gilling-Smith C, Nicopoullos JD, Semprini AE, Frodsham LC. HIV and reproductive care—a review of current practice. BJOG: Int J Obstet Gynaecol. 2006;113(8):869-878. https://doi.org/10.1111/j.1471-0528.2006.00960.x
2. National AIDS Control Organisation & ICMR-National Institute for Research in Digital Health and Data Science. India HIV Estimates 2023: Technical Report. Ministry of Health & Family Welfare, Government of India, New Delhi. 2024:1-77. https://naco.gov.in/sites/default/files/India%20HIV%20Estimates%202023_Technical%20Report_Final_17%20DEC%202024%20%281%29.pdf
3. Cohen CR, Bukusi E, Rees H, Blanchard K. Intersection of HIV and reproductive health. AIDS Res Ther. 2013; 2013:418918. https://doi.org/10.1155/2013/418918
4. Rao A, Mamulwar M, Panda S, Pachuau HZ, Vanlalvenzuali H, Lalruatsanga, et al. Finding a way forward with the community: qualitative inquiry in the generalized HIV epidemic in Mizoram, India. Front Public Health. 2023;11:1217628. https://doi.org/10.3389/fpubh.2023.1217628
5. Agboghoroma CO, Giwa-Osagie OF. Management of Infertility in HIV infected couples: A Review. Afr J Reprod Health. 2012;16(4):13-20.
6. Milford C, Beksinska M, Greener R, Pienaar J, Rambally Greener L, Mabude Z, et al. Fertility desires of people living with HIV: does the implementation of a sexual and reproductive health and HIV integration model change healthcare providers' attitudes and clients' desires?. BMC Health Serv Res. 2021 ;21(1):509. https://doi.org/10.1186/s12913-021-06487-0
7. Yuvaraj A, Kundu P. A snapshot of reproductive and sexual health and rights of women living with HIV in Asia. Oral Dis. 2020;26:54-58. https://doi.org/10.1111/odi.13390
8. Osoti A, Han H, Kinuthia J, Farquhar C. Role of male partners in the prevention of mother-to-child HIV transmission. Res Rep Neonatol. 2014 :131-138. http://dx.doi.org/10.2147/RRN.S46238
9. Kushnir VA, Lewis W. Human immunodeficiency virus/acquired immunodeficiency syndrome and infertility: emerging problems in the era of highly active antiretrovirals. Fertil Steril. 2011;96(3): 546-553. https://doi.org/10.1016/j.fertnstert.2011.05.094
10. Turan JM, Nyblade L. Global maternal and child health goals will not be achieved without addressing HIV-related stigma. J Acquir Immune Defic Syndr. 2013;64(1):e9-10. https://doi.org/10.1097/qai.0b013e31829b618c
11. Colvin CJ, Konopka S, Chalker JC, Jonas E, Albertini J, Amzel A, et al. A systematic review of health system barriers and enablers for antiretroviral therapy (ART) for HIV-infected pregnant and postpartum women. PloS one. 2014;9(10):e108150. https://doi.org/10.1371/journal.pone.0108150
12. Weber S, Zakaras JM, Hilliard S, Cohan D, Dworkin SL. "Is it all right for me to have a baby or not?": Men living with HIV discuss fertility desires and interactions with providers. J Assoc Nurses AIDS Care. 2017;28(1):118-129. https://doi.org/10.1016/j.jana.2016.10.004
13. van Zyl C, Visser MJ. Reproductive desires of men and women living with HIV: implications for family planning counselling. Reprod BioMed Online. 2015;31(3):434-442. https://doi.org/10.1016/j.rbmo.2015.06.004
14. Matthews LT, Burns BF, Bajunirwe F, Kabakyenga J, Bwana M, Ng C, et al. Beyond HIV-serodiscordance: Partnership communication dynamics that affect engagement in safer conception care. PloS one. 2017; 12(9):e0183131. https://doi.org/10.1371/journal.pone.0183131
15. Tamang B. Discrimination Experienced by Women Living with HIV and AIDS Accessing Reproductive Health Service. J Interdiscip Perspect. 2023;1(2):1-11. https://doi.org/10.5281/zenodo.10065748
16. Ford N, Newman M, Malumo S, Chitembo L, Gaffield ME. Integrating sexual and reproductive health services within HIV services: WHO guidance. Front Glob Womens Health. 2021;2:735281. https://doi.org/10.3389/fgwh.2021.735281
17. Ippoliti NB, Nanda G, Wilcher R. Meeting the reproductive health needs of female key populations affected by HIV in low-and middle-income countries: a review of the evidence. Stud Fam Plan. 2017;48(2):121-151. https://doi.org/10.1111/sifp.12020
18. Hollen CV. Navigating HIV, pregnancy, and childbearing in south India: Pragmatics and constraints in women's decision making. Med Anthropol. 2007;26(1):7-52. https://doi.org/10.1080/01459740601021186
19. Mindry DL, Crankshaw TL, Maharaj P, Munthree C, Letsoalo T, Milford C, et al. "We have to try and have this child before it is too late": missed opportunities in client–provider communication on reproductive intentions of people living with HIV. AIDS care. 2015;27(1):25-30. https://doi.org/10.1080/09540121.2014.951311
20. Putri HW. Psychological distress experienced by pregnant women undergoing antiretroviral treatment: A qualitative study. Indonesian J Nurs Midwifery. 2024;12(3):345-364. . http://dx.doi.org/10.21927/jnki.2024.12(3).345-364
21. Finocchario-Kessler S, Mabachi N, Dariotis JK, Anderson J, Goggin K, Sweat M. "We weren't using condoms because we were trying to conceive": The need for reproductive counseling for HIV-positive women in clinical care. AIDS patient care and STDs. 2012;26(11):700-707. https://doi.org/10.1089/apc.2012.0232
22. Short WR, Simone JM, Chakraborty R, Finocchario-Kessler S, HIV Preconception Care Study Team. Addressing fertility desires and preconception care needs of men living with HIV: perspectives from HIV providers about addressing the reproductive needs of male patients. AIDS care. 2021;33(1):80-85. https://doi.org/10.1080/09540121.2020.1719965
23. Cooper D, Mantell JE, Moodley J, Mall S. The HIV epidemic and sexual and reproductive health policy integration: views of South African policymakers. BMC public health. 2015 ;15:1-9. https://doi.org/10.1186/s12889-015-1577-9

https://doi.org/10.61577/jfrh.2025.100001