



# **AIDS Care**

Psychological and Socio-medical Aspects of AIDS/HIV

ISSN: 0954-0121 (Print) 1360-0451 (Online) Journal homepage: www.tandfonline.com/journals/caic20

# A qualitative exploration of women's choices and experiences of using oral and vaginal HIV preexposure prophylaxis in Eswatini

Esther Mukooza , Nqobile Mmema , Velibanti Dlamini , Edwin Mabhena , Michelle Daka , Sinikiwe Dlamini , Skinner Lekelem , Bernhard Kerschberger , Antonio Flores , Iza Ciglenecki , Sindy Matse & Alison Wringe

**To cite this article:** Esther Mukooza , Nqobile Mmema , Velibanti Dlamini , Edwin Mabhena , Michelle Daka , Sinikiwe Dlamini , Skinner Lekelem , Bernhard Kerschberger , Antonio Flores , Iza Ciglenecki , Sindy Matse & Alison Wringe (01 Dec 2025): A qualitative exploration of women's choices and experiences of using oral and vaginal HIV pre-exposure prophylaxis in Eswatini, AIDS Care, DOI: 10.1080/09540121.2025.2594615

To link to this article: <a href="https://doi.org/10.1080/09540121.2025.2594615">https://doi.org/10.1080/09540121.2025.2594615</a>

9	© 2025 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group
	Published online: 01 Dec 2025.
	Submit your article to this journal 🗗
hh	Article views: 77
Q <sup>L</sup>	View related articles 🗷
CrossMark	View Crossmark data ☑







# A qualitative exploration of women's choices and experiences of using oral and vaginal HIV pre-exposure prophylaxis in Eswatini

Esther Mukooza<sup>a</sup>, Ngobile Mmema<sup>a</sup>, Velibanti Dlamini<sup>a</sup>, Edwin Mabhena<sup>a</sup>, Michelle Daka<sup>a</sup>, Sinikiwe Dlamini<sup>a</sup>, Skinner Lekelem<sup>a</sup>, Bernhard Kerschberger<sup>a</sup>, Antonio Flores<sup>b</sup>, Iza Ciglenecki<sup>c</sup>, Sindy Matse<sup>d</sup> and Alison Wringe<sup>e</sup>

<sup>a</sup>Medical Department, Medecins sans Frontieres (OCG), Mbabane, Eswatini; <sup>b</sup>South African Medical Unit, Medecins sans Frontieres (OCB), Capetown, South Africa; <sup>c</sup>Medical Department, Medecins sans Frontieres (OCG), Geneva, Switzerland; <sup>d</sup>Eswatini National AIDS Programme (ENAP), Mbabane, Eswatini; <sup>e</sup>Department of Population Health, London School of Hygiene and Tropical Medicine, (LSHTM), London, UK

#### **ABSTRACT**

Understanding women's decision-making when offered different HIV pre-exposure prophylaxis (PrEP) options is critical for improving uptake. This qualitative study explored factors influencing PrEP choices among Swazi women in 2022-2023. Indepth interviews were conducted with 17 women who accepted or declined oral PrEP or the Dapivirine vaginal ring; and 6 healthcare workers who prescribed PrEP. One focus group discussion (FGD) with eight women eligible for PrEP and three FGDs with six to eight male community members explored attitudes to PrEP. Data were collected in Siswati, transcribed into English, and analyzed thematically. Women's decisions around PrEP use and product preferences were shaped by social norms around sexual relationships, practicalities of use and perceptions of effectiveness. Many preferred "invisible" methods, such as the ring, to avoid stigma or partner violence, while oral PrEP was favored by some women practicing anal sex. Ease of adherence, side-effects and ring insertion practicalities also influenced choices. Some participants questioned PrEP effectiveness or feared it might spread HIV, while some healthcare workers noted that future injectable options could reduce blame in cases of seroconversion. The findings highlight the need to offer women a range of PrEP options, supported by accurate information, to expand coverage in high-incidence settings.

#### **ARTICLE HISTORY**

Received 23 May 2025 Accepted 16 November 2025

#### **KEYWORDS**

HIV; PrEP ring; choice; qualitative; Eswatini; good health and well-being; reduced inequalities; gender equality; no poverty

#### **SUSTAINABLE DEVELOPMENT GOALS**

Good health and well-being: reduced inequalities; gender equality; no poverty

# Introduction

Southern and Eastern African countries have witnessed significant declines in HIV incidence over the past decade, with rates falling by 59% from 2010 to 2023 (UNAIDS, 2024b). The decline is largely attributable to the scale-up of antiretroviral therapy (ART), which has increased viral load suppression rates among people living with HIV and reduced transmission (Stover et al., 2021). In Eswatini, where HIV prevalence among adults has been the highest in the world since 2016 (UNAIDS, 2023a), progress in the HIV response has led to the 2030 UNAIDS 95-95-95 targets being achieved, with the country reaching 98-95-98 by the end of 2023 (UNAIDS, 2024a). Despite these results, some sub-populations living with HIV have notably poorer coverage of HIV testing and treatment, leading to a disproportionate number of new HIV infections among their sexual partners and clients. By the end of 2023, HIV incidence among adults aged 18-49 years was still over 7%, with over 65% of the 3900 annual new infections occurring among adult women (UNAIDS, 2024a).

In a bid to reduce the rate of new infections, the government of Eswatini has promoted combined HIV prevention for sexually active persons, including condoms, voluntary male circumcision and violence prevention and economic strengthening through the DREAMS package for adolescent girls and young women (AGYW) (Eswatini increases HIV preventative options to reduce new infections | WHO | Regional Office for Africa [Internet], 2023; Eswatini USM, 2022; DREAMS, n.d.). In 2018, oral HIV pre-exposure

prophylaxis (PrEP) was adopted as the Eswatini policy for men and women at high risk of HIV infection (Eswatini increases HIV preventative options to reduce new infections | WHO | Regional Office for Africa [Internet], 2023). Although PrEP represents a breakthrough in allowing women more control over HIV prevention, continuation rates have been disappointingly low in many settings (Ekwunife et al., 2022; Kawuma et al., 2025; Kiggundu et al., 2024). The reasons for high rates of discontinuation include side effects, forgetfulness and risks of stigma, violence, and abandonment of pills (Bjertrup et al., 2021 Apr 14; Bärnighausen et al., 2020; Golub, 2018 Apr; UNAIDS, 2025).

In 2022, the Dapivirine vaginal ring (DPV-VR) for PrEP was introduced in Eswatini following national consultations with key stakeholders to define an introduction framework and identify the resources required for its implementation. Although DPV-VR has demonstrated lower efficacy in randomized controlled trials than daily oral PrEP (WHO, 2021), it has been hypothesized that it may be preferred by women who are unable to adhere to daily oral PrEP. At the time our study was conducted in 2022-2023, long-acting injectable cabotegravir (CAB-LA) was on the horizon, but had not yet been introduced (UNAIDS, 2025; MSF to roll out injectable HIV prevention drug in southern Africa & Doctors Without Borders - USA [Internet], 2025).

For the first time in the history of the HIV response, there is an expanding number of HIV prevention options available to women at risk of HIV, over which they can exert control (World Health Organization (WHO), 2025). In practice, the ability to exercise choice for a preferred HIV prevention method relies on the availability of these options, along with clear information about the risks and benefits of each method, enabling an informed decision to be made by the user (Schmidt et al., 2025). However, in countries where funding is constrained, additional considerations such as the relative cost and efficacy of each PrEP product may also influence the extent to which all options for those at risk of HIV will be made available in practice (Lynch et al., 2025).

In recognition of these challenges and realities, a collection of African women and girls, HIV prevention advocates, and feminists have released the "HIV Prevention Choice Manifesto for Women and Girls in Africa", calling for countries and donors to ensure that all PrEP options are funded and made available to women at risk of HIV (African Women's HIV Prevention Community Accountability Board, 2023; Naidoo et al., 2025). The manifesto emphasizes a "choice-centred" approach, where no one product or strategy should be presented as "better" or "preferred," in recognition that women will be best protected from acquiring HIV when they have control over their health and can choose what works best for them at different periods of their lives. The underlying principle of choice in prevention options for women has previously been highlighted as a critical factor for client-centered and effective services (Kawuma et al., 2025). Evidence from family planning programs has also shown that choice among a mix of contraceptive methods and places to access them is essential to achieving higher rates of coverage through better uptake and adherence (DREAMS, n.d.; Ekwunife et al., 2022; Kiggundu et al., 2024).

Despite the newly emerging landscape of multiple PrEP products, the factors that influence women's choices regarding PrEP have not yet been well documented in real-life settings beyond clinical trials (Baeten et al., 2021 feb 1; Nair et al., 2023; Siedner et al., 2018; Tolley et al., 2024). The extent to which social norms and individual perceptions, needs and preferences for different PrEP options influence decision-making is crucial to ensuring that service delivery models are designed to empower women to access prevention products that best suit their needs. This qualitative study aimed to address this gap by exploring the factors that influence women's decision-making around PrEP to inform its further roll-out in Eswatini and beyond.

# **Methods**

# Study setting

The Shiselweni region of Eswatini, with a population of approximately 210,000, has the highest HIV prevalence in the country, estimated at 26.5% among people aged 15 years and older in 2021 (Ministry of Health, Eswatini, 2023). Since 2007, Médecins Sans Frontières (MSF) has supported the Ministry of Health in its HIV response, including several implementation research projects to inform national HIV prevention and treatment policies (Kerschberger et al., 2020; Kerschberger et al., 2024; Mukooza et al., 2023; Schausberger et al., 2021).

This qualitative study was conducted from October 2022 to May 2023 in the context of a wider study aimed at diagnosing and treating acute HIV and sexually transmitted infections in six health facilities in the Shiselweni region.

# Sampling and recruitment

In total, 732 women were tested for HIV as part of the wider study, among whom 689 were HIV-negative, 29 were HIV-positive based on the serial algorithm, 9 were diagnosed with acute HIV infection and for 5 women, there were missing data. Of the 689 HIV-negative women, 284 were considered eligible for PrEP, of whom 78 initiated PrEP and 35 were already on PrEP.

In-depth-interviews (IDIs) were undertaken with women who had been offered PrEP. Participants were purposively sampled from 78 women who initiated PrEP and 171 women who were eligible but declined the option to initiate it. Care was taken to ensure diversity across a range of characteristics including age, relationship status, self-reported, recent transactional sex and PrEP choice (oral PrEP, DPV-VR, or declined both PrEP options). Seventeen women were sampled for in-depth interviews, and all of them agreed to participate (Table 1).

Information about the qualitative study was provided to women by healthcare workers at the end of their initial study visit, and those expressing an interest provided their permission and details to healthcare workers for further contact with the qualitative research team to arrange the time and location of the interview. Two rounds of IDI were undertaken, approximately 4-6 weeks apart, in order to build up rapport with participants, and to explore their experiences between the first and second interview.

IDIs were undertaken with health workers from the six health facilities involved in screening or initiating women on PrEP were purposively sampled. Six healthcare workers (5 female, 1 male) were invited to participate in an interview, of whom all agreed to participate. Three focus group discussions were held with men aged 20-52 years old from three different villages recruited during health promotion sessions, with each group having 6-8 participants. One FGD was held with women who were eligible for PrEP, comprising those who opted for either oral PrEP, DPV-VR or who had declined PrEP. Among the ten women who were invited to participate in the FGD, eight agreed, among whom six also participated in the IDIs.

# **Data** generation

A mix of IDI and FGDs was used to generate different, but complementary types of data.

Table 1. Characteristics of the 17 women newly initiated on daily oral PrEP, vaginal PrEP ring and those who were offered PrEP but declined both options with whom IDI were conducted.

Va	Number	Total	
PrEP status	Daily oral PrEP	6	17
	Vaginal PrEP ring	5	
	Offered PrEP but declined both options	6	
Age	18–24 years old	4	17
	25–34 years old	6	
	35 years old and above	7	
Highest level of education attained	None	1	17
	Secondary school	11	
	High school	4	
	University	1	
Relationship status	Married	3	17
•	One partner	7	
	Multiple partners	6	
Occupation	Sex worker	4	17
·	Student	2	
	Housewife	3	
	Employed	2	
	Self-employed	6	
Self-reported recent transactional sex	Yes	4	17
·	No	13	

Key: Focus Group Discussion (FGD), In-depth Interview (IDI), pre-exposure prophylaxis (PrEP)

Repeated IDIs were used with women who had been offered PrEP to build up rapport with participants, and to capture experiences over time. IDIs were favored because they are best suited to exploring individual experiences with PrEP use, which was a central focus of the study. Topics covered during in-depth interviews with women who had been offered PrEP revolved around HIV risk perceptions, knowledge and understanding of HIV prevention options, and other considerations driving PrEP choice and preferences.

IDIs rather than FGDs were conducted with health workers as they provided them with anonymity to speak openly about their views without their responses being influenced by the presence of other cadres or workplace dynamics. Interviews with healthcare workers covered their knowledge and understanding of the different PrEP options, experiences initiating women on PrEP, and their views on the soon-to-be available CAB-LA (Table 2).

FGDs were conducted to enable an exploration of the broader, prevalent social norms that influenced women's PrEP decision-making processes. Three FGDs were conducted with men from the community and included topics on perceptions of HIV risk, knowledge and understanding of HIV prevention options, and perceptions about women's PrEP use. One FGD with women was conducted to explore social norms around PrEP use as well as views on injectable PrEP which was anticipated to become available in a few months after the data generation period. The FGD with women explored social norms around PrEP use and views on future PrEP products, including long-acting injectable PrEP and PrEP options combined with contraception.

The study and its purpose were explained to the participants, and following written informed consent, interviews were conducted by trained qualitative research assistants in a private room in the health facilities or at the MSF office, according to the participant's preference, and lasted approximately 50–90 minutes.

Interviews and group discussions were conducted in Siswati (or in English, if preferred by health workers) and audio-recorded if consent was provided, with detailed notes taken otherwise. The focus group discussions were led by one facilitator, with one note-taker also present, and matched by gender. Group discussions were conducted in Siswati and audio-recorded with the consent of all the participants

# Data analysis

Thematic analysis was employed to explore factors influencing participants' preferences for pre-exposure prophylaxis (PrEP) by systematically identifying, analyzing and reporting patterns within the qualitative data. Transcripts from interviews and focus groups were first transcribed verbatim and then reviewed multiple times to ensure familiarity. Initial codes were generated inductively using Nvivo11 (QSR International

Table 2	Summary of study	, sample size dat:	a acquisition mathod	and respective objectives.
Table 2.	Sullillary of Study	/ Sallible Size, uald	a accunstition method.	and respective objectives.

Participant category	No.	Data generation method	Objective(s) answered
Women newly initiated on daily oral PrEP	6	2 in-depth interviews each, at least one month apart (after the next refill date)	<ul> <li>Explored the decision-making processes underlying choices of women who were eligible for PrEP</li> <li>Sought to understand the experiences of women newly initiated on daily oral PrEP, including facilitators and barriers to PrEP initiation, adherence, and retention in care.</li> </ul>
Women initiated on vaginal PrEP ring.	5	2 IDI	– Same as above
Eligible women who were offered PrEP but declined both options.	6	IDI	<ul> <li>Explored barriers and facilitating factors associated with injectable PrEP combined with contraception.</li> <li>Sought to understand how the different PrEP options influence partner disclosure patterns and conversations about HIV prevention among PrEP users and their partners.</li> </ul>
Women from the three categories above	8	1 FGD	<ul> <li>Explored these women's views on an injectable product (CAB-LA) that was not yet available, but which was anticipated to be introduced in the period after the study.</li> </ul>
Male community members Lavumisa, Mathendele, Zomboze, Gege	3 groups	3 FGD	<ul> <li>Explored men's perceptions toward PrEP use by women considering that attitudes among men in these communities can shape the choices and experiences of women in relation to PrEP use.</li> </ul>
Health care workers	6	1IDI	<ul> <li>Explored their knowledge and understanding of how the different options work, how confident they felt offering PrEP services and the challenges encountered during service delivery including their thoughts on the uptake of PrEP by clients</li> </ul>

Pty Ltd, 2015), capturing recurring ideas related to individual and social influences on decision-making around PrEP utilization and product preferences. These codes were then grouped into broader themes which were refined through iterative discussions among the research team to ensure coherence and representativeness.

The COREQ checklist (Tong et al., 2007) was applied for the reporting of this study.

## Results

Three main themes emerged from the analysis of factors that drove decision-making about PrEP among women: (i) social norms around sexual relationships, (ii) practicalities surrounding PrEP use, and (iii) concerns and perceptions about effectiveness.

# Social norms around sexual relationships

Women's decisions about which product to choose often related to considerations of their sexual relationships. For some women, the ring represented a more discreet option for preventing HIV compared to daily oral PrEP which could be discovered by their partner:

These pills make noise, even if you want to hide them you cannot. The ring is better. (IDI, DVP-VR client)

Furthermore, some participants reported that oral PrEP could be mistaken for life-long ART if discovered by a woman's partner, which could lead to the following arguments:

We quarreled because she was taking this thing every day. I said, this person is taking the pills of getting life again [ART]. Yes, she tried to explain to me that she is taking them so that she doesn't get the virus ... . No, you are lying to me! (FGD, male)

In some cases, tensions over partners discovering PrEP pills were seen by both women and men as contributing to relationship breakdowns or even violence:

For me to learn that this woman is using this [PrEP], I can beat her up before she even explains. (FGD, male)

In this context, PrEP choices were a balancing act for women who had to navigate their ability to protect themselves from HIV against a backdrop of normalized violence toward women from their male sexual partners.

In some instances, ironically, these attitudes were attributed to some men's assumptions that PrEP use might encourage sexual promiscuity among women and thus increase HIV transmission risk:

She had better use her things without my knowledge or I will leave for someone I know is not using them, because diseases increased with the introduction of pills and condoms. (FGD, male).

However, in other cases, taking daily PrEP pills could be seen as an act of solidarity when the partner was on ART:.

When you are staying with someone on ART, I think it doesn't sit well with him, but when he sees me taking pills too [PrEP], I think that is a fair life. (IDI, Oral PrEP client).

For some women, PrEP product choice was influenced by the type of sexual intercourse they were engaging with. For women who desired to prevent HIV infection from anal sex, the ring was generally understood to be an ineffective option:

But what I do not like about the vaginal ring is that not all of us like vaginal sex only. So it doesn't protect me from HIV with the other types of sex that I may want to have, but just protects me with vaginal sex only. It limits us, that is what annoys me with it. Its limitation is kind of an obstacle for me (FGD, female)

Most women using the PrEP ring reported that it did not influence their experience of sexual intercourse with themselves or their partners. However, a few women mentioned discomfort or that it resulted in unusual discharge:

During sex, I felt it and it was uncomfortable. But my partner didn't, he only complained about having too much oily stuff after sex that was not normal. (IDI, DVR-VR client).

# Practicalities: convenience, comfort, and intersections with contraception use

For some women, the ring was preferred because it helped address adherence challenges associated with oral PrEP, even if it was perceived to be less effective:

I was still going to choose the ring, even if I had been informed about the difference in efficacy. The pills are problematic because you forget them, and you take them for good (IDI, DVR-VR client)

Some health workers were also concerned about adherence to oral PrEP or DVR-VR, noting that there were no monitoring mechanisms to assess adherence, unlike for clients on ART:

I am still asking myself if they really insert it, because even with oral PrEP some would take the pills but not swallow them ... because with ART, we are lucky we can do viral load and all that, but with this ring ... (IDI, HCW)

Furthermore, most health workers indicated that they would prefer injectable PrEP for clients to address their concerns about being blamed, should seroconversion occur among PrEP users due to suboptimal use or adherence. These perceptions from health workers could influence clients' choices and may contribute to more widespread uptake of injectible PrEP options once available in this context,.

Other women attributed undesirable side-effects to daily PrEP but also felt that the ring was not a good option for them either. One woman expressed enthusiasm for the upcoming PrEP injection as a result:

I am eagerly waiting for the day we get injectable PrEP. I stopped using the pills because the constipation was too much. [I] was excited about the ring, only to find that it's just a struggle for me. (FGD, female)

Some women preferred daily oral PrEP because they found the ring "so large," while others felt uncomfortable with the need to regularly insert and remove the product, or by using the ring alongside menstrual cups or tampons, or keeping it clean during menstruation:

The vagina is very fragile for one to keep on putting and removing objects from it. (IDI, oral PrEP client)

What annoys me with the ring is that after 28 days, you need to squat and push as if you are giving birth, so no ... (IDI, oral PrEP client)

Many women aligned their PrEP choices with their contraceptive preferences and decisions, with some women disliking pills for pregnancy or HIV prevention and others preferring to mix methods:

I would want to use the same method for PrEP and FP. Since injectable PrEP might be coming in the future, I would choose that one since I am using the family planning injection (IDI, client declined PrEP)

For me really, since I was on the family planning injection, I thought that the pills would be better than having to take family planning pills and oral PrEP (IDI, oral PrEP client)

I went for the FP injection because I hate pills, so with PrEP pills, I took them but when I heard that there was the ring, that's what I knew I now wanted [IDI, DVR-VR client]

Some women suggested that injectable contraception combined with PrEP would be ideal in the future, apart from during periods when pregnancy was desired:

I think if they can mix both injections and give you one jab, because even the injection is painful that you have to be injected every time you go back (Female, FGD)

Other women were concerned that two separate injections for contraception and HIV prevention may reduce the efficacy of both products, while others were more worried about the impracticability of using injectable contraception and injectable PrEP, considering the differences in duration between doses:

The problem will be when injectable PrEP lasts 2 months when I am taking the 3 months' injection for FP [family planning]. How will that work out? Will I have to move back to the 2 months FP injection which made me bleed just for these 2 injections to work well together? (IDI, Female)

Some participants were concerned that pregnant women who struggled to adhere to daily oral PrEP would miss out on protecting themselves from HIV, since it is not recommended for them to use DVR-VR.



Since PrEP ring is not recommended for pregnant women, I wish we also had injectable PrEP for pregnant women who have problems adhering to daily oral PrEP. (IDI, HCW)

Some participants transitioned between the available PrEP products to compare their experiences, indicating that the ability to switch methods is important in decision-making. One woman who switched from oral PrEP to ring and then back to oral PrEP explained the following:

I chose the ring to have a different experience from the pills. (IDI, DVR-VR client)

# **Concerns and perceptions about PrEP effectiveness**

There were several misconceptions about PrEP expressed by participants during the study. Some women believed that because injectable PrEP would spread all over the body, it would protect them better compared to the ring which is located; furthermore, some women who declined both oral and PrEP rings claimed that they had heard about PrEP countless times but were discouraged from initiating its use because of what they heard in the community, including non-government organizations using PrEP to spread HIV:

I lost interest in PrEP because there are more shocking rumours to PrEP in the community than information from health centres .... NGOs are spreading the HIV so that the numbers of people living with HIV remain high and for people to keep their jobs. [Client declined PrEP]

Some participants did not understand how the ring worked, arguing that they preferred oral PrEP because it would fight HIV from the bloodstream, unlike the ring that was situated in the vagina:

When the man transfers his HIV, the HIV will be blocked by the pills in the women's body system ensuring maximum protection, unlike the ring which is only an object in the woman's private part (FGD, male).

#### **Discussion**

This study identified several factors that influenced women's decision-making regarding PrEP products, including social and sexual norms, practicalities concerning PrEP use, and perceptions about effectiveness. Given the non-static nature of these factors in women's lives and their intersection with evolving risks, needs, and preferences, our findings support the provision of multiple PrEP products, as underscored by the HIV Prevention Choice Manifesto, as central to empowering women to opt for an approach best suited to their prevention needs (African Women's HIV Prevention Community Accountability Board, 2023).

We found that for many women in this context, discretion was a key concern when deciding among HIV prevention options, making long-acting options with less product visibility and fewer clinic visits appealing to many women, as observed in other settings (Koechlin et al., 2017; Tolley et al., 2024; Wulandari et al., 2022). The importance of discretion reflects the ongoing and highly pervasive stigmatization of HIV and harmful gender norms in this setting, which manifested through the references to violence from both male and female participants, and relationship disruption from being mistakenly identified as living with HIV, or as being seen to be promiscuous due to proactively taking pills for HIV prevention (Bjertrup et al., 2021 Apr 14; Inghels et al., 2022; Berner-Rodoreda et al., 2020). These findings demonstrate that optimizing HIV prevention for women in this setting should go beyond providing a choice of products, and must also integrate broader sexual health interventions for men and women to promote safe and healthy sexual relationships and prevent gender-based violence.

We found that the long-acting nature of DVR-VR and injectable PrEP were seen as having advantages over daily pill-taking as a way to address adherence issues by PrEP users, as noted in other studies from sub-Saharan Africa (Eakle et al., 2017; Little et al., 2024; Mugwanya et al., 2019; Mugwanya et al., 2021; Nair et al., 2023; Stoner et al., 2022). However, in line with the findings from other settings (Inghels et al., 2022), we found that DVR use could be suboptimal because of ring removal by users, and continuation rates have been disappointingly low (Ekwunife et al., 2022; Kawuma et al., 2025; Kiggundu et al., 2024; Wulandari et al., 2022). Furthermore, health workers expressed a preference for injectable PrEP in light of their concerns about being blamed; seroconversion occurs after the provision of DVR or daily oral PrEP with suboptimal adherence or use. Their own beliefs and messaging around the most appropriate product may influence end-user choices, with similar findings previously emerging from other studies that have explored health worker messaging on the uptake of HIV prevention interventions (Boudewyns et al., 2024; Swendeman et al., 2024). As such, interventions such as training and regular supportive supervision are needed to ensure that health workers are comfortable with explaining optimal use, as well as the relative advantages and disadvantages of different PrEP options, including seroconversion risks to potential users. In addition, further research is needed to better understand which combination of adherence and continuation support interventions, such as health worker support, peer support or digital reminders works best in different settings to maximize effective PrEP use (Haberer et al., 2015; Haberer et al., 2021).

We found that contraception preferences influenced decision-making regarding PrEP products in different ways. A sense of misalignment or non-compatibility between contraception and HIV prevention methods influenced both PrEP initiation as well as PrEP continuation, as also shown in other studies that have identified concerns around hygiene during menstruation and intrauterine device use as factors that undermine optimal DVR-VR use (Browne et al., 2022). These findings highlight the importance of integrating the provision of PrEP and contraception at the point of service delivery where possible, so that providers can support clients in discussing the intersectionality between both contraception and HIV prevention needs and preferences, as well as address any misconceptions regarding incompatibilities between certain combinations and reduce the number of interactions with health workers (Mugwanya et al., 2019). The dual prevention pill, currently being developed to prevent both pregnancy and HIV, may be one additional future "two-in-one" product to support reduction of both HIV and unwanted pregnancies for some users (Young et al., 2023), although it will not address privacy and discretion concerns. Several long-acting, combined HIV prevention and pregnancy products are being investigated, and our findings suggest that they would hold appeal to many women, although they are still in the early stages of development (Unitaid | UNITAID [Internet], 2025).

Although we observed high levels of PrEP uptake, misconceptions and knowledge gaps around PrEP use and effectiveness were rife among PrEP users and community members, highlighting the need for more accurate information to be readily available in a format that enables potential PrEP users and partners to weigh the pros and cons of each product in the context of their daily lived realities, and with opportunities to ask questions and address their concerns. While this has been acknowledged by the Choice Manifesto (UNAIDS, 2023b), the data from our study indicate that this reality has not yet been achieved, and much greater effort is needed as PrEP options expand if their utilization is to be fully effective.

Rumors regarding the ill-intentions of NGOs are not unique to PrEP, as previously observed in relation to other health interventions in sub-Saharan African countries (Chitukuta et al., 2019; Jonas et al., 2022; Tyagi et al., 2025). The emergence of rumors and mistrust is often deeply embedded within the historical and sociopolitical contexts in which health interventions are delivered, particularly when associated with "foreign" products or funding. Accurate messaging as part of awareness-raising and demand generation should be integrated into existing community-level HIV prevention efforts, particularly those led by peers through civil society organization, to build the trust and engagement of communities with HIV service delivery, particularly as new PrEP options become available in the future (Chitukuta et al., 2019).

This study has several limitations that should be considered. First, our study aimed to provide a snapshot of women's decision-making in relation to PrEP use. In the context of women's changing risks and the upcoming introduction of new PrEP products, such as CAB-LA and Lenacapivir, longitudinal research would be valuable in exploring how factors that influence their decision-making evolve with changing circumstances, greater societal exposure and access to new options. Second, some participants may have been reluctant to express negative views about the quality or nature of the services provided. The strengths of this study included the use of both IDIs and FGDs, enabling us to explore individual experiences and understandings of different PrEP options among clients, as well as the broader societal norms with regards to sexuality and gender that influence users' choices. Interviews with healthcare workers provided additional insights into how their own attitudes toward PrEP options may have influenced their clients' choices.

In conclusion, our study found that women's decision-making around PrEP was shaped by a complex range of social norms and practical considerations as well as being influenced by (mis)information, with no one product being consistently preferred over the others. As women's risks and circumstances evolve throughout their life course, our findings support the call for maximizing the choice of PrEP options available to women, alongside well-designed and well-funded demand generation and support interventions to

facilitate empowered decision-making and HIV risk reduction to maximize coverage from HIV prevention innovations.

# **Acknowledgements**

We acknowledge the support provided by Médecins Sans Frontières (MSF) Switzerland and the study implementers employed by MSF Eswatini for the successful implementation of this study. EM (PhD) conceived the idea of a nested qualitative study component and wrote the protocol with the support of AW (PhD). EM, BK (PhD) and IC secured ethical clearance. EM led the implementation of the study, EM, VD and NM collected data, and EM led the data analysis with support from AW, VD and NM. EM and AW wrote the first draft of the manuscript with inputs from all coauthors. EM drafted the manuscript and reviewed the letters. Language and structural refinements were supported by ChatGPT (OpenAI), with all final content reviewed and approved by the authors.

# **Author contributions**

CRediT: Esther Mukooza: Conceptualization, Data curation, Formal analysis, Methodology, Writing - original draft; Ngobile Mmema: Data curation, Formal analysis; Velibanti Dlamini: Data curation, Formal analysis; Edwin Mabhena: Project administration, Supervision; Michelle Daka: Project administration, Supervision; Sinikiwe Dlamini: Data curation; Skinner Lekelem: Data curation, Project administration, Supervision; Bernhard Kerschberger: Resources, Validation; Antonio Flores: Validation; Iza Ciglenecki: Resources, Validation, Writing - review & editing; Sindy Matse: Validation; Alison Wringe: Conceptualization, Formal analysis, Methodology, Supervision, Writing - review & editing

### **Disclosure statement**

No potential conflict of interest was reported by the author(s).

# **Funding**

This study was conducted in the context of humanitarian medical operations financed by Médecins Sans Frontières (MSF) Switzerland in Eswatini. All authors affiliated to MSF were employees who received a monthly salary.

# **Ethics Approval**

Ethical clearance was obtained from both the MSF Ethical Review Board and the Eswatini Health and Human Research Review Board (EHHRRB) under ID number 2065 and FWA 00026661/IRB 00011253/ EHHRRB079/2022, respectively.

# **Consent for publication**

Informed consent was obtained from all study participants before data collection, including permission to use their words anonymously during the dissemination of findings.

# **Availability of datasets**

The datasets used for analysis may be made available upon formal request from the corresponding author.

# References

African Women's HIV Prevention Community Accountability Board. (2023). The HIV prevention choice manifesto for women and girls in Africa [Internet]. UNAIDS. https://www.unaids.org/en/resources/presscentre/featurestories/ 2023/september/20230912\_choice-manifesto.

Baeten, J. M., Palanee-Phillips, T., Mgodi, N. M., Mayo, A. J., Szydlo, D. W., Ramjee, G., Mirembe, B. G., Mhlanga, F., Hunidzarira, P., Mansoor, L., E., Siva, Samantha, Govender, Vaneshree, Makanani, Bonus, Naidoo, Logashvari, Singh, Nishanta, Nair, Gonasagrie, Chinula, Lameck, Parikh, U. M., Mellors, J. W., et al. (2021 Feb 1). Safety, uptake, and use of a dapivirine vaginal ring for HIV-1 prevention in African women (HOPE): an open-label, extension study. The Lancet HIV, 8(2), e87-e95. doi:10.1016/S2352-3018(20)30304-0



- Bärnighausen, K., Matse, S., Hughey, A. B., Hettema, A., Bärnighausen, T. W., & McMahon, S. A. (2020 Feb). 'We know this will be hard at the beginning, but better in the long term': Understanding PrEP uptake in the general population in Eswatini. *AIDS Care*, 32(2), 267–273. doi:10.1080/09540121.2019.1653437
- Berner-Rodoreda, A., Geldsetzer, P., Bärnighausen, K., Hettema, A., Bärnighausen, T., Matse, S., et al. (2020 Sept 23). It's hard for us men to go to the clinic. We naturally have a fear of hospitals." men's risk perceptions, experiences and program preferences for PrEP: A mixed methods study in Eswatini. *PLoS One*, *15*(9), e0237427. doi:10.1371/journal. pone.0237427
- Bjertrup, P. J., Mmema, N., Dlamini, V., Ciglenecki, I., Mpala, Q., Matse, S., et al. (2021 Apr 14). PrEP reminds me that I am the one to take responsibility of my life: A qualitative study exploring experiences of and attitudes towards pre-exposure prophylaxis use by women in Eswatini. *BMC Public Health*, 21(1), 727. doi:10.1186/s12889-021-10766-0
- Boudewyns, V., Uhrig, J. D., Williams, P. A., Anderson, S. K. E., & Stryker, J. E. (2024 Feb). Message framing strategies to promote the uptake of PrEP: Results from formative research with diverse adult populations in the United States. *AIDS and Behavior*, 28(2), 535–546. doi:10.1007/s10461-023-04242-6
- Browne, E. N., Brown, E. R., Palanee-Phillips, T., Reddy, K., Naidoo, L., Jeenarain, N., et al. (2022 Aug 1). Patterns of adherence to a dapivirine vaginal ring for HIV-1 prevention Among South African women in a phase III randomized controlled trial. *Journal of Acquired Immune Deficiency Syndromes*, 90(4), 418–424. doi:10.1097/QAI. 0000000000002990
- Chitukuta, M., Duby, Z., Katz, A., Nakyanzi, T., Reddy, K., Palanee-Phillips, T., et al. (2019 Nov). Negative rumours about a vaginal ring for HIV-1 prevention in sub-Saharan Africa. *Culture, Health & Sexuality*, 21(11), 1209–1224. doi:10.1080/13691058.2018.1552989
- DREAMS. (n.d.). DREAMS Core package of interventions summary. Undated.
- Eakle, R., Gomez, G. B., Naicker, N., Bothma, R., Mbogua, J., Cabrera Escobar, M. A., et al. (2017 Nov 21). HIV pre-exposure prophylaxis and early antiretroviral treatment among female sex workers in South Africa: Results from a prospective observational demonstration project. *PLoS Medicine*, 14(11), e1002444. doi:10.1371/journal.pmed. 1002444
- Ekwunife, O. I., Ejie, I. L., Okelu, V., Mita, C., Durosinmi-Eti, O., Powell, A., et al. (2022 Dec 8). Interventions to increase the uptake and continuation of pre-exposure prophylaxis (PrEP) by adolescent girls and young women at high risk of HIV in low-income and middle-income countries: A scoping review. *BMJ Glob Health*, 7(12), e009474. doi:10.1136/bmjgh-2022-009474
- Eswatini increases HIV preventative options to reduce new infections | WHO | Regional Office for Africa [Internet]. (2023). Retrieved January 19, 2025, from https://www.afro.who.int/countries/eswatini/news/eswatini-increases-hiv-preventative-options-reduce-new-infections.
- Eswatini USM. (2022). DREAMS [Internet]. U.S. Embassy in Eswatini. Retrieved July 18, 2022, from https://sz. usembassy.gov/our-relationship/pepfar/dreams/.
- Golub, S. A. (2018 Apr). PrEP stigma: Implicit and explicit drivers of disparity. *Current HIV/AIDS Reports*, 15(2), 190–197. doi:10.1007/s11904-018-0385-0
- Haberer, J. E., Bangsberg, D. R., Baeten, J. M., Curran, K., Koechlin, F., Amico, K. R., et al. (2015 July 17). Defining success with HIV pre-exposure prophylaxis: A prevention-effective adherence paradigm. *Aids (London, England)*, 29(11), 1277–1285. doi:10.1097/QAD.0000000000000047
- Haberer, J. E., Bukusi, E. A., Mugo, N. R., Pyra, M., Kiptinness, C., Oware, K., et al. (2021 Mar). Effect of SMS reminders on PrEP adherence in young Kenyan women (MPYA study): a randomised controlled trial. *The Lancet HIV*, 8(3), e130–e137. doi:10.1016/S2352-3018(20)30307-6
- Inghels, M., Kim, H. Y., Tanser, F., Hettema, A., McMahon, S. A., Oldenburg, C. E., et al. (2022). PrEP uptake and delivery setting preferences among clients visiting six healthcare facilities in Eswatini. *AIDS and Behavior*, 26(10), 3345–3355. doi:10.1007/s10461-022-03646-0
- Jonas, K., Duby, Z., Maruping, K., Harries, J., & Mathews, C. (2022). Rumours, myths, and misperceptions as barriers to contraceptive use among adolescent girls and young women in South Africa. *Front Reprod Health*, *4*, 960089. doi:10. 3389/frph.2022.960089
- Kawuma, S., Katwesigye, R., Walusaga, H., Akatukunda, P., Nangendo, J., Kabugo, C., et al. (2025 Jan 14). Determinants of continuation on HIV pre-exposure propylaxis among female sex workers at a referral hospital in Uganda: A mixed methods study using COM-B model. *BMC Public Health*, 25(1), 143. doi:10.1186/s12889-024-20975-y
- Kerschberger, B., Daka, M., Shongwe, B., Dlamini, T., Ngwenya, S., Danbakli, C., et al. (2024 June 3). The introduction of video-enabled directly observed therapy (video-DOT) for patients with drug-resistant TB disease in Eswatini amid the COVID-19 pandemic a retrospective cohort study. *BMC Health Services Research*, 24(1), 699. doi:10.1186/s12913-024-11151-4
- Kerschberger, B., Schomaker, M., Jobanputra, K., Kabore, S. M., Teck, R., Mabhena, E., et al. (2020 Mar). HIV programmatic outcomes following implementation of the 'Treat-All' policy in a public sector setting in Eswatini: A prospective cohort study. *Journal of The International Aids Society*, 23(3), e25458. doi:10.1002/jia2.25458
- Kiggundu, R., Soh, Q. R., Tieosapjaroen, W., Fairley, C. K., Tucker, J. D., Tang, W., et al. (2024 June 1). Restarting pre-exposure prophylaxis (PrEP) for HIV: A systematic review and meta-analysis. *eClinicalMedicine* [Internet], 72.



- Retrieved January 19, 2025, from https://www.thelancet.com/journals/eclinm/article/PIIS2589-5370(24)00226-8/ fulltext.
- Koechlin, F. M., Fonner, V. A., Dalglish, S. L., O'Reilly, K. R., Baggaley, R., Grant, R. M., et al. (2017). Values and preferences on the use of oral pre-exposure prophylaxis (PrEP) for HIV prevention among multiple populations: A systematic review of the literature. AIDS and Behavior, 21(5), 1325-1335. doi:10.1007/s10461-016-1627-z
- Little, K. M., Hanif, H., Anderson, S. M., Clark, M. R., Gustafson, K., & Doncel, G. F. (2024). Preferences for long-acting PrEP products Among women and girls: A quantitative survey and discrete choice Experiment in Eswatini, Kenya, and South Africa. AIDS and Behavior, 28(3), 936-950. doi:10.1007/s10461-023-04202-0
- Lynch, S., Cohen, R. M., Kavanagh, M., Sharma, A., Raphael, Y., Pillay, Y., et al. (2025 Oct 1). Lessons for long-acting lenacapavir: Catalysing equitable PrEP access in low-income and middle-income countries. The Lancet HIV, 12(10), e722-e731. doi:10.1016/S2352-3018(25)00161-4
- Ministry of Health, Eswatini. (2023). Swaziland HIV Incidence Measurement Survey (SHIMS)3 [Internet]. PHIA Project. Retrieved May 13, 2023, from https://phia.icap.columbia.edu/eswatini-summary-sheet-2021/.
- MSF to roll out injectable HIV prevention drug in southern Africa | Doctors Without Borders USA [Internet]. (2025). Retrieved January 19, 2025, from https://www.doctorswithoutborders.org/latest/msf-roll-out-injectable-hivprevention-drug-southern-africa.
- Mugwanya, K. K., Matemo, D., Scoville, C. W., Beima-Sofie, K. M., Meisner, A., Onyango, D., et al. (2021 Dec 11). Integrating PrEP delivery in public health family planning clinics: A protocol for a pragmatic stepped wedge cluster randomized trial in Kenya. Implement Sci Commun, 2(1), 135. doi:10.1186/s43058-021-00228-4
- Mugwanya, K. K., Pintye, J., Kinuthia, J., Abuna, F., Lagat, H., Begnel, E. R., et al. (2019 Sept). Integrating preexposure prophylaxis delivery in routine family planning clinics: A feasibility programmatic evaluation in Kenya. PLoS Medicine, 16(9), e1002885. doi:10.1371/journal.pmed.1002885
- Mukooza, E., Schausberger, B., Mmema, N., Dlamini, V., Aung, A., Kerschberger, B., et al. (2023 Aug 8). "It is still very little; I cannot pass it on": a qualitative study of experiences of diagnosis and treatment of acute HIV infection in Eswatini. AIDS Care, 1-6.
- Naidoo, P. N., Ayieko, J., & Fonner, A. V. (2025). Expanding access to a choice-based HIV prevention market. International AIDS Society [Internet], 28(S2), https://onlinelibrary.wiley.com/doi/10.1002jia2.70009.
- Nair, G., Celum, C., Szydlo, D., Brown, E. R., Akello, C. A., Nakalega, R., et al. (2023 Dec 1). Adherence, safety, and choice of the monthly dapivirine vaginal ring or oral emtricitabine plus tenofovir disoproxil fumarate for HIV preexposure prophylaxis among African adolescent girls and young women: A randomised, open-label, crossover trial. The Lancet HIV, 10(12), e779-e789. doi:10.1016/S2352-3018(23)00227-8
- QSR International Pty Ltd. (2015). NVivo Qualitative Data Analysis Software, Version 11 [Internet]. Retrieved October 25, 2025, from http://sirc.net/gsr-international-pty-ltd/.
- Schausberger, B., Mmema, N., Dlamini, V., Dube, L., Aung, A., Kerschberger, B., et al. (2021 Dec 6). 'We have to learn to cooperate with each other': A qualitative study to explore integration of traditional healers into the provision of HIV self-testing and tuberculosis screening in Eswatini. BMC Health Services Research, 21(1), 1314. doi:10.1186/ s12913-021-07323-1
- Schmidt, H. M. A., Prochazka, M., Ingold, H., Reza-Paul, S., Chidarikire, T., Romyco, I., et al. (2025 July). Seizing the moment: The potential of PrEP choice and innovation to transform HIV prevention. Journal of The International Aids Society, 28(S2)), e26498. doi:10.1002/jia2.26498
- Siedner, M. J., Hettema, A., Hughey, A., Oldenburg, C. E., Kohler, S., Bärnighausen, K., et al. (2018 July 17). Preference for injectable over oral HIV pre-exposure prophylaxis in public-sector primary-care clinics in Swaziland. Aids (London, England), 32(11), 1541-1542. doi:10.1097/QAD.00000000001859
- Stoner, M. C. D., Browne, E. N., Gundacker, H. M., Hawley, I., Chen, B. A., Hoesley, C., et al. (2022 Feb 22). Acceptability of an extended duration vaginal ring for HIV prevention and interest in a multi-purpose ring. PLoS One, 17(2), e0263664. doi:10.1371/journal.pone.0263664
- Stover, J., Glaubius, R., Teng, Y., Kelly, S., Brown, T., Hallett, T. B., et al. (2021 Oct 18). Modeling the epidemiological impact of the UNAIDS 2025 targets to end AIDS as a public health threat by 2030. PLOS Medicine, 18(10), e1003831. doi:10.1371/journal.pmed.1003831
- Swendeman, D., Rotheram-Borus, M. J., Arnold, E. M., Fernández, M. I., Comulada, W. S., Lee, S. J., et al. (2024 Mar 1). Optimal strategies to improve uptake of and adherence to HIV prevention among young people at risk for HIV acquisition in the USA (ATN 149): a randomised, controlled, factorial trial. The Lancet Digital Health, 6(3), e187-e200. doi:10.1016/S2589-7500(23)00252-2
- Tolley, E. E., Bula, A., Chitukuta, M., Ndimande-Khoza, N., Etima, J., Namey, E., et al. (2024). Preferences for oral and injectable PrEP among qualitative sub-study participants in HPTN 084. PLoS One, 19(10), e0309811. doi:10.1371/ journal.pone.0309811
- Tong, A., Sainsbury, P., & Craig, J. (2007). Consolidated criteria for reporting qualitative research (COREQ): A 32-item checklist for interviews and focus groups. International Journal for Quality in International Care, 19(6), 349-357. doi:10.1093/intqhc/mzm042
- Tyagi, A., Bajaj, S. S., Nayeu, E. N., & Stanford, F. C. (2025 Jan). No person left behind: Understanding vaccine hesitancy in low- and middle-income countries. Vaccine, 44, 126446. doi:10.1016/j.vaccine.2024.126446



UNAIDS. (2023a). Global HIV & AIDS statistics - 2023 Fact sheet [Internet]. Retrieved February 21, 2024, from https://www.unaids.org/en/resources/fact-sheet.

UNAIDS. (2023b). The HIV prevention choice manifesto for women and girls in Africa.

UNAIDS. (2024a). AIDSinfo | UNAIDS [Internet]. Retrieved January 19, 2025, from https://aidsinfo.unaids.org/.

UNAIDS. (2024b). UNAIDS Global AIDS Update Eastern and Southern Africa [Internet]. UNAIDS. Retrieved April 6, 2025, from https://www.unaids.org/sites/default/files/media\_asset/2024-unaids-global-aids-update-eastern-southern-africa en.pdf.

UNAIDS. (2025). Eswatini | RESULTS AND TRANSPARENCY PORTAL [Internet]. Retrieved January 19, 2025, from http://open.unaids.org/countries/eswatini.

Unitaid | UNITAID [Internet]. (2025). Retrieved January 20, 2025, from https://unitaidngodelegation.org/who-we-are/unitaid/.

WHO. (2021). WHO recommends the dapivirine vaginal ring as a new choice for HIV prevention for women at substantial risk of HIV infection [Internet]. Retrieved December 14, 2021, from https://www.who.int/news/item/26-01-2021-who-recommends-the-dapivirine-vaginal-ring-as-a-new-choice-for-hiv-prevention-for-women-at-substantial-risk-of-hiv-infection.

World Health Organization (WHO). (2025). Guidelines on lenacapvir for HIV prevention and testing strategies for long-acting injectable pre-exposure prophylaxis (PrEP) [Internet]. Geneva: World Health Organization. https://iris.who.int/server/api/core/bitstreams/30ec1404-5338-4459-a6f0-a187c85f3ff1/content.

Wulandari, L. P. L., He, S. Y., Fairley, C. K., Bavinton, B. R., Schmidt, H. M., Wiseman, V., et al. (2022 Sept 1). Preferences for pre-exposure prophylaxis for HIV: A systematic review of discrete choice experiments. eClinicalMedicine [Internet]. 51. Retrieved January 20, 2025, from https://www.thelancet.com/journals/eclinm/article/PIIS2589-5370(22)00237-1/fulltext.

Young, A. M., Mancuso, N., Atujuna, M., Tenza, S., Chitukuta, M., Kemigisha, D., et al. (2023 Dec). Adolescent girls and young women's experiences with disclosing oral PrEP or dapivirine vaginal ring use: A multi-country qualitative analysis. *AIDS and Behavior*, 27(12), 3941–3951. doi:10.1007/s10461-023-04109-w