

Hypothetical Preferences and Concerns for Long-Acting Injectable HIV PrEP Use Among Female Barmaids in Ubungo, Dar Es Salaam, Tanzania

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Background: Oral HIV pre-exposure prophylaxis (PrEP) has been introduced globally, but women in sub-Saharan Africa frequently experience challenges in uptake and adherence. Female barmaids are at HIV risk due to transactional sex. However, uptake and adherence to oral PrEP pills is poor. Long-acting injectable (LAI) PrEP has the potential to increase prevention by improving adherence. Nevertheless, LAI PrEP is yet to be initiated in Tanzania. We explored preferences and concerns about LAI PrEP use among female barmaids in Ubungo municipality.

Methods: We conducted in-depth interviews with 17 purposefully selected female barmaids. Interviews were conducted using a guide with semi-structured questions. We adopted an inductive approach for analyzing data.

Findings: The majority of PrEP non-users expressed no preference for any form of PrEP, while oral PrEP-users preferred LAI PrEP. Overall, LAI PrEP was preferred due to its discretion, fewer side effects, prolonged prevention, and reduced fatigue compared to oral pill PrEP with concerns about large pill size, side effects, and the burden of daily use. Most interviewees indicated a three-month PrEP injection preference, though some preferred a monthly PrEP injection for effective monitoring and control of potential side effects. Regarding the delivery model, the healthcare facility was mostly preferred for timely services, convenience more privacy and reduced stigma. Community spots were preferred for convenience and friendlier services from providers. The majority reported no major concerns about using LAI PrEP, though a few expressed concerns about its trial phase, potential links to cancer, risky sexual behaviours, and side effects such as fatigue, dizziness.

Conclusion: The majority of the interviewees expressed strong interest in LAI PrEP and reported fewer concerns, emphasizing more convenience and discretion. Our findings suggest that since LAI can address challenges of adherence associated with daily PrEP pills, it is important to introduce it to expand HIV prevention options for barmaids and other women at risk of HIV in Tanzania.

Keywords: long-acting injectable PrEP, preferences, concerns, female barmaids

Introduction

Oral HIV pre-exposure prophylaxis (PrEP) has been introduced in about 70 countries globally, including in sub-Saharan Africa. However, women using it have faced significant barriers such as stigma, judgment, and fear of violence.¹ The implementation of oral PrEP began in Tanzania in 2018^{2,3} Effective long-acting PrEP products for HIV prevention are needed for women to increase their protection options.¹ Long-acting injectable (LAI) PrEP like cabotegravir (CAB-LA) is one potential new PrEP option for the prevention of HIV-1 among at risk population.⁴⁻⁷ The World Health Organization (WHO) released new guidelines for the use of LAI cabotegravir (CAB-LA) as PrEP for HIV in 2022 and encouraged countries to plan for its use as a safe and highly effective prevention option for people at substantial risk of HIV infection.⁵ CAB-LA is an intramuscular injectable, long-acting form of PrEP, with the first two injections administered four weeks apart, followed thereafter by an injection every eight weeks. CAB-LA was shown to be safe and highly effective among populations at increased HIV risk in two randomized controlled trials, HPTN 083 and HPTN 084.

These studies found that the use of CAB-LA led to a 79% reduction in HIV risk compared with oral PrEP, which has faced a significant challenge due to daily oral pill adherence.⁵

Over 25% and 80% of new HIV infections in Southern Africa and Tanzania respectively occur in adolescents and young women aged 15–24, indicating higher HIV incidence.^{1,8,9} The prevalence of HIV in Tanzania ranges between 0.2% and 12.7% in the general population.⁹ Tanzania had 60,000 new HIV cases in 2023. The incidence was 0.24% among women and 0.11% among men in the same age group indicating high risk to women. HIV prevalence in women is higher than in men in all age groups, but differentials are the highest among young women and girls, reflecting strong gender and age component in the increased vulnerability to HIV in Tanzania. Prevention is a priority, especially in vulnerable groups like adolescent girls² and new HIV infections have decreased from 65,000 in 2017 to 53,000 in 2019.³

Studies have reported that barmaids are people working in both licensed and unlicensed bars, employed to sell beer at low wages; and in the attempt to supplement their meagre income, they involve themselves in sexual relationships with the customers they may not know of their HIV status, for example, truck drivers who may stop overnight, and rich but promiscuous men of the area.^{10,11} The risk exposure and vulnerability of barmaids and guest house attendants are contributed to by the influences of sexual practices from several diverse bar clients they serve, mainly after they are tempted to receive monetary compensation from men to engage in unprotected sexual intercourse without knowing their HIV status.¹² The study conducted in 2017, which included HIV testing female bar workers commonly known as barmaids who consented to test for HIV, found 7% of the 56 participants tested positive.¹⁰ Effective interventions to prevent HIV infection in this group have a substantial public health outcome for reaching global HIV prevention goals.^{13,14}

Oral HIV PrEP was introduced in Tanzania since 2018 targeting at risk population groups. Programs implementing oral PrEP pills have noted challenges with uptake and effective use among oral PrEP users.^{15,16} South African studies on PrEP trials among women like HPTN 067/ADAPT have described stigma and hindering social norms, which discouraged them from taking pills openly, and challenges in adhering to pill dosing.^{17,18} Thus, interventions that empower women to avoid daily, home-based dosing could perceptibly help women overcome barriers to PrEP use. LAI PrEP may mitigate oral pill adherence challenges reported by young women in Southern Africa. Compared to oral PrEP, LAI PrEP has the benefits of long-acting duration, improved user discretion, and lower user burden due to the long-acting effect as opposed to a daily pill.¹⁹

Preferences for PrEP in Sub-Saharan Africa for studies conducted in Eswatini and Tanzania indicate that more than 70% of the surveyed population preferred LAI over oral or implant PrEP regardless of their age, sex, sexual behaviour, or PrEP use status.^{1,6,10,20,21} Regarding preferences among users, most women previously or currently using PrEP in Swaziland stated a preference for LAI over oral PrEP. Approximately 3 in 4 individuals who engaged in PrEP services in outpatient care in Swaziland reported a preference for LAI over oral PrEP for the prevention of HIV, and this preference was consistent across demographic and sexual behaviour characteristics, and PrEP pills use experience.^{10,20} In addition, findings from the HPTN 076 study indicated that young HIV-negative women who received injectable PrEP indicated preference for LAI over oral PrEP.²² Such findings advocate for the potential for LAI PrEP for HIV prevention among women at risk in the Southern African region, who have also been ineffectively reached with oral PrEP services. So, as LAI PrEP efficacy data among young women in Southern Africa become more available, it is important to conduct a formative study for preferences before implementing demonstration studies to assess the real-world uptake of LAI PrEP for HIV prevention.²¹

Model of delivery preference for LAI PrEP have been reported in the iPrevent study in South Africa which assessed youths' preferences for key attributes of long-acting PrEP, focusing on characteristics relevant to product delivery. A total of 807 participants were enrolled in this study, with a median age of 21 years, with females preferring injectable PrEP offered at a health clinic over accessing it at a pharmacy. Duration of effectiveness was the most important preference attribute, with a high preference for less frequent dosing but with longer prevention. Since dosing frequency constituted the most important attribute, this highly influenced preference for a long-acting PrEP. Seventy-five percent of respondents expressed a preference for LAI every two months over daily oral PrEP. This preference was reported by both males and females across all age groups and educational categories. The preference for LAI PrEP was irrespective of the number of sexual partners in the past 12 months, disclosure of PrEP use to partners and condom use practices.^{20,21} Regarding the injection site, most participants in the iPrevent study in South Africa preferred the arm as the insertion site for the injectable All youth preferred product insertion in the arm, though females disliked insertion in the thigh.^{20,21}

Current biomedical HIV prevention option in Tanzania is oral PrEP pill. Though it is very effective, it faces substantial adherence challenges. End-user involvement in planning new HIV prevention methods is important to attain high levels of uptake and adherence.²⁰ Notwithstanding diverse HIV interventions, effective strategies to prevent HIV among young women in many sub-Saharan Africa countries, including Tanzania are lacking.^{1,23–25} LAI PrEP is yet to be approved and initiated in Tanzania for the prevention of HIV transmission. Studies on LAI PrEP in Tanzania are few and focused on general HIV risk and prevention preferences.^{10,12,26} Qualitative inquiry into potential users' preferences in terms of type, dosing, injection site and delivery modality as well as concerns to inform decision-making for initiation of LAI PrEP services for this at-risk population group is crucial. Therefore, this study aimed to explore preferences and concerns for LAI PrEP among female barmaids in Ubungo, Dar es Salaam.

Materials and Methods

Study Design

This qualitative case study was a formative inquiry for initiation of LAI PrEP among the female barmaids in Ubungo municipality in Dar es Salaam. It was conducted under the Barmaids PrEP project that aimed to demonstrate an effective model for the initiation and retention of PrEP. Female barmaids were recruited in the project for oral PrEP pills initiation and follow-up for six months.²³ The main aim of this study was to explore preferences for and concerns about the use of LAI HIV PrEP, focusing on dosage, delivery models and concerns about PrEP. An in-depth interview guide with semi-structured interviews was used to gather information from selected participants.^{27–30}

Study Setting

The study was conducted in the Ubungo municipality, formerly a part of Kinondoni district. The municipality lies between 6.7934° South, and 39.2104° East and has a total area of 260.40 square kilometers. According to the 2016 population projection, Ubungo Municipal has a total population of 1,031,349 where males are 499,161 (48.4%) and females are 532,188 (51.6%) with a growth rate of 5% per annum. It is a gate to the city center and as a former part of Kinondoni municipality is well known as an entertainment hotspot in Dar es Salaam city. It is bordered by Kinondoni in the North and East and Ilala to the South, which also has many entertainment services.³¹ The municipality has fourteen wards and about 360 bars in total.³² Often, the bars are open at 16:00 hours, and some run until midnight. Some bars provide service beyond midnight because they have nightclubs attached.

Ubungo municipality is among the beneficiaries of ongoing PrEP interventions in Tanzania where oral PrEP is being provided to high-risk population groups including female barmaids. This has made this area a suitable place to conduct a study on LAI PrEP preferences to inform policy makers on the needs of this population group.²³ This municipality has about 230 healthcare facilities including public and private-owned. Of these, 26 are actively providing oral PrEP with 8 more viable. Generally, there are about 34 healthcare facilities can be utilized for LAI PrEP services.³¹

Study Population

This study involved adolescents and young women aged 18 years and above who were barmaids in Ubungo municipality. Studies have reported the average age for female barmaids in Tanzania to range between 24.3 and 30 years.^{10,12} This group is among the high risk population for HIV infection because of age and sex as well as bar work career.^{33,34} Barmaid work is mostly done by adolescents and young women in their early 20s and mid-30's.¹² Young women are preferred for provision of bar services because the majority of the clients who are men prefer to be served by adolescents and young women. Clients prefer approach these young women for sex, sometimes the clients would forcibly take them away for some days, the practices which increase the risk of HIV infection among this group significantly. The rate of HIV infection in 2023 was 0.24% among women aged 15 years and older.³⁵ The prevalence of HIV among women was higher (5.6%) than among men (3.0%). The study conducted in 2017 in Ubungo found that about 7% tested positive for HIV.¹⁰

Notwithstanding the interventions to reduce HIV rate, adherence to oral PrEP pills was low among the barmaids due to pills characteristics like size, side effects and daily pill fatigue.³⁶ Therefore, this group needs more tailored HIV prevention services which is flexible. Understanding their preferences for HIV LAIs is important to increase the prevention options.

Sampling Technique, Sample Size and Selection Strategy

Purposeful sampling was employed to select eligible female barmaids for participation in this study. A total of 17 female barmaids aged 18 years and above, who were full-time employees and had been working in bars for three months or more, including users and non-users of oral PrEP pills were invited to participate in interviews for this study. The interviewees whose managers refused their participation in the study, those unwilling to participate in the interviews and those who were drunk were excluded from the study. Interviewees were selected from bars in Sinza, Ubungo, Mburahati, Mbezi, Goba, Mabibo and Manzese wards. Criterion sampling was used to select rich-informed cases to be interviewed in-depth to assess breadth and similarity in data.³⁷ The determination of the actual sample was guided by the saturation principle. Saturation was ensured through a selection of appropriate participants based on pre-determined criteria and conducting interviews to the point that information was repeating.^{38,39}

Participants were reached through the bar managers, who gave access to their premises and permission to talk to their employees. The research guides were the community-based volunteers known as PrEP champions working in existing PrEP interventions in Ubungo municipality selected the researchers to select appropriate and eligible participants for the study with the support of bar managers.²³

Data Collection Method and Tool

Data were collected through in-depth interviews, a method suitable for case studies to understand how and why certain behaviours or phenomena occur to certain individuals (Dworkin, 2012). An in-depth interview guide with semi-structured open-ended questions was used to collect information from selected study participants.⁴⁰ The guide was developed in Kiswahili to ensure that all aspects were expressed clearly as they would be administered in the field. After thorough revisions, it was translated into English and back to Kiswahili language to ensure that constructs were used consistently.

The questions focused on interviewees' preferences for PrEP formulations [for non-users], preference between pills and injection and the reasons [for both users and non-users]. Dosage preferences, injection site, mode of delivery and concerns on injectable PrEP use were asked to both users and non-users. Also, the guide had follow-up questions on the reasons for participants' responses. The data collection tool was pre-tested among the barmaids in the wards in the same municipality but which were not involved in the study.

Data Collection Procedures

Preparation for data collection began in December 2023 with the revision of data collection tools and visiting data collection areas. Recruitment of research assistants was done in January 2024. Three research assistants, two with Bachelor's degrees in sociology and one nurse with four years' experience in conducting qualitative interviews interviewed by the research team to assess their capability to collect data for this study. They were trained for four days by the research team, including two invited external qualitative experts. Training included reviewing and pre-testing the tool to ascertain the appropriateness of the questions, strengthening research skills, building rapport and probing appropriately.

Data collection begun in the last week of February in 2024 and lasted for two weeks due to the appointments process from the bar managers to get access to the potential interviewees. Interviews were conducted in the executive lounge in the bars or the project car depending on the preference of the interviewees. Interviews were done in the morning hours or early afternoon when the barmaids were not providing services.

The interviews were conducted in Kiswahili language, a widely spoken language in the Tanzanian population. Appointments were set by the field guides who are community volunteers for PrEP services in Ubungo municipality. They visited the bars a week before the interview dates to inform the bar manager and the prospective participant about the interview and asked for interview appointments. Interviews lasted for about 55 minutes with an average of two interviews per day. Interviewers asked the interviewees for permission to audio-record the interview proceeding before the interview began. Additionally, notes were taken for reference. We reached saturation with the 15th interview so, ended at the 17th interview.

Trustworthiness

The principles of credibility, confirmability, dependability, and transferability throughout the designing and implementation of this study to ensure rigor as follows;

Credibility

In qualitative inquiry, multiple realities exist due to researchers' personal experiences and viewpoints.^{27,41,42} So, to ensure that findings are accurate and truly represent interviewees' views, different people collected data, verbatim transcription was done and findings were reviewed by all authors. Triangulation was done through selection of interviewees from different wards and bars, users and non-users of oral PrEP. Also, debriefing sessions were held between researchers and interviewees to ensure that findings accurately presented the perspectives of the interviewees.

Confirmability

Good rapport was established through long engagement with prospective interviewees to increase trust between the researchers and interviewees.^{41,43} All the interviews were audio-recorded, with the consent of the interviewees. Detailed notes were also taken during each interview to serve as reference for clarification of audio data. Data collection, transcription of audio and translation of transcripts was done by different research experts to ascertain the objectivity of the data.

Dependability

Data collection tools for this study were developed after reviewing the literature on this topic from different sources and consulting different stakeholders working in PrEP programs. Data was collected in Kiswahili language, and the tools were revised by all authors and pre-tested before data collection. Verbatim transcription of audios was done and transcripts were reviewed for accuracy. The codebook was developed using the themes obtained after reading the transcripts several times. The codebook was reviewed by the research supervisor before coding. Coded data was also reviewed by research supervisors before summarizing the findings. In addition, findings were reviewed by other invited qualitative researchers to ensure that the voices of the interviewees were sufficiently presented.

Transferability

This refers to how the researcher facilitates judgment by users through thick description.⁴² The study design, setting, sample selection and data collection ensured that the findings of this study are transferable. The barmaids in Ubungu are from almost all regions of Tanzania's mainland so their voices represent an average of this group in the country. Given their high mobility, barmaids across Tanzania have common characteristics. Therefore, the findings of this study can be transferred to other settings and interviewees with relatively the same characteristics to those of Ubungu municipality.

Data Management

Audio data were transferred to a password-protected computer while the notes were kept in opaque envelopes and sealed individually during fieldwork. The audios were reviewed for clarity and in case of clarity or probe queries, feedback was shared with research assistants during daily debriefing for clarification. All audio data and notes were labelled with the same code to enable tracking and reference under the same identifier code.

The Kiswahili audio data were reviewed for clarity and depth by the principal investigator before the transcription process. Verbatim transcription was used to capture the full context of the interviews. The transcripts were translated into English language by hired translators with Bachelor's degrees in Sociology and Nursing, each with at least experience of three years in transcribing qualitative research data for coding. The transcripts were then revised and compared by the principal investigator and research assistants for correctness and completeness of transcription. This process also involved identifying themes and sub-themes for codebook development. The Codebook was developed by the principal investigator and reviewed by the research supervisors.

Data Analysis

A thematic analysis approach was used in data analysis to identify key themes and patterns in the data.^{44,45} The process involved familiarization with the data through repeated reading, generation of initial codes, development of themes, revision, defining and labelling the themes, and summarizing the results. Since qualitative research is iterative, debriefing sessions with the field team, revision of audio data transcription, and writing notes of key issues were done by the principal investigator and research assistants during data collection to identify key themes and detect saturation.^{39,46} The codebook was reviewed by the research supervisors to ensure all themes and sub-themes were captured inductively.

The Transcribed data were uploaded into NVivo version 14 software by the principal investigator for coding and analysis. Coding was conducted by the principal investigator with the support of one research assistant, based on the themes and sub-themes outlined in the codebook. The Coded data were exported in word format for further analysis of the findings. The study team reviewed the codes to identify key themes, sub-themes, and patterns for report writing. An inductive approach was applied to accurately capture participants' views on preferences and concerns regarding the use of LAI PrEP for HIV prevention among populations at risk.

Ethical Considerations and Consent

Our study complied with the Declaration of Helsinki regarding the protection of human participants in research. We obtained ethical approval from the Tanzanian National Institute of Medical Research (NIMR/HQ/R.8a/Vol IX/3348), the Muhimbili University of Health and Allied Sciences Institutional Review Board (DA.282/298/01.C/) and Heidelberg University (S-687/2019) for this study. Permission to collect data in Ubungo Municipality was granted by the relevant authorities including the District Medical Officer.

An informed consent form was used to obtain for interviewees' approval for their participation in this study. The form explained the purpose of the study, emphasized voluntary participation, and clarified that refusal to participate would not affect their rights or access to benefits. Interviewees were informed that they could decline to answer any questions they found uncomfortable, and that they could withdraw from the study at any time. Interviewees were guaranteed confidentiality by using numbers and letters to label the data.

The benefits and risks of participation were clearly stated in the consent form. No incentives were provided to participants for their involvement in this study. The interviewees were asked to sign the consent form if they agreed to take part in the study. Minors who were encountered did not meet the criteria for selection, which included working in a bar for not less than three months. Therefore, they were not included in this study though they are prioritized for HIV prevention services as they fall within a population at risk as indicated in the national guidelines for the management of HIV and AIDS.⁴⁷

Written informed consent for participation in this study was sought from each participant individually before the interviews. In addition, informed consent included approval from the interviewees to publish anonymized findings from this study in peer-reviewed journals. Interviews were conducted in restrooms or executive areas within the bars away from the customers or in the project car to ensure maximum privacy. Interviews were conducted in their free time, typically when bar services had not resumed, especially in the morning. Interviewees were free to choose whether to be interviewed in the lounge room in larger bars or in the project car for bars with limited spaces. During the interviews, the rooms were kept closed and if someone entered the interview was paused until they left. The driver was asked to step out during the interview.

The interviewees were instructed not to share information about the interview with others. Audio recordings were stored on principal investigators' password-protected computer and written notes were kept in opaque envelopes in a secure, private office at the institution.

Findings

Socio-Demographic Characteristics of the Study Interviewees

Table 1 presents the characteristics of the study interviewees. A total of 17 female barmaids were interviewed, eight were PrEP users, and nine non-users. Interviewees were aged between 22 and 35 years [range=13 years]. The mean age of the

Table 1 Interviewees' Socio-Demographic Characteristics

S/n	Age [Years]	Participant Education	Work Experience [Months]	Prep Use Status	Participant ID
1.	35	Form IV	12	Non-user	IDI01_PrEP non-user
2.	27	Form IV	08	User	IDI02_PrEP user
3.	26	Form II	03	Non-user	IDI03_PrEP non-user
4.	33	Form IV	24	User	IID04_PrEP user
5.	32	Standard VII	12	Non-user	IDI05_PrEP non-user
6.	32	Standard VII	18	Non-user	IDI06_PrEP non-user
7.	25	Standard VII	12	Non-user	IDI07_PrEP non-user
8.	33	Standard VII	08	User	IDI08_PrEP user
9.	23	Standard VII	10	Non-user	IDI09_PrEP non-user
10.	26	Standard VII	12	User	IDI10_PrEP user
11.	32	Form IV	60	User	IDI11_PrEP user
12.	22	Standard VII	04	Non-user	IDI12_PrEP non-user
13.	30	Standard VII	58	Non-user	IDI13_PrEP non-user
14.	28	Form IV	08	User	IDI14_PrEP user
15.	32	Form II	36	User	IDI15_PrEP user
16.	34	Form IV	36	User	IDI16_PrEP user
17.	27	Form IV	06	Non-user	IDI17_PrEP non-user

interviewees was 29 years, and median age was 30. Nine of the 17 interviewees were in their early thirties and had worked for one year or more. Half of the interviewees had completed primary education. Nine had reached secondary level of education, of whom seven had completed it. Among the nine non-users, six had completed primary education. Among the eight PrEP users, six had completed secondary education.

General Views on PrEP Preference

Overall, the majority of the interviewees (11 out of 17) stated that they preferred long-acting injectable (LAI) as an alternative HIV protection method. Interviewees who were non-users of oral PrEP, which is currently offered in Tanzania, were asked whether they would consider alternative HIV prevention options. The Majority (five out of nine) indicated a preference for an alternative to oral PrEP, citing the high risk of HIV infection associated with their work in bars. When asked whether they would consider any form of PrEP, they expressed preference for PrEP because they believed it could effectively protect them from HIV infection, and therefore preferred injectable PrEP. The remaining four of the nine non-users of oral PrEP stated that they did not prefer any form of PrEP. Instead, they reported using condoms and other local strategies, such as applying coconut oil during sexual intercourse to avoid bruises which increase chances of getting HIV infection.

PrEP pill users were also asked whether they would prefer an alternative to oral PrEP. Most of them (six out of eight) indicated an alternative form of PrEP, specifically requesting the availability of injectable PrEP as a substitute for pills. The remaining users expressed a preference to continue using oral PrEP.

Preference Between Long-Acting Injectable PrEP and Pills

Interviewees, both oral PrEP pill users and non-users, were asked to explain their preference for either long-acting injectable (LAI) or oral PrEP pills. Most of them (n=11) expressed their preference for LAI PrEP, stating that if given both options they would choose injectable PrEP. Those who preferred injectables over pills provided several reasons ranging from personal preferences to the characteristics of the medication. They explained that they are afraid of swallowing the pills daily and therefore preferred injectables, which are administered less frequently—monthly or every few months. Some interviewees also believed that offering injectable PrEP would increase the number of clients using PrEP services.

Interviewees who said that they do not prefer PrEP pills cited daily pill fatigue, side effects, difficulty swallowing the pill, and the sensation that the pill gets stuck in the throat. One participant said,

I would prefer the injectable Frankly, I find the pills not friendly to me. Even when I fall sick, I ask the doctor to give me an injection. I cannot swallow the pills. Pills don't affect me but I see it is better I am given injection and finish than pills. I am used to injections. (IDI01, PrEP pills non-user)

In addition, some interviewees expressed a general dislike for pills—especially those that must be taken—and therefore preferred injections. They explained that taking pills every day is a challenge for them as attested by this interviewee;

I should be worried about the pills because first of all, I don't like swallowing the pills. I just fear to swallow the pills, I fear the pills. (IDI03, PrEP non-user)

A few interviewees who were afraid of injections [any] stated that they liked the idea of injectables but would prefer PrEP pills if they did not have to be taken daily. They said if the pills were taken sporadically they would prefer them, since they believed that the side effects of pills withdraw faster than those of the long-acting injections. For example, one participant commented,

I think the injectable is the method that fits me easily. If there happens another method, even if it is pills that you swallow two pills today or one pill after some months or two months it would also be better. (IDI 04, PrEP pills -user)

Generally, the majority of the interviewees preferred injectable over pill PrEP because of more freedom, secrecy and user discretion. Those who preferred pills did not prefer daily pills.

Motivations for Injectable PrEP Preference

Several reasons were provided with regard to the preference for LAI PrEP. Interviewees argued that PrEP injections will help to do the following;

Address the challenge of memory issues for people like the drunkard who have unpredictable settlement and memory issues in taking pills daily. They felt that because the injection is not a daily dose. Also, they felt that with injection, users would be able to freely plan their schedules without the worry of remembering a daily pill. They expressed their preference for injection because it takes time to repeat the injection as compared to pills that one should take every day.

The use of long-acting injectable (LAI) PrEP helps maintain users' privacy and confidentiality. Unlike PrEP pills, which must be carried and taken daily—often drawing attention due to the sounds of the pill bottle—LAI PrEP does not require daily handling or visible storage. Interviewees explained that carrying pills can raise questions from others, making people suspicious about users' HIV status. In contrast, injectable PrEP is viewed as more discreet, as it is less likely to reveal the user's HIV prevention behavior. Participant therefore considered LAI PrEP to offer greater confidentiality than oral PrEP.

According to the interviewees, injectable PrEP increases flexibility in engaging in sexual activity because it is less affected by adherence issues compared to daily pills. They explained that individuals who take pills inconsistently may feel unsafe, since they cannot predict when they might have sexual encounters. Interviewees also emphasized that forgetting to take PrEP pills before having unprotected sex increase the risk of HIV infection. In contrast, they believed that injectable PrEP offers continuous protection, providing peace of mind regardless of the timing of sexual activity.

The interviewees believed that injectable PrEP may have fewer side effects compared to oral pills, and if side effects do occur, there are likely to be short-lived. Therefore, they expressed a willingness to try the injection first, and if the side effects were intolerable, they would consider switching to tablets.

PrEP pill users shared their reasons for preferring injectable PrEP over oral pills. They reported experiencing several side effects from the pills, including nausea, dizziness, increased hunger, tiredness, and fatigue. As a result, they expressed a preference to try and experience injectable PrEP as an alternative.

They also said that they do not prefer PrEP pills because the daily pill is highly affected by forgetting. The daily schedules and unpredictable shifts make it difficult to cope with a daily PrEP pill. Sometimes they do not have time to go home as predicted, so it is a challenge if someone has a daily pill and it was left at home. Also, they shared their alcohol intake behavior, where they said that most days they drink, oversleep, and forget to take the pills. Sometimes they sleep over at someone who took them for sex, so this also makes them not take pills daily as prescribed.

The interviewees recounted that taking pills daily can raise suspicion among friends, as it resembles the routine of individuals on antiretroviral therapy (ART) for HIV treatment. This association contributes to stigma, especially because PrEP pills are often stored in containers that resemble those used for ART. As a result, individuals taking PrEP pills may be perceived as HIV-positive.

One participant narrated,

I am not worried about PrEP injection, but I am afraid of the PrEP pills, not injectable I don't like swallowing the pills. I am just afraid of even taking the pills. Also, the way those pills look like those of people living with HIV. I will be so happy with the injections because I fear the pills so much. The injection is better for me, they should inject me than giving the pills. (IDI 03, PrEP pills non-user)

Injection Dosage, Duration and Site

A monthly injection dose was also preferred by some interviewees. They explained that they would rather begin with monthly injections to monitor for potential side effects and assess the tolerability of the injection before transitioning to a longer dosing interval.

They felt it was important to first understand how their body reacts to the injection, making a one-month dose more appealing than starting with a three-month dose. Some interviewees also questioned the effectiveness of a three-month injection and expressed concern that they might forget the scheduled date. In contrast, they believed that a monthly injection would be easier to remember and manage. One participant said,

I prefer a monthly PrEP injection because I feel like three months will not work in the body. I prefer a monthly injection. Three months will be late. (IDI13, PrEP pills non-user)

Eight out of the seventeen interviewees stated that they preferred three-monthly PrEP injections to align with their family planning injection schedule. They also noted that receiving an injection every three months was more acceptable due to fears of discomfort from more frequent injections.

Regarding the injection site, interviewees expressed varied preferences. Some preferred receiving the injection in the thigh, others in the buttock, and some in the upper arm. A few interviewees were flexible and said they would accept any injection site prescribed by healthcare providers. For example, one admitted,

Anywhere, on the upper arm, buttock, and arms. I am ready for any injection site, but I prefer an injection on the upper arm. (IDI03, PrEP pills non-user)

Some interviewees explained that they do not prefer buttock injections because it is painful. The majority of the interviewees preferred injection in the upper arm.

Model of Delivery

Some interviewees believed that they could receive the injection service wherever it was available—whether at a healthcare facility or in selected community spots. Their flexibility was driven by their willingness to use the injectable

PrEP, and they stated that they would go anywhere to receive the injection once they had made the decision to use it. Others suggested that injectable PrEP services should be offered both at the healthcare facilities and in community spots to accommodate individuals with strict schedules and improve access to the services.

Healthcare facility preference for PrEP injection among some interviewees was influenced by the need to get the service on time, because when a client goes to the facility, they are sure to get it at that time. According to the interviewees who preferred receiving the injection from the healthcare facility, they said that having an injection at the hospital makes it easier to manage complications than if it were in the community. One non-user reiterated,

I can follow PrEP injections even at the healthcare facility. I will follow it because waiting for it to be brought here I will experience delays. It is better if I follow it on my own. (IDI 13, PrEP non-user)

Interviewees also stated that receiving the injection at a healthcare facility enhances privacy, as no one would know the specific reason for their visit. They explained that this setting helps avoid stigma from people who might otherwise see them taking PrEP pills and label them “mwathirika” [someone living with HIV]. They argued that receiving PrEP injections in community settings could compromise their privacy, as it might expose their health-seeking behavior to others in the neighborhood. Additionally, some felt that being approached in the community could pressure them into accepting services, which they viewed as a violation of their freedom of choice. The interviewees emphasized that offering the service at healthcare facilities allows individuals to decide for themselves and seek care voluntarily after assessing their own needs. One participant recounted,

I would prefer the services to be provided in the healthcare facility only. If someone brings the service maybe at your workplace instead of you following it, how do you decline? You can't. So, I am ready, but services in the community may raise questions like what you are using, and it will be a challenge. I should follow it because it means I have decided to use PrEP and I have not been forced by anyone. It is better when you have decided to do something, you go for an injection on your own. (IDI 04, PrEP user)

Few interviewees preferred to receive injectable PrEP services in the community, while others expressed a general preference for receiving the service anywhere except at the hospital. Their preference for community-based services was primarily driven by convenience, given the unpredictable nature of their work schedules. Additionally, they appreciated the supportive and friendly approach of the service providers and community volunteers who also distribute PrEP pills.

Preference for community-delivered LAI PrEP was influenced by feelings of contempt related to visiting the healthcare facility, tight schedules, especially for those who live in the bar premises, and difficulties in asking for permission from their employers. On another account, some interviewees said that they would prefer to go to the facility because they would use the morning free time to go to the healthcare facility for PrEP injection services. One participant had this to share:

No issues, the work schedule is there. The work schedules show we start at 04:00 pm. You should go to the hospital in the morning, not in the evening. You should go between 08:00 am and 09:00 am, it is the time when the services are opening and providers are working. (IDI 10, PrEP pills user)

Concerns About the Use of LAI PrEP

Interviewees were asked to share their concerns about the use of long-acting injectable (LAI) PrEP for HIV prevention among people at high risk. Many interviewees reported having no concerns about using injectable PrEP, stating that they trust healthcare providers will not believe they would offer something harmful to clients. Others expressed confidence that the PrEP injection would be as safe and effective as oral pills in preventing HIV.

Interviewees also stated that they were not worried about using PrEP because they see it as a way to protect their health. They believe that clinical assessments— such as kidney function, hepatitis B and HIV screening— conducted prior to PrEP administration help ensure the drug's safety. PrEP does not affect them. As a result, they felt reassured and confident in using PrEP to prevent HIV infection.

A few interviewees expressed concerns about the effectiveness of injectable PrEP in terms of protecting against HIV infection. Those who raised such concerns also indicated that they might not be willing to use it because, as they perceived the injection to still be in a trial phase, similar to other ongoing clinical trials. One participant accounted,

My worry about these injectables is if they are on trial, because many people will tell you, 'this thing is on trial'. Even the doctor told us 'a condom is something on trial also'. Those [PrEP] injectables should be approved and not a trial injection on our bodies, such that our bodies swell when injected. (IDI 02, PrEP pills user)

Side effects of the PrEP injection were among the concerns raised by the interviewees. Those who had experience with PrEP pills were more concerned about whether the injection had adverse effects like those of PrEP pills, where fatigue, nausea, dizziness, and increased hunger were reported. Others felt that LAI PrEP may have side effects like that of injectable contraceptives, which they said they heard from the community members that they may cause cancer. They argued that injectable PrEP should not be like contraceptive injections that are perceived to cause intrauterine benign. Interviewees also said they are concerned if the benefits do not outweigh the risks of using the injectable PrEP. They added that they foresee the risk of increased unsafe sex practices due to the use of PrEP.

Generally, most interviewees expressed no concerns about the use of LAI PrEP. Few interviewees were concerned with prevention effectiveness, side effects as experienced in PrEP pills and an increase in unprotected sex among PrEP users.

Discussion

We aimed to explore female barmaids' opinions on preferences for PrEP and concerns about the use of LAI PrEP as a potential for widening the biomedical HIV prevention strategies.

Most interviewees preferred LAI over oral PrEP, as they were concerned about the pill size and the daily regime. Interviewees highlighted the advantages of long-acting PrEP, including more discretion, fewer side effects, prolonged prevention, and no daily pill fatigue. Other studies in Sub-Saharan Africa and Asian countries have reported preferences for long-acting PrEP among different population groups at risk of HIV, with the preference for injectable being a result of dislike for the pill burden, including side-effects.^{21,48–55} This indicates a high preference for different population groups at risk globally, given the experiences with the challenges of taking oral PrEP. LAI PrEP has been approved by the WHO globally,¹ and therefore countries including Tanzania should initiate LAI PrEP to increase HIV prevention methods given the high preference expressed by populations at risk.

The majority of oral PrEP pills non-users expressed no preference for any form of PrEP, while oral PrEP-users expressed high interest in long-acting PrEP because they feel not at risk of HIV. This is similar to another study carried out in the same area in 2017, in which one of the 56 interviewees expressed no interest in PrEP.¹⁰ This implies that some people may be unaware of the risk and exposure they have. Therefore, health education, risk analysis and HIV promotion services should be strengthened to address risky behaviours and PrEP uptake.

Three-month injection dosage was preferred by most interviewees regardless of their PrEP use status, while some preferred PrEP injection on a monthly basis so they can monitor and control potential side effects effectively. Others were flexible on the prescribed injection schedule. Studies from the United States, Asia, and African countries have reported a two-month preference for LAI PrEP among both males and females.^{49,50,56,57} These findings suggest that many potential users of injectable PrEP would prefer to get PrEP injections even offered after a period of two to three months. This underscores the need for health education and promotion for the uptake of new biomedical HIV prevention methods.

Interviewees in our study preferred the health facilities mode for PrEP injection due to timely service, more privacy, and reduced stigma, while others cited community spots as a preferred provider mode due to its convenience, no contempt related to facility visits and friendly services given by community providers. Our findings are closely related to other studies in Brazil, where some interviewees perceived that it is expensive to go to the doctor every two months.⁴⁹ Community-based prevention services have the potential to increase uptake when provided by well-trained staff; however, it is affected by storage complications due to facility-community to follow PrEP clients. Community delivery should be made for healthcare services which do not require sophisticated storage.

Majority of our interviewees had no concerns about the use of long-acting PrEP. However, some feared that it could be a trial, may cause cancer and side effects mainly increased risky sexual behaviours among users. Findings from other studies in Asia, America and Africa have presented similar concerns about side effects and the injection being on the trial.^{22,50,56,57} In this regard, more health education and promotion programs, particularly the benefits of prevention, should be strengthened to increase uptake of injectable PrEP.

Limitations and Mitigations

Data was collected through face to face interviews, where interviewees may have provided socially desirable responses. In such setting, participants are more likely to give answers that portray them in a positive light. However, long engagement with interviewees prior to data collection—a long with clear explanation of the study's purpose, including reading each section of the informed consent form aloud—helped build trust and ensure that participant provided genuine opinions regarding their preferences and concerns about the use of long-acting injectable (LAI) PrEP.

Conclusions

The majority of both oral PrEP pill users and non-users expressed strong preference for long-acting injectable (LAI) PrEP, highlighting its convenience and discretion. A few interviewees raised concerns about the injectable being in a trial phase and potential side effects. The healthcare facility model was the most preferred mode of LAI PrEP service delivery. Our findings suggest that LAI PrEP may help overcome the challenges associated with oral PrEP including adherence since it addresses the need for a more tailored approach for FBWs and other at-risk groups in Tanzania. We therefore call upon the government, through the Ministry of Health and in collaboration with development partners, to consider introducing LAI PrEP as part of efforts to expand biomedical prevention of HIV in Tanzania.

Consent to Participate

All interviewees in this study participated voluntarily and signed informed consent before participation.

Consent to Publish

All interviewees in this study consented for the publication of findings. The participants' informed consent included publication of anonymized "responses/direct quotes."

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Disclosure

All authors declare that there is no conflict of interest in this work.

References

1. Delany-Moretlwe S, Hughes JP, Bock P, et al. Cabotegravir for the prevention of HIV-1 in women: results from HPTN 084, a Phase 3, randomised clinical trial. *Lancet*. 2022;399(10337):1779–1789. doi:10.1016/S0140-6736(22)00538-4
2. Ministry of Health, Community Development, Gender, Elderly and Children. Tanzania-Health-Sector-Strategic-Plan-IV-2015-2020. Health Sector Strategic Plan (HSSP IV). Available from: <https://www.prb.org/wp-content/uploads/2020/06/Tanzania-Health-Sector-Strategic-Plan-IV-2015-2020-1-4.pdf>. Accessed July 29, 2025.
3. Ministry of Health, Community Development, Gender, Elderly and Children. (2021). Tanzania-Health-Sector-Strategic-Plan-V-2021. Available from: <https://mitu.or.tz/wp-content/uploads/2021/07/Tanzania-Health-Sector-Strategic-Plan-V-17-06-2021-Final-signed.pdf>. Accessed July 29, 2025.
4. Fonner VA, Ridgeway K, van der Straten A, et al. Safety and efficacy of long-acting injectable cabotegravir as preexposure prophylaxis to prevent HIV acquisition. *AIDS*. 2023;37(6):957. doi:10.1097/QAD.0000000000003494
5. WHO. (2022). *WHO recommends long-acting cabotegravir for HIV prevention*. World Health Organization. Available from: <https://www.who.int/news/item/28-07-2022-who-recommends-long-acting-cabotegravir-for-hiv-prevention>. Accessed July 29, 2025.

6. Lorenzetti L, Dinh N, van der Straten A, et al. Systematic review of the values and preferences regarding the use of injectable pre-exposure prophylaxis to prevent HIV acquisition. *J Int AIDS Society*. 2023;26(S2):e26107. doi:10.1002/jia2.26107
7. Meyers K, Rodriguez K, Moeller RW, Gratch I, Markowitz M, Halkitis PN. High interest in a long-acting injectable formulation of pre-exposure prophylaxis for HIV in young men who have sex with men in NYC: a P18 cohort substudy. *PLoS One*. 2014;9(12):e114700. doi:10.1371/journal.pone.0114700
8. UNAIDS. 2023 UNAIDS global aids update. UNAIDS. Available from: https://thepath.unaids.org/wp-content/themes/unaids2023/assets/files/2023_report.pdf. Accessed July 29, 2025.
9. USAID. Tanzania HIV/AIDS Fact Sheet | Fact Sheet | Tanzania. U.S. Agency for International Development. Available from: <https://www.usaid.gov/tanzania/fact-sheet/jun-13-2023-tanzania-hiv-aids-fact-sheet>. Accessed July 29, 2025.
10. Harling G, Muya A, Ortblad KF, et al. HIV risk and pre-exposure prophylaxis interest among female bar workers in Dar es Salaam: cross-sectional survey. *BMJ Open*. 2019;9(3):e023272. doi:10.1136/bmjopen-2018-023272
11. Lwihula G, Outwarter A. Sexually transmitted diseases in Mwanza, Tanzania: risk, beliefs, health care seeking behaviour, and responses. *East African J Public Health*. 2007;3(1):1–7. doi:10.4314/eajph.v3i1.38962
12. Hoffmann O, Zaba B, Wolff B, et al. Methodological lessons from a cohort study of high risk women in Tanzania. *Sexually Transmitted Infections*. 2005;80(2):ii69–73. doi:10.1136/sti.2004.011908
13. Abdool Karim Q, Baxter C, Bix D. Prevention of HIV in adolescent girls and young women: key to an AIDS-free generation. *J Acquired Immune Deficiency Syndromes*. 2017;75(1):S17–S26. doi:10.1097/QAI.0000000000001316
14. Abdool Karim Q, Havlir D, Phanuphak N. Putting women in the centre of the global HIV response is key to achieving epidemic control! *J Int AIDS Society*. 2020;23(3):e25473. doi:10.1002/jia2.25473
15. Chittamuru D, Frye V, Koblin BA, et al. PrEP Stigma. *HIV Stigma Intention Use PrEP Among Women New York City Philadelphia Stigma Health*. 2020;5(2):240–246. doi:10.1037/sah0000194
16. Sidebottom D, Ekström AM, Strömdahl S. A systematic review of adherence to oral pre-exposure prophylaxis for HIV – how can we improve uptake and adherence? *BMC Infect Dis*. 2018;18(1):581. doi:10.1186/s12879-018-3463-4
17. Amico KR, Wallace M, Bekker L-G, et al. Experiences with HPTN 067/ADAPT study-provided open-label PrEP among women in Cape Town: facilitators and barriers within a mutuality framework. *AIDS Behav*. 2017;21(5):1361–1375. doi:10.1007/s10461-016-1458-y
18. Corneli A, Perry B, McKenna K, et al. Participants' Explanations for Nonadherence in the FEM-PrEP Clinical Trial. *J Acquir Immune Defic Syndr*. 2016;71(4):452–461. doi:10.1097/QAI.0000000000000880
19. Virginia F, Ridgeway K, Dinh N, Rodolph M, Schaefer R, Baggaley R. Long-acting injectable cabotegravir for HIV prevention. 2022.
20. Minnis AM, Atujuna M, Browne EN, et al. Preferences for long-acting Pre-Exposure Prophylaxis (PrEP) for HIV prevention among South African youth: results of a discrete choice experiment. *J Int AIDS Society*. 2020;23(6):e25528. doi:10.1002/jia2.25528
21. Siedner MJ, Hetteema A, Hughey A. Preference for injectable over oral HIV pre-exposure prophylaxis in public-sector primary-care clinics in Swaziland. *AIDS*. 2018;32(11):1541–1542. doi:10.1097/QAD.0000000000001859
22. Tolley EE, Li S, Zangeneh SZ, et al. Acceptability of a long-acting injectable HIV prevention product among US and African women: findings from a phase 2 clinical Trial (HPTN 076). *J Int AIDS Society*. 2019;22(10):e25408. doi:10.1002/jia2.25408
23. Chebet JJ, Akyoo WO, Goymann H, et al. Demonstrating service delivery models for effective initiation and retention on pre-exposure prophylaxis (PrEP) among female bar workers in Dar es Salaam, Tanzania: a double randomized intervention study protocol. *PLoS One*. 2024;19(6):e0304077. doi:10.1371/journal.pone.0304077
24. Cohen SE, Vittinghoff E, Bacon O, et al. High interest in pre-exposure prophylaxis among men who have sex with men at risk for HIV-infection: baseline data from the US PrEP demonstration project. *J Acquired Immune Deficiency Syndromes*. 2015;68(4):439–448. doi:10.1097/QAI.0000000000000479
25. Liu A, Glidden DV, Anderson PL, et al. Patterns and correlates of PrEP drug detection among MSM and transgender women in the global iPrEx Study. *J Acquired Immune Deficiency Syndromes*. 2014;67(5):528–537. doi:10.1097/QAI.0000000000000351
26. Lichtwarck HO, Mbotwa CH, Kazaura MR, Moen K, Mmbaga EJ. Early disengagement from HIV pre-exposure prophylaxis services and associated factors among female sex workers in Dar es Salaam, Tanzania: a socioecological approach. *BMJ Global Health*. 2023;8(12):e013662. doi:10.1136/bmjgh-2023-013662
27. Lincoln YS, Guba EG. *Naturalistic Inquiry*. SAGE; 1985.
28. Stake RE. Qualitative case studies. In: *Strategies of Qualitative Inquiry*, 3rd Ed. Sage Publications, Inc; 2008:pp.119–149.
29. Tenny S, Brannan JM, Brannan GD. Qualitative Study. In: *StatPearls*. StatPearls Publishing; 2024.
30. Cleland JA. The qualitative orientation in medical education research. *Korean J Med Educ*. 2017;29(2):61–71. doi:10.3946/kjme.2017.53
31. Ubungo Municipal. (2016). *Ubungo Municipality Profile.pdf*. Ubungo Municipality. Available from: www.ubungomc.go.tz. Accessed July 29, 2025.
32. Ubungo Municipal Council. Available from: <https://ubungomc.go.tz/history>. Accessed July 29, 2025.
33. McDonagh J, Ambresin A-E, Boisen K, et al. The age of adolescence...and young adulthood. *Lancet Child Adolesc Health*. 2018;2(4):e6. doi:10.1016/S2352-4642(18)30079-8
34. Sawyer SM, Azzopardi PS, Wickremarathne D, Patton GC. The age of adolescence. *Lancet Child Adolesc Health*. 2018;2(3):223–228. doi:10.1016/S2352-4642(18)30022-1
35. NBS. The Tanzania HIV impact survey 2022-2023. Available from: https://www.nbs.go.tz/nbs/takwimu/THIS2022-2023/THIS2022-2023_Summary_Sheet.pdf. Accessed July 29, 2025.
36. Akyoo WO, Mosha IH, Jahn A, Mpembeni R. “Any time because I am ready”: willingness to use long-acting injectable HIV PrEP among female barmaids in Dar es Salaam, Tanzania. *Front Public Health*. 2025;13:1511801. doi:10.3389/fpubh.2025.1511801
37. Palinkas LA, Horwitz SM, Green CA, Wisdom JP, Duan N, Hoagwood K. Purposeful sampling for qualitative data collection and analysis in mixed method implementation research. *Admin Policy Mental Health*. 2015;42(5):533–544. doi:10.1007/s10488-013-0528-y
38. Morse JM. “Data Were Saturated. *Qualitative Health Research*. 2015;25(5):587–588. doi:10.1177/1049732315576699
39. Saunders B, Sim J, Kingstone T, et al. Saturation in qualitative research: exploring its conceptualization and operationalization. *Qual Quantity*. 2018;52(4):1893–1907. doi:10.1007/s11135-017-0574-8
40. Boyce C, Neale P. Conducting In-depth Interviews. 2006.

41. Noble H, Smith J. Issues of validity and reliability in qualitative research. *Evidence Based Nurs.* 2015;18(2):34–35. doi:10.1136/eb-2015-102054
42. Stalmeijer RE, Brown MEL, O'Brien BC. How to discuss transferability of qualitative research in health professions education. *The Clin Teach.* 2024;21(6):e13762. doi:10.1111/tct.13762
43. Rose J, Johnson CW. Contextualizing reliability and validity in qualitative research: toward more rigorous and trustworthy qualitative social science in leisure research. *J Leisure Res.* 2020;51(4):432–451. doi:10.1080/00222216.2020.1722042
44. Braun V, Clarke V. Reflecting on reflexive thematic analysis. *Qual Res Sport Exerc Health.* 2019;11(4):589–597. doi:10.1080/2159676X.2019.1628806
45. Braun V, Clarke V. One size fits all? What counts as quality practice in (reflexive) thematic analysis? *Qual Res Psychol.* 2021;18(3):328–352. doi:10.1080/14780887.2020.1769238
46. Hennink M, Kaiser BN. Sample sizes for saturation in qualitative research: a systematic review of empirical tests. *Soc sci med.* 2022;292:114523. doi:10.1016/j.socscimed.2021.114523
47. Ministry of Health and Social Welfare. National guidelines for the management of HIV and AIDS. Available from: https://differentiatedserviceedelivery.org/wp-content/uploads/national_guidelines_for_the_management_of_hiv_and_aids_2019.pdf. Accessed July 29, 2025.
48. Cholo FA, Dada S, Martin CE, Mullick S. Experiences of oral pre-exposure prophylaxis use among heterosexual men accessing sexual and reproductive health services in South Africa: a qualitative study. *J Int AIDS Society.* 2024;27(5):e26249. doi:10.1002/jia2.26249
49. John SA, Zapata JP, Dang M, et al. Exploring preferences and decision-making about long-acting injectable HIV pre-exposure prophylaxis (PrEP) among young sexual minority men 17–24 years old. *Sci Rep.* 2023;13(1):5116. doi:10.1038/s41598-023-32014-8
50. Koechlin FM, Fonner VA, DalGLISH SL, et al. 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 Behav.* 2017;21(5):1325–1335. doi:10.1007/s10461-016-1627-z
51. Long L, Galizzi M. (2023, July 19,). Adult South African men preferences for HIV Pre-Exposure Prophylaxis (prep): a discrete choice experiment comparing Long acting injectable versus daily oral tablet. *HERO*. Available from: <https://www.heroza.org/publications/adult-south-african-men-preferences-for-hiv-pre-exposure-prophylaxis-prep-a-discrete-choice-experiment-comparing-long-acting-injectable-versus-daily-oral-tablet/>. Accessed July 29, 2025.
52. Meyers K, Wu Y, Qian H, et al. Interest in long-acting injectable PrEP in a cohort of men who have sex with men in China. *AIDS Behav.* 2018;22(4):1217–1227. doi:10.1007/s10461-017-1845-z
53. Nydegger LA, Kidane H, Benitez S, Yuan M, Claborn KR. A qualitative exploration of PrEP interests, barriers, and interventions among black and latina cisgender women in the U.S. *Arch Sexual Behav.* 2023. doi:10.1007/s10508-023-02712-5
54. Shapley-Quinn MK, Manenzhe KN, Agot K, Minnis AM, van der Straten A. “We are not the same”: African women’s view of multipurpose prevention products in the TRIO clinical study. *Int J Women’s Health.* 2019;11:97–107. doi:10.2147/IJWH.S185712
55. Toska E, Zhou S, Chen-Charles J, Gittings L, Operario D, Cluver L. Factors associated with preferences for long-acting injectable antiretroviral therapy among adolescents and young people living with HIV in South Africa. *AIDS Behav.* 2023;27(7):2163–2175. doi:10.1007/s10461-022-03949-2
56. Pereira C, Torres TS, Luz PM, et al. Preferences for pre-exposure prophylaxis (PrEP) among sexual and gender minorities: a discrete choice experiment in Brazil. *The Lancet Regional Health – Americas.* 2023;19:100432. doi:10.1016/j.lana.2023.100432
57. Rogers BG, Chan PA, Suttan-Coats C, et al. Perspectives on long-acting formulations of pre-exposure prophylaxis (PrEP) among men who have sex with men who are non-adherent to daily oral PrEP in the United States. *BMC Public Health.* 2023;23(1):1643. doi:10.1186/s12889-023-16382-4

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