

Supporting oral and long-acting HIV pre-exposure prophylaxis decision making among pregnant women in Lilongwe, Malawi: Protocol for the MyChoice intervention pilot trials

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Table of Contents

Original Manuscript.....	5
Supplementary Files.....	30
Multimedia Appendixes.....	31
Multimedia Appendix 0.....	31
Multimedia Appendix.....	31
Multimedia Appendix 0.....	31
Multimedia Appendix 0.....	31
Multimedia Appendix 0.....	31
Multimedia Appendix 0.....	31
Multimedia Appendix 0.....	31
Multimedia Appendix 0.....	31
CONSORT (or other) checklists.....	32
CONSORT (or other) checklist 0.....	32

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Abstract

Background: HIV pre-exposure prophylaxis (PrEP) has potential for preventing HIV during the perinatal period, but few strategies promote person-centred shared decision making (SDM) about PrEP use in these contexts. The MyChoice study aims to evaluate the feasibility, acceptability, and appropriateness of an SDM approach to support pregnant and breastfeeding women in Lilongwe, Malawi, integrating PrEP into antenatal care to encourage consistent use.

Objective: These pilot studies will assess the feasibility, acceptability, and appropriateness of a shared decision-making (SDM) intervention to pregnant and breastfeeding women in making informed HIV prevention choices. The intervention will also explore the intervention perspectives of both participants, their male partners and implementers. Each study compares the MyChoice intervention to standard-of-care PrEP counselling, with different HIV prevention method choices available.

Methods: We will conduct two randomized pilot trials to evaluate the MyChoice intervention, designed to support PrEP decision-making among pregnant women in Lilongwe. Both studies will compare the MyChoice intervention to standard-of-care PrEP counselling. In Study 1, 100 participants will be offered oral PrEP and condoms for 3 months. In Study 2, 50 participants will be offered oral PrEP or injectable CAB-LA, and condoms for 2 months.

Results: Data collection started 30 July 2024 for Study 1 and 10 February 2025 for Study 2. To date, data collection is ongoing.

Conclusions: The MyChoice pilot studies will provide critical evidence on a novel intervention for PrEP decision-making during pregnancy and breastfeeding. If feasible and acceptable, these results will form the basis for larger efficacy trials to promote PrEP uptake during pregnancy. Clinical Trial: NCT06394323 and NCT0639769

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Original Manuscript

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ABSTRACT

Background: HIV pre-exposure prophylaxis (PrEP) has potential for preventing HIV during the perinatal period, but few strategies promote person-centred shared decision making (SDM) about PrEP use in these contexts. The MyChoice study aims to evaluate the feasibility, acceptability, and appropriateness of an SDM approach to support pregnant and breastfeeding women in Lilongwe, Malawi, integrating PrEP into antenatal care to encourage consistent use.

Objectives: These pilot studies will assess the feasibility, acceptability, and appropriateness of a shared decision-making (SDM) intervention to pregnant and breastfeeding women in making informed HIV prevention choices. The intervention will also explore the intervention perspectives of both participants, their male partners and implementers. Each study compares the MyChoice intervention to standard-of-care PrEP counselling, with different HIV prevention method choices available.

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Conclusion: The MyChoice pilot studies will provide critical evidence on a novel intervention for PrEP decision-making during pregnancy and breastfeeding. If feasible and acceptable, these results will form the basis for larger efficacy trials to promote PrEP uptake during pregnancy.

Trial Registration numbers : NCT06394323 and NCT0639769

INTRODUCTION

HIV pre-exposure prophylaxis (PrEP) is a proven, yet substantially underutilized, tool to eliminate mother-to-child HIV transmission (eMTCT). In the context of high adherence, daily oral PrEP with tenofovir-emtricitabine is highly efficacious in preventing HIV infection¹⁻³, including among expectant mothers, and safe to use during pregnancy and breastfeeding.⁴ However, despite its promise, significant implementation challenges exist.⁵ Evidence suggests that PrEP may be highly acceptable among PrEP-naïve women without HIV, yet attrition and non-adherence are significant challenges for women using PrEP.⁶⁻¹⁰ Women in PrEP trials have had consistently poor adherence despite adherence support.¹¹ Promoting user fit may be critical to achieve prevention-effective PrEP use among pregnant and breastfeeding women.¹² Recent advancements in biomedical HIV prevention have introduced the injectable PrEP option of long-acting cabotegravir (CAB-LA). Injectable formulations may offer benefits that oral options do not, such as improved adherence and discreet use, particularly well-suited for pregnant and breastfeeding women with complex healthcare needs.^{13,14} Yet, use of injectable PrEP methods still requires user effort to return for repeat injections. Thus, engaging patients in the choice between different PrEP methods will still be critical to ensure proper engagement for persistence and adherence.

To ensure that medical decisions, such as the choice to use PrEP or not and which formulation to use, align with a patient's values and preferences, patient-centered counseling approaches like shared decision-making (SDM) are recommended. SDM is a collaborative process in which patients and clinicians work together to make informed healthcare choices.¹² Few SDM or other patient-centered approaches for PrEP decision counselling exist; those developed to date have focused on male and non-pregnant US-based populations.^{15,16} To address this gap, we developed the MyChoice intervention to support PrEP decision-making among pregnant women in the context of antenatal care in Malawi. MyChoice is a counselor-delivered intervention facilitated by a paper-based patient decision aid. We developed this intervention through formative work to understand women's values and preferences for PrEP decision-making in the context of pregnancy^{17,18} and user testing. Through this process, we developed two versions of the intervention: (1) one that only addresses oral PrEP as an option; and (2) another that addresses both daily oral PrEP and injectable CAB-LA as options. In parallel feasibility studies, we will evaluate the feasibility,

acceptability, and appropriateness of each version of the MyChoice SDM intervention to support informed decisions about different PrEP modalities during pregnancy in Lilongwe, Malawi.

METHODS

Study context

The MyChoice intervention was developed with input from women receiving antenatal care at Bwaila District Hospital in Lilongwe, Malawi. We completed extensive formative research with pregnant women, male partners, and clinicians from the study site to develop the intervention for these pilot studies. The findings from these studies (regarding women's values for PrEP decision-making, the implications of these values for feelings regarding PrEP use, and preferences for partner involvement¹⁷) as well as key guidelines (Ottawa Decision Support Framework¹⁹ and International Patient Decision Aid Standards²⁰) informed the development of the PrEP SDM intervention, known as MyChoice for HIV Prevention (MyChoice). The intervention was further refined through an iterative process of clinician and stakeholder feedback followed by feedback from 15 patient participants to refine the tool ahead of these pilot studies. Through this process, we developed the two versions of the intervention.

Study Location

This study will occur at a government health facility, Bwaila District Hospital, a high-volume district facility run by the Malawi Ministry of Health. Approximately 1,500 babies are delivered each month at Bwaila Hospital, and approximately 500 women present each month for immunization visits for their babies at 9 months after delivery. Bwaila Hospital has provided PMTCT services since April 2002 and has promoted male participation since 2007.

Target population

HIV-negative pregnant women are the primary population to be recruited for this study and will need to meet the following inclusion criteria: aged 18 years of age or older, have a documented pregnancy confirmed by a urine pregnancy test or physical exam, and have a documented HIV-negative status within the past three months (**Table 1**). Participants should have factors indicating elevated risk for HIV acquisition per the Malawi PrEP national eligibility guidelines. Participants must demonstrate a willingness to remain within

the study site catchment area and comply with the visit schedule and informed consent. Exclusion criteria include: a positive HIV test at the time of screening, absence of HIV risk factors per Malawi PrEP national guidelines, and any risk of intimate partner violence or social harm from participant in study as judged by study staff.

Table 1: Eligibility criteria

Inclusion criteria	Exclusion criteria
Pregnant women:	
• Age 18 or older • Documented pregnancy by urine pregnancy test or physical exam • Documented negative HIV status within the past three months • Identified factor(s) for elevated risk for HIV acquisition per PrEP national eligibility guidelines • Willingness to remain in the study site's catchment area over the course of study follow-up and to comply with visit schedule • Ability and willingness to provide informed consent	• Positive HIV test at time of screening • No identified HIV risk factors per national PrEP guidelines • Risk for intimate partner violence or social harms as a result of participation, in the judgement of the study personnel
Male partners (in-depth interviews only):	
• Referred by a study participant as her romantic partner • Age 18 or older • Able and willing to provide informed consent	
Male partners (in-depth interviews only):	
• All study staff eligible to participate • Able and willing to provide informed consent	

Study Design

We will evaluate each version of the intervention in one of two separate pilot feasibility studies. In Study 1, 100 pregnant women will be randomized 1:1 to receive either the SDM intervention addressing daily oral PrEP and alternative HIV prevention methods (condoms), or standard-of-care counselling addressing the same prevention methods. In Study 2, 50 pregnant women will be randomized 1:1 to receive either the SDM intervention addressing daily oral PrEP, CAB-LA, and alternative HIV prevention methods (internal and external condoms), or standard-of-care counselling addressing the same prevention methods. In both studies, we will evaluate the feasibility, acceptability, and appropriateness of the intervention and associated study procedures. Pregnant women who express interest in either PrEP method will be referred to government PrEP

services. **Table 2** summarizes the study design. Study 1 was conceived before the CAB-LA rollout, with the sample size powered to detect an intervention effect on the secondary endpoint of decisional conflict. As CAB-LA became a viable option, we expanded the intervention to include it and secured funding to evaluate this expanded version. Study 2 focused solely on feasibility and acceptability, not on assessing an intervention effect. Therefore, we selected a sample size appropriate for feasibility studies, aligning with similar research.

Table 2. Study design summary

	Study 1	Study 2
Sample	N=100 women	N= 50 women
Intervention	MyChoice SDM counselling with choice of oral PrEP and/or condoms	MyChoice SDM counselling with choice of oral PrEP, CAB-LA and/or condoms
Follow-up duration	3 months	2 months
Primary endpoints	Intervention acceptability Intervention appropriateness Intervention feasibility	Intervention acceptability Intervention appropriateness
Secondary endpoints	Decisional Conflict	Feasibility of study procedures
Exploratory endpoints	PrEP uptake assessment Dried blood spots assessment of PrEP adherence	PrEP uptake assessment

Study intervention

The study intervention, MyChoice for HIV Prevention (MyChoice), is a counsellor-delivered shared decision-making tool for pregnant women considering PrEP (table 3). The counselling sessions last approximately 45 minutes. The counsellor training spanned three days and included a mix of content review and practical exercises

Table 3. Shared Decision-Making Intervention Content

Counselling component	Content
Pre-counselling	• Overview of counselling content • Discuss participant's desire to include partner in counselling
MYCHOICE Counselling	
HIV info & risk assessment	• HIV risk in pregnancy and breastfeeding • Evaluation of HIV risk criteria according to Malawian national guidelines
HIV prevention options	• Present oral PrEP, and condoms • Features attributes and potential advantages and disadvantages of each
Values clarification	• Identify and discuss participant-valued features of available options (attribute personal and interpersonal implications of each method)
Structured deliberation	• Assess and address unmet decision-making needs • Collaboratively determine if participant is ready to decide, identify preferred method(s)
Post-decision counselling	• Persistence/adherence counselling • Disclosure coaching if desired
PrEP referral	• If oral PrEP selected, referral to SOC services or to an ongoing cohort study. • If CAB-LA selected, referral to an ongoing cohort study
Post-counselling	• Adherence counselling for selected HIV prevention method • Disclosure support • Partner ART adherence counselling (if applicable)

Before the counselling visit, women will receive information about the content of MyChoice counselling and discuss if they wish to have their partner or another person (e.g., another family member) participate in the counselling alongside them. The MyChoice counselling may be conducted with any accompanying supporter(s), depending on the participant's preference. MyChoice counselling begins with a review of HIV risk in pregnancy and breastfeeding and includes discussion of the population-specific risk factors which may apply to the participant. When the participant understands their HIV risk and expresses a desire for protection, the counsellor will present various HIV prevention options, including relevant PrEP methods and internal and external condoms, discussing their attributes, advantages, and disadvantages. Following the discussion of the HIV prevention options, a values clarification exercise will be implemented to help the participant to identify which features of the prevention options offered matter most to the participant.

(product attributes and personal and interpersonal implications of each method). The counsellor will then review the responses to the exercise and valued features for each method offered with the participant. The values clarification exercise will be used to understand and address any unmet participant decision support needs and will serve as the basis for structured deliberation to collaboratively identify the participant preferred HIV prevention method(s). The participant may defer or decline to make an HIV prevention method decision and may request a follow-up counselling visit which will allow for the participant to take more time to consider her preference or return with a partner or other supporter. When a decision is made; the counsellor will provide post-decision counselling, including adherence counselling and disclosure counselling if desired.

Participants choosing PrEP will be asked if they hope to disclose to anyone about their HIV prevention method decision. If yes, the participant will be offered additional coaching to support disclosure. Participants who have a partner living with HIV presently will receive brief counselling on the continued importance of ART (Antiretroviral therapy) adherence and mutual support for ART and PrEP adherence (if applicable). While the counselling is intended to take place over one day, if the participant requests follow-up counselling (e.g., wants more time to decide or wishes to come back with a partner for a future session), reasonable accommodations will be made for the MyChoice counsellor to meet with the participant a second time. Women choosing PrEP during the intervention counselling session will be referred to government services to initiate PrEP (daily oral FTC/TDF) or to an ongoing observational cohort study that is evaluating the impact PrEP on pregnancy, infant and maternal health outcomes (CAB-LA or daily oral FTC/TDF).²¹

Standard-of-care (control arm)

Participants randomized to the control arm will receive PrEP counselling delivered by a trained study nurse following the Malawi current standard-of-care (SOC) per national guidelines. SOC counselling includes the following elements: HIV risk assessment according to PrEP eligibility criteria; discussion of a combination prevention approach (PrEP and condoms); and risk reduction strategies. Participants will receive comprehensive education on both the advantages and limitations of PrEP, including guidance on managing potential side effects. Subsequently, the counsellor will assess the woman's eligibility, willingness, and readiness to start using PrEP. Women who choose oral PrEP during the SOC counselling session will be referred accordingly. No SDM counselling is provided in the SOC arm.

We will recruit 100 eligible women for Study 1 and 50 for Study 2. Additionally, we will enrol male partners and healthcare providers (including counsellors) for in-depth interviews to assess their perception of feasibility and acceptability. The proposed sample size for this qualitative component is shown in **Table 4**, though the final number will depend on theme saturation. Male partners are eligible for interviews if they are referred by a study participant as her romantic partner, are at least 18 years old, and provide informed consent. Study staff are also eligible to participate in interviews. Male partners are not required to participate in counselling.

Table 4. Sample size summary of by Study by type participant type

	Study 1	Study 2
Type of participant		
Pregnant women	100 (up to 30 complete IDIs)	50 (up to 20 complete IDIs)
Male partners of pregnant PrEP users (IDIs only)	Up to 20	Up to 10
PrEP counsellors / health care workers (IDIs only)	Up to 15	Up to 15

Recruitment and Enrolment procedures

Study staff will provide interested participants with study information and a referral to the study. Potential participants will be identified at any point in their pregnancy. All women attending the study site who meet the eligibility criteria will be invited to participate in the study. All male partners of invited female participants will be identified and invited to participate. Study staff will also be eligible for recruitment. Prospective pregnant women who choose to complete enrolment on the same day as screening or require additional time to return for the enrolment visit will be accommodated. Enrolment will be finalized upon completion of the informed consent process.

Randomization

In each parallel study, pregnant women will be randomly assigned to either the intervention or SOC comparison arm. Healthcare providers and male partners will not be randomized but will participate only in the qualitative component. Randomization will be conducted using statistical software to generate a 1:1 allocation ratio. The assignments will be placed in opaque, sealed envelopes and sequentially numbered with participant identification numbers.

Study follow-up

Participating pregnant women will receive their selected PrEP method (if applicable) through existing

services or studies outside the scope of this study. Initiation of either PrEP method (i.e., receipt of prescription) will be confirmed through clinic or pharmacy records, as well as information on reasons for non-initiation if applicable. In study 1 we will conduct follow-up visits at month 1, month 2, and month 3 after enrolment (**Table 5**). Study 2 will have follow-up visits at months 1, and month 2 after enrolment (**Table 6**). Study visits will be scheduled to align with ANC/pharmacy visits whenever possible to minimize the number of trips needed at the clinic.

Table 5. Schedule of Evaluations : Study 1

	Screening	Enrolment	Month 1	Month 2	Month 3
Eligibility assessment					
Pregnancy status	X				
HIV status	X				
Additional eligibility criteria	X				
Participant- reported assessments					
Questionnaires					
Demographic information		X			
Intervention assessment		X		X	
Decisional conflict		X			
Partner information		X	X	X	X
Social harms		X	X	X	X
Qualitative interviews			X		X
Oral PrEP Adherence assessment					
PrEP uptake assessment			X		
Pill count			X	X	X
Self- report			X	X	X
Dried Blood Spots				X	

Table 6. Schedule of Evaluations : Study 2

	Screening	Enrolment	Month 1	Month 2
Eligibility assessment				
Pregnancy status	X			

HIV status	X			
Additional eligibility criteria	X			
Participant- reported assessments				
Questionnaires				
Demographic information		X		
Intervention assessment		X		X
Decisional conflict		X		
Partner information		X	X	X
Social harms		X	X	X
Qualitative interviews			X	

Data collection

Interviewer-administered questionnaires will be completed at the month-1 and final follow-up visit (month 3 for study 1, month 2 for study 2). Questionnaires will assess study outcomes and associated social and behavioural measures to contextualize understanding of primary study outcomes as summarized in Table 5 and 6.

At each follow-up visit, pregnant women who have chosen oral PrEP will undergo adherence assessment through self-report and pill counts. In study 1, we will also collect dried blood spots (DBS) at month-2 to assess adherence among all oral PrEP users.

Qualitative in-depth interviews (IDIs) will be conducted at designated visits to assess women's satisfaction with study counselling, session quality, and decision-making experience. Follow-up interviews will explore their experiences using the selected HIV prevention method and the perceived impact of study counselling. Additional feedback on the intervention and study procedures will be gathered.

IDIs with male partners and study staff will provide information on their experiences, perceptions of integrating SDM into routine care, and suggestions for improvements. A locally recruited, trained research assistant fluent in Chichewa and English will conduct the interviews using semi-structured guides. Interviews will be audio-recorded, transcribed, and translated into English for analysis.

Retention

Once participants are enrolled, the study team will implement strategies to ensure high retention and minimize bias from loss to follow-up. Retention rates will be closely monitored, and challenges addressed proactively. Key strategies include providing a thorough explanation of visit schedules and procedures during informed consent, collecting detailed locator information at enrolment, and utilizing timely reminders such as phone calls or text messages (with participant consent). The study team will also follow up on missed visits through home or alternative off-site visits when feasible. Trained outreach workers will also conduct in-person follow-ups at participants' homes or other agreed locations to enhance retention. If participants choose to discontinue their involvement in the study, we will document their stated reason(s).

Safety Monitoring

At each study visit, study staff will evaluate participants for social harms and adverse events (AEs). A social harm will be defined as a non-medical untoward consequence of study participation, including difficulties in personal relationships, stigma, or discrimination from family or community. An AE will be defined as any untoward medical occurrence in a study participant including any abnormal sign (e.g., abnormal physical exam or laboratory finding), symptom, or disease, temporally associated with the individual's participation in the research, whether or not considered related to participation in the research.

General Statistical Approach

Initial examinations will include descriptive analyses of the randomized study populations' general characteristics (e.g., socio-demographics) and each outcome. Any key characteristics that differ significantly by study arm will be treated as covariates in sensitivity analyses; otherwise, primary analyses and secondary analyses will be unadjusted. The analysis will focus on estimation rather than hypothesis testing, however, an $\alpha=0.05$ will be used throughout to compute 95% confidence intervals (CIs). Exact statistical methods to estimate 95% CI will be used in cases of small cell counts or analysis of continuous measures where $n < 30$. Given potential for precision loss with exact CI methods and the pilot nature of these studies, we will use large-sample methods (e.g., Wald CIs) when the nominal CI coverage level is tenable. Missing data is expected to be uncommon ($\leq 10\%$), and a complete case analysis including only evaluable measures will be

conducted by default. If missing data exceed 10%, multiple imputation methods may be used.

Primary endpoints

Primary study endpoints evaluated in both studies include intervention acceptability and appropriateness assessed via survey measures. The additional primary endpoint of intervention feasibility will be evaluated in Study 1. Descriptive statistics will be calculated for primary outcomes among intervention arm participants. For each 4-item scale, item scores will be averaged to produce a composite score for each participant (range 1-5). Higher scores will indicate a greater level of acceptability, appropriateness, or feasibility, respectively. We will estimate the mean differences between arms for each primary outcome with a corresponding 95% confidence interval and p-value.

Intervention Acceptability (Study 1 & 2)

We will evaluate intervention acceptability, defined as the extent to which participants perceive the intervention to be agreeable, palatable, or satisfactory. Acceptability will be assessed through participant self-report using a validated 4-item scale. This scale measures how agreeable and satisfactory women find the intervention (responses rated on a 5-point Likert scale ranging from "Completely Disagree" to "Completely Agree"). This assessment will be conducted at both month 0 and month 2 using the Acceptability of Intervention Measure (AIM) scale.²²

Intervention Appropriateness (Study 1 & 2)

We will also evaluate participant perceptions of Intervention appropriateness, defined as the perceived relevance and usefulness of the intervention to support decision making about HIV prevention methods. Appropriateness will be assessed through self-report using a validated 4-item scale to measure women's perceptions of its relevance and usefulness (responses rated on a 5-point Likert scale ranging from "Completely Disagree" to "Completely Agree").²²

Intervention Feasibility (Study 1)

We will also evaluate participant perceptions of Intervention appropriateness, defined as the extent to which the intervention is deemed feasible or practical from their perspective. This Feasibility of Intervention Measure will be administered at both month 0 and month 2. The items on the scale will be measured using a 5-point Likert scale, and individual responses will be averaged to create a score for each measure. Higher scores will indicate a greater level of feasibility.²²

Secondary endpoints

Specific analyses for each study outcome are detailed below.

Decisional Conflict (Study 1)

The Decisional Conflict Scale (DCS) will be utilized to gauge women's' perceptions of decision uncertainty, satisfaction, clarity of personal values, and support for decision-making. This 16-item scale assesses these aspects on a 5-point scale, with scores totalling 100 points (mean rating multiplied by 25).^{19,22-}

²⁴A "low" DCS score will be identified using a cut-off of 25 out of 100, which has been linked to reduced decisional regret and enhanced choice retention. DCS scores will be computed based on women's responses to statements, where higher scores indicate greater decisional conflict, while lower scores indicate diminished conflict and heightened certainty in decision-making. The scale will be administered at the enrolment visit following completion of study counselling. Summary scores will be presented descriptively (mean and SD across participants in each arm by study) using an intent-to-treat approach. We will first compare group means of DCS by study arm and then examine the intervention's effect on this outcome using a two-sample Welch's t-test. If demographic variables related to decisional conflict differ substantively by study arm, we will instead use augmented inverse probability weights (AIPW) to perform doubly robust estimation of the average intervention effect to compare intervention vs. control (e.g., using the CAUSALTRT procedure in SAS software).

Study Procedure Feasibility (Study 2)

The feasibility of the study procedures refers to how effectively these procedures can be implemented in the study setting. To assess this feasibility, we will analyse study records and focus on several specific outcomes. These outcomes include the mean number of women screened weekly, the proportion of eligible women who enroll in the study, and retention rates, which encompass the proportion of women returning for each scheduled follow-up visit. Additionally, we will measure the number of days required to meet both enrolment and retention targets, starting from initiation of enrolment and from the first scheduled follow-up visit, respectively. Descriptive statistics such as the mean, standard deviation, or percentage will be used to evaluate each of these feasibility outcomes.

Exploratory endpoints

PrEP uptake (Study 1&2)

We will assess PrEP uptake (i.e., receipt of PrEP prescription) among participants choosing PrEP during the intervention session. This will be assessed through clinic or pharmacy records.

Retention with functional adherence (Study 1)

Our clinical exploratory endpoint to be measured among participants using oral PrEP is retention in care with functional adherence to PrEP at two months. We will assess adherence to oral PrEP among participants taking it up through Tenofovir diphosphate (TFVdp) concentrations in participant dried blood spot (DBS) samples. TFVdp will be measured using established liquid-chromatography tandem mass spectrometry methods²⁵ Using published thresholds,²⁶ TFVdp concentrations will be categorized as in Table 7 below. Emtricitabine triphosphate (FTCtp) concentrations will also be quantified and may be interpreted in an exploratory manner (e.g., in the event that TFVdp is below the level of quantification). Participants will be considered for this composite outcome if they have any record of oral PrEP initiation following study assisted referral. Participants retained at two months meeting the relevant definition of functional adherence (**Table 7** below) will be categorized as retained with functional adherence.

Table 7. Adherence interpretation of TFVdp concentration levels

Interpretation	DBS TFVdp fmol/punch	
	<i>Pregnant participants</i>	<i>Postpartum participants*</i>
~7 doses/week	≥650	≥1050
2-6 doses/week	200-649	300-1049
<2 doses/week	<200	<300

**participants will be enrolled during pregnancy but may deliver prior to the month 2 visit when this outcome is assessed*

A treatment effect on PrEP adherence among participants adopting PrEP will be explored as sample size and rates of adoption permit. We will compare the proportion of the sample retained in care with functional PrEP adherence at 2-month follow-up between the two randomization arms using a linear-binomial model. Women who are not retained for 2-month follow-up will be counted as failures and will contribute to the analysis denominator. From the linear-binomial model, the site-adjusted risk difference of being retained and in care with functional PrEP for the intervention arm versus the control arm will be calculated, along with a corresponding 95% CI. In addition to the primary analysis, assessing functional PrEP adherence as binary outcome, secondary analyses will compare the adherence categories between the study arms using a Wilcoxon rank-sum test. This analysis will be restricted to women with an evaluable adherence score.

Intervention Fidelity (Study 1&2)

With participant consent, intervention sessions will be digitally audio-recorded. A randomly selected subset of sessions (~20%) will be reviewed by a study team member using a structured fidelity assessment tool to evaluate intervention fidelity. Study staff will use recordings to evaluate the whether the counselling delivered as expected (adherence to intended components and quality of counselling delivered) using the structured tool. Raters will score each section of the counselling and overall, with elements rated on a 5-point scale (0 “no effort” to 4 “exemplary effort”).

Qualitative assessment of intervention & study procedure perceptions (Study 1&2)

Thematic analysis will be used to analyse the qualitative data. The transcripts will be transcribed and

translated into English. Analysis will consist of: 1) Reading for Content: We will read the data until content becomes intimately familiar. As data are reviewed emergent themes will be noted. 2) Coding: A list of codes will be created and documented in a codebook based on identified themes in addition to structural codes corresponding to initial interview questions. Two coders will independently code each transcript. To ensure inter-coder reliability, 10% of data will be double-coded; 3) Data reduction: We will review the data related to each code to identify principal sub-themes that reflect finer distinctions in the data. This entails taking an inventory of what is related to a given code, observing the variation or richness of each theme, and noting differences between individuals or among subgroups; 4) Data display and comparison: Matrices that categorize and display data will be used to help facilitate comparisons across the sampling groups.

Confidentiality

To ensure the security of data and maintain participant confidentiality, all interviews and data collection will take place in private areas at the health facility. Any audio recordings made during qualitative interviews will be promptly transferred to a secure computer, and the original recordings will be erased. The transcripts of these recordings will not include any identifying information. Similarly, paper clinic charts and other documents will be de-identified to remove any personal details. Electronic files will be stored on encrypted devices with password protection to further ensure data security. These measures are in place to safeguard the privacy of participants and maintain integrity of the research data.

RESULTS

This project was approved by the Malawi National Health Science Research Committee and the University of North Carolina at Chapel Hill Institutional Review Board. Data collection commenced on 30th July 2024 for Study 1 and 10th February 2025 for Study 2. To date, data collection is ongoing.

DISCUSSION

Our feasibility pilot study seeks to assess the acceptability and appropriateness of the MyChoice intervention to facilitate informed choices about PrEP use during pregnancy. Currently, there is limited

understanding of effective strategies to engage pregnant women in PrEP and identify appropriate candidates within this population. While many pregnant women in sub-Saharan Africa meet the HIV risk criteria for PrEP, such as having a partner with known HIV status or a history of STIs,^{27,28} studies have shown that women meeting these criteria often exhibit low adherence to PrEP.^{6,7,29} This low adherence may indicate that assessed HIV risk alone is not an adequate motivator for sustained PrEP use.

Fit and motivation for PrEP use are crucial for promoting adherence, and a shared decision-making process may play a key role in achieving both.²⁰ Unlike ART, the choice to use PrEP is highly sensitive to individual preferences. While PrEP offers the advantage of being a woman-controlled HIV prevention method, it may not be the right choice for every woman during her pregnancy and while breastfeeding. SDM can support user fit by promoting values-aligned decisions and reducing decisional conflict—defined as uncertainty about the best choice among competing options or discomfort with the decision made.³⁰ Our study provides an opportunity to assess SDM in the context of choosing between oral PrEP and CAB-LA. SDM helps reduce decisional conflict by improving individuals' understanding of available options, their benefits and risks, and by clarifying personal values. Both theoretical frameworks and empirical evidence show that SDM promotes values-congruent decisions and supports adherence to treatments such as ART, as well as therapies for conditions like depression.^{31,32} In HIV care, SDM is highly accepted, strongly desired by patients, and linked to better ART adherence by promoting patient engagement, adherence self-efficacy, confidence in the treatment plan, and satisfaction with the patient-provider relationship.^{33–35} We need to help women decide which HIV prevention method best fits their needs and preferences, as this method will be the most likely to be used the most effectively.³⁶

PrEP presents an opportunity to dramatically reduce the elevated risk of HIV acquisition in pregnant and breastfeeding women in sub-Saharan Africa, and shared-decision making may complement the potential impact of PrEP by identifying the appropriate users and promoting adherent use. No evidence-based approaches for PrEP shared decision making in pregnancy exist. Thus, we aim to fill this gap with these pilot studies to determine the feasibility, acceptability, and appropriateness of a novel SDM intervention and associated study procedures to inform a future efficacy trial.

Abbreviations

AE Adverse Event

AIM Acceptability of Intervention Measure

ANC Antenatal care

ART Antiretroviral therapy

CAB-LA Cabotegravir Long Acting

DCS Decisional Conflict Scale

DBS Dried blood spot

IDIs In-depth interview

MTCT Mother-to-child transmission of HIV

SDM Shared decision making

SOC Standard of care

PMTCT prevention of mother- to-child transmission

PrEP Pre-exposure prophylaxis

TFVdp Tenofovir diphosphate

DECLARATIONS

Ethics approval and consent to participate: The study protocol and participant consent forms were approved by the Malawi National Health Science Research Committee (#23/10/4210 and #23/10/4211) and the University of North Carolina at Chapel Hill Institutional Review Board (#23-3102 and #24-0511). The study was prospectively registered in ClinicalTrials.gov; the NCT numbers are NCT06394323 and NCT06397690: Written informed consent will be obtained from all study participants prior to participation. Consent forms are available in Chichewa and English. Trial NCT06394323 was registered 2024-04-26. Trial NCT06397690 was registered 2024-04-19.

Consent for publication: Not applicable, no individual data included in this manuscript.

Availability of data and materials: Not applicable

Competing interests: None declared

Patient and public involvement: Prior to commencing recruitment, the local Community Advisory Board (CAB) was engaged and reviewed the study aims and procedures. The CAB consists of local community and religious leaders, community representatives and adolescents representing the youth. CAB meetings are held bi-monthly where study team gives updates to the board.

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Authors' contributions: LH is the principal investigator and in Malawi, FS is the investigator of records and TP is the study coordinator. FS, TP, IK, HC, MT, GK, MC, LK, AB, LP, NM, WK and PW are involved in data collection. LH, FS, BHC, CG, LP and SM contributed to the study protocol development. All authors have contributed to the development of this manuscript. They have read and approved the final version for publication.

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Supplementary Files

Multimedia Appendixes

IRB_Approval_Letter_MYCHOICE_STUDY_1.

URL: <http://asset.jmir.pub/assets/b60c6cfdc666f1dac2b4dc64ac8899f5.pdf>

IRB study 2.

URL: <http://asset.jmir.pub/assets/09188c1baef8666df132d50978b21779.pdf>

Study 1 approval.

URL: <http://asset.jmir.pub/assets/c3d2b3051103f0249676b4e585e0780d.pdf>

Study 2 approval.

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Peer Review Comments from NHSRC.

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NIH review comments response.

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URL: <http://asset.jmir.pub/assets/92f5ea6f3ae7cd27abcb010df4da1dee.pdf>

CONSORT (or other) checklists

checklist.

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