Acceptability of HIV Pre-exposure Prophylaxis Integration into Post-abortal Care Services to Expand the Reach of PrEP among Kenyan Adolescent Girls and Young Women

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Abstract

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Introduction: Globally, adolescent girls and young women (AGYW) continue to bear a disproportionate burden of HIV and unintended pregnancies. In low-resource settings, including Kenya, AGYW seeking post-abortal care (PAC) often continue to engage in sex with infrequent condom use, resulting in subsequent unintended pregnancies and risk for HIV infection. This situation demonstrates the potential for integrating HIV prevention services such as PrEP into PAC services to increase reach, uptake, and efficiency. However, data informing the acceptability, feasibility, and sustainability of PAC clinics as an entry point for PrEP services, including actual service delivery, are limited. Therefore, we assessed AGYWs, providers, and the implementing partner to inform the feasibility, scale-up, and sustainability of integrating PrEP into PAC.

Methods: Between June 2022 and March 2023, we conducted a cross-sectional qualitative study as part of a cluster-randomized trial piloting PrEP delivery among 15–30-year-old AGYW within PAC clinics in 14 Kenyan public and private facilities in Kiambu, Nairobi, Murang'a, and Kisumu Counties. We collected data using in-depth interviews (n=60) among purposively sampled AGYW who initiated PrEP while receiving PAC in the partner facilities, focus group discussions (n=6) among AGYW and (n=6) among PAC providers, and key informant interviews (n=18) with PAC providers and implementing partners' representatives. Interviews were audio-recorded and transcribed verbatim. The data were analyzed thematically using inductive and deductive approaches. The theoretical framework of acceptability (TFA) guided this process.

Results: We found that PrEP integration into PAC was highly acceptable as an effective and timely intervention to improve reach for PrEP services since it reduced PrEP stigma and enhanced ease of access among AGYW, who could benefit the most. Additionally, providers' competence in offering integrated PrEP services, attitudes toward providing PrEP and PAC for AGYW, and AGYWs' confidence in using PrEP all influence PrEP delivery and access in PAC clinics. Moreover, staffing, availability of safe spaces, commodity management, and reporting systems are crucial in influencing the efficient integration of PrEP into PAC services.

Conclusion: Integrating PrEP services into PAC was highly acceptable as an effective and timely intervention to improve PrEP services reach among Kenyan AGYW. Therefore, scaling-up integration of PrEP in PAC scale-up would improve reach for PrEP among at-risk AGYW. However, enhancing PrEP integration into PAC efficiency requires further strategies to strengthen facility operations and structure.

Introduction

Globally, adolescent girls and young women (AGYW) suffer disproportionately from reproductive health challenges, including unintended pregnancy and HIV(1–5). Despite efforts to scale-up HIV prevention methods, AGYW in many countries in sub-Saharan African are disproportionately affected by a high HIV burden (1,4,6). In Kenya, AGYW ages 15-24 years, account for slightly more than half (51%) of all the new HIV infections compared to their male counterparts of the same age(1-5,7,8) with infections mainly occurring through heterosexual transmissions (3,4). In addition, Kenyan AGYW also suffer from an epidemic of unintended pregnancies, often resulting in high rates of unsafe abortions and a need for post-abortal care (PAC) (5,9,10). These unsafe abortions often result from Kenya's restrictive abortion law and the stigma associated with early sexual activity, contraception use, and unintended pregnancies (3,5,9,10). Due to low negotiation skills for safe sex, low risk perception, peer pressure, and lack of prevention services, AGYW are typically at a high risk for unsafe abortions. These risk factors are similar to the those that increase the risk for HIV infection (3,11,12). Existing literature show that AGYW who access PAC in low-resource settings, including Kenya, are likely to continue engaging in sex with infrequent or no condom use, increasing their vulnerability to subsequent unintended pregnancies and HIV risk which serve as obstacles to AGYWs realizing their full potential and goals (2,3,5,13). These occurrences highlight the causes of frequent induced abortions and HIV infections. Additionally, it shows the importance of prioritizing HIV prevention by developing appropriate and targeted interventions that meet AGYW's needs to curb HIV infections (2,5,12,14). One such strategy is to integrate HIV prevention services, including PrEP services, into existing reproductive health services to increase access and efficiency of service delivery (2,3,5,11,12,14).

PrEP, a user-controlled HIV prevention method, is highly effective in reducing HIV incidence when adherence to the daily medication regimen is consistent (3,4,7). The Kenya roadmap for HIV prevention identified PrEP as a primary component of the combination prevention strategy that aims to reach almost zero HIV new infections by 2030 (3). Thus, differentiated PrEP delivery models, such as delivery through pharmacies, peer-to-peer initiatives, outpatient clinics, family planning clinics, and maternal and child health clinics, have been implemented to scale up PrEP for all HIV-at-risk populations (3,4,7,8,15–17). However, efforts to increase PrEP accessibility and use among AGYW receiving post-abortion care, a cohort at a disproportionate potential risk for HIV infection is limited (2). Additionally, the stigma associated with inadequate PrEP knowledge, low-HIV risk perception, visiting HIV care clinics, and lack of privacy have been reported as obstacles for PrEP use (2,7,8,15,18). These factors, along with the stigma associated with post-abortal care, may act as a barrier to PrEP delivery among AGYW seeking PAC (2). This presents an opportunity to identify and design tailored PrEP delivery models that are AGYW-friendly is essential to increasing PrEP uptake and adherence among AGYW at risk of HIV infection (15,16). Furthermore, it provides an opportunity to normalize its delivery as part of regularly provided services to maximize its impact on HIV burden reduction (1–8,14,18).

AGYW account for the highest proportion of the population seeking post-abortal care. During this time, the AGYW receive reproductive health counseling, as part of PAC care, an opportunity to leverage on providing HIV counseling to support AGYW to identify their risk for HIV and empower them to use HIV prevention strategies and to deliver them (2,17,18). Studies conducted to evaluate the receptiveness and preferences to PrEP among AGYW demonstrated the potential of PAC services as an entry point for PrEP among the AGYW reflected in the high risk for HIV infection and PrEP initiation and referrals (2,17). However, data and evidence informing acceptability, feasibility, and sustainability of PAC clinics as an entry point for PrEP services, including actual service delivery, are limited. Numerous studies have demonstrated the importance of behavioral studies in informing the adoption of evidence-based health interventions such as PrEP by assessing end-user perceptions and organizational barriers and facilitators for sustained delivery. (19). Guided by the acceptability framework, this study sought to gather insights on the acceptability of integrating PrEP into PAC in Kenyan facilities to inform policy on acceptability, feasibility, sustainability, and scale-up of this intervention to reduce HIV burden and infections among the AGYW (20).

Methods

Study design and participants

We conducted a qualitative study, between June 2022 and March 2023, as part of a cluster-randomized trial piloting PrEP delivery within PAC clinics in 14 Kenyan public and private facilities in Kiambu, Nairobi, Murang'a, and Kisumu Counties among 15–30-year-old women seeking PAC. Facilities were selected based on the number of AGYW served and location to include facilities in urban, peri-urban, and rural areas. As part of the programmatic component, PAC providers in partner facilities received training between June 2021 and October 2021 on PrEP delivery for AGYW seeking PAC. After training, PAC providers approached and delivered PrEP for the first three months, as per the standard of care, to AGYW who were willing to use PrEP. Thereafter, AGYW (n = 400) consented to and enrolled in research procedures in partner facilities among the 14 facilities randomized to adherence support activities (follow-up via phone calls and texts) or standard of care, with approximately equal proportions from the Thika/Nairobi and Kisumu regions.

Enrollment to research procedures was conducted by trained KEMRI Kisumu and Thika research team. Only young women who consented to research procedures were enrolled for the research procedures, thereafter, followed for up to 6 months, starting with enrollment and then months 1, 3, and 6. Follow-up happened in the PAC, FP, MCH or HIV care clinics of the partnering facilities where the young women were enrolled or accessing PrEP care. Research procedures for AGYW included PrEP adherence monitoring using Urine Tenofovir Test, questionnaires and qualitative interviews. AGYW were eligible for the research procedure if they were 15-30 years, enrolled in the integrated PrEP program and accessing PrEP services in the partnering facilities, able and willing to provide informed consent. AGYW between 15-17 years provided informed consent as

emancipated minors (21). Young women were not be eligible for the research procedure if they had any condition (social or medical) which in the opinion of the investigator would make program participation unsafe. In addition, program providers and representatives from implementing partners were invited to participate in qualitative interviews. Participants were eligible if they were able and willing to provide informed consent. Additionally, representatives from the implementing partners should have participated in the reproductive health programs. Providers should have delivered PrEP for AGYW who sought PAC in partner facilities.

Qualitative interviews

Participants were approached by trained and qualified qualitative researchers to determine their interest to participate in the interviews. Participants available and willing to share their perceptions about acceptability, feasibility, and sustainability of integrating PrEP into PAC were invited by the researchers either in-person or on-phone. Purposive sampling was used to recruit AGYW who consented to participate in qualitative interviews in approximately equal proportions for AGYW from all the age groups (15-19, 20-24, 25-30), geographical regions (urban, peri-urban, rural), and across arms (enhanced adherence and standard of care arm). AGYW interviews began at month 3-visit to allow for time among participants enrolled in the enhanced component arm to experience the added-on elements for enhanced adherence. Program providers and representatives from reproductive health implementing partners were also approached and invited to participate in qualitative interviews. These participants underwent an informed consent process prior to any data collection. Participation in qualitative research was not link to job duties in any way.

Generally, AGYW's interviews focused on experiences with PrEP counseling and delivery, quality of services, ease of access to PrEP, motivation to initiate PrEP while accessing PAC, service satisfaction, provider attitude, and privacy. Further, we sought to understand how these factors influence PrEP uptake, retention, and service delivery in PAC settings. Additionally, interviews among providers and representatives from the reproductive health implementing partners explored experiences with AGYW PrEP counseling and provision while seeking PAC. Specifically, we gathered views on the quality and efficiency of services, provider willingness to provide PrEP services alongside PAC, perceptions about integrating PrEP services into PAC, continuity, intervention success, and scale-up.

We conducted 60 in-depth interviews (IDIs) and 6 focus group discussions (FGDs) among AGYW, 6 provider FGDs, and 18 key informant interviews (KIIs) with providers and representatives from implementing partners. Using a semi-structured interview guide, qualitative researchers conducted all interviews in the participants' preferred language and location, audio-recorded, and transcribed verbatim. Participants were allowed to opt out of audio recording during interviews, in which case the note-taker took detailed notes of the conversation. To monitor progress, the study team held regular calls as interviewing progressed to clarify any concerns as needed including identifying emerging themes, gaps, and areas for further probing. According to

the current standards in the field, sample sizes for qualitative research are defined by reaching saturation and having a representative sample (22). To ensure that the transcripts represented the interview conversation, they were peer-reviewed for quality control. Data were stored in secure, lockable cabinets with monthly internal quality control.

Ethics

Study approvals were obtained from Kenya Medical Research Institute- Research Scientific and Ethical Committee, University of Washington IRB Committee and Marie Stopes Ethical Review Committee. The study staff had training in human subjects and Good Clinical and Laboratory Practice (GCLP). All participants provided informed consent.

Data analysis

Borrowing on grounded theory (22), trained qualitative researchers analyzed qualitative data from IDIs, KIIs, and FGDs using both inductive and deductive approaches. Additionally, the TFA (20) guided the data analysis and presentation of participants' experiences with PrEP integration into PAC as well as their perceptions of individual, social, and organizational factors influencing PrEP acceptability in PAC.

Upon completion of the transcription and review process, the team developed a codebook (identifying thematic codes) that guided the coding process. The codebook was developed using deductive approaches (based on the interview guide questions) inductive (identifying relevant themes from the transcripts). Upon completion of codebook development, transcripts were uploaded to an online data analysis software Dedoose (23) for coding. Using the developed codebook, transcripts were coded independently by trained qualitative researchers. To ensure code application agreement, the coding team had regular check-in calls for consensus in code application and resolved any disagreements for randomly selected transcripts including 15 IDIs, 6 KIIs, 4 provider FGDs and 4 AGYW FGDs. Once the team achieved inter-coder agreement, coding continued with weekly calls to ensure there was continued code application agreement. Finally, output from different thematic areas related to motivation for PrEP uptake, experiences with receiving and delivering PrEP services, acceptability was gathered through their perceptions about quality of the services, service satisfaction, ease of access, provider attitude, privacy, and efficiency; adherence to PrEP and facilitators and challenges of rolling out and sustaining the program in the health facilities in Kenya. Guided by the TFA, major findings were summarized using the TFA's adopted definitions in relation to facilitators, challenges, and lessons learned to inform PrEP integration into PAC and continuity. Excerpts were used to further explain the findings.

Figure 1: Adopted definitions of the theoretical framework constructs in the context of the integrated HIV PrEP program study.

TFA construct	**Definition**
Affective attitude	Providers, implementing partners, and AGYW positive and negative feelings towards the integrated PrEP program.
Perceived effectiveness	The extent to which the integrated PrEP program is likely to achieve its purpose i.e., expanding reach for PrEP among AGYW at risk or perceived protection of PrEP against HIV infection.
Self-efficacy	Perceived confidence among providers and AGYW to participate in the integrated PrEP program i.e., PrEP services delivery and PrEP use respectively.
Ethicality	The extent to which the integrated PrEP program fits within AGYW's, providers' and implementing partners' norms and value system.
Burden	The perceived amount of effort (for example the ease or difficulty; side-effects) required for the AGYW, providers, and implementing partners to participate in the integrated PrEP program.

Results

Among the interviews conducted at the KEMRI Thika site, the median age of participants was 21 years for the AGYW who took part in FGDs, 23 years for the AGYW who took part in IDIs, 42 years for the KII participants, and 38 years for the provider FGDs (Table 1). Most participants—35% in the FGDs and 65% in the IDIs—reported having a household income of less than Ksh. 10,000. In the KII sample, nearly equal numbers of men and women participated, with 83% of females participating in provider FGDs.

Table 1: Participants Demographics for the KEMRI Thika Site

Variable	AGYW FGDs (n=19)	AGYW IDIs (n=26)	KIIs (n=9)	Provider FGDs (n=18)
Age (in years), mean, SD	21 (5.9)	23 (3.4)	42 (5.05)	38 (7.7)
Gender				
Female	-	-	4 (44)	15 (83)
Male	-	-	5 (56)	3 (17)
Relationship status (n, %)				
Divorced	1 (5)	2 (8)	-	-
Married	7 (37)	7 (27)	-	-
In a relationship	4 (21)	11 (42)	-	-
Single	7 (37)	6 (23)	-	-
Living with (n, %)				
Alone	7 (37)	4 (15)	-	-
Family	6 (32)	11 (42)	-	-
Not Known	0 (0)	0 (0)	-	-
Partner	6 (32)	11 (42)	-	-
Years in school, mean, SD	12(2)	13(3)	-	-
Have children (n, %)				
No	9 (47)	15 (58)	-	-
Not Known	0 (0)	0 (0)	-	-
Yes	10 (53)	11 (42)	-	-
Employment (n, %)				
Not Known	0 (0)	0 (0)	-	-
No	6 (32)	9 (35)	-	-
Yes	13 (68)	17 (65)	-	-
Income Group (n, %)				
Less than10000	10 (53)	17 (65)	-	-
Between 10000 and 15000	3 (16)	1 (4)	-	-
More than 15000	6 (32)	8 (31)	-	-

Overall, PrEP integration into PAC was highly acceptable as a novel and timely strategy for optimizing PrEP services among other HIV prevention services for AGYW who could benefit the most. Using the TFA, findings on major themes across five TFA constructs (affective attitude, perceived effectiveness, ethicality, self-efficacy, and burden) are presented in regard to the experiences of integrating PrEP services into PAC services, as well as facilitators and barriers to sustaining PrEP delivery. In addition, we provide insights into areas that could be improved to support sustained PrEP in PAC delivery, initiation, adherence and continuation.

Affective attitude: Positive and negative feelings towards PrEP integration into PAC

Theme 1: Integrating PrEP services into PAC motivated AGYW to initiate and continue on PrEP.

Most participants felt that providing PrEP alongside other services accessed by AGYW, such as PAC and FP services, minimized stigma, encouraging PrEP initiation and continuation.

Privacy with integrated health services

Most participants reported that providing PrEP alongside other service delivery points accessed by AGYW, such as PAC and FP clinics, provided privacy and minimized stigma. This encouraged them to feel more confident and at ease about PrEP initiations and refills. Additionally, most AGYW preferred that the integrated PrEP services were offered by the same provider, a model that enhanced privacy, reduced time spent in facilities and travel for independent services which improved uptake of PrEP services.

> *Maybe you want to get family planning and you had a PrEP refill appointment on that day, so going for both saves time as opposed to going for them on different dates. Actually, someone may think that you are going for family planning when you've gone for PrEP so they won't know your exact reason for going to that FP clinic. (AGYW IDI 08, KSM)*

Integrated pregnancy risk counseling alongside PrEP services

Moreover, most participants reported that offering AGYW with unplanned pregnancy counseling alongside PrEP services encouraged them to recognize their HIV infection risk and make them more willing to use PrEP.

> *I think that one you are also doing a good job. If other girls are also enrolled in family planning methods like me, then I think it is a plus, because apart from preventing HIV, then you are also preventing unwanted pregnancy. You give the girls a chance to be girls and a chance to build themselves before they decide to have kids. (AGYW IDI 07, KSM).*

One-stop shop model

Further, some participants indicated most private facilities had existing integrated service delivery models hence offered services from a single consultation room, which made PrEP and PAC integration effective and appropriate.

Community pharmacies or clinics

Some participants mentioned that providing PrEP through community pharmacies or clinics, with cost considerations, would improve PrEP access, adherence and continuation for AGYW who need expedited services or cannot access PrEP from hospitals.

> *…pharmacies can offer PrEP but they should make the prices affordable because someone may be too busy to go to a health facility. So, going to the pharmacy becomes easier, and so the prices should at least be affordable. (AGYW IDI 08, KSM)*

Theme 2: Perceived providers' enthusiasm and mobile phone-based adherence support, were acceptable and satisfying to AGYW.

Perceived providers' enthusiasm

The AGYW expressed satisfaction with the quality of services provided because of providers' enthusiasm for offering PrEP services. Due to the high-quality HIV and PrEP counseling services that enabled AGYW to recognize their risk for HIV infection and PrEP benefits, the AGYW were eager to start PrEP and receive PrEP refills from the PAC points.

> *I like how they talk to people. They talk politely, as if they are trying to convince you to do something. They also give good pieces of advice without scolding, unlike other nurses, that is what I like. They are trained. (AGYW 1DI 10, KSM)*

Furthermore, AGYW mentioned that owing to the providers' counseling and enthusiasm, they were excited about PrEP information, particularly those unfamiliar with PrEP. As a result, they felt encouraged to recommend their peers to access PrEP from PAC points, despite the stigma associated with PAC, to protect themselves from HIV infection.

> *The moment you gave me a call yesterday, I shared with my friend that I have come with and she asked me to tag her along and not leave her behind. (AGYW IDI 20, KSM)*

Provider initiated mobile-phone based adherence support

Most AGYW from the intervention arm reported receiving mobile-based adherence support where providers contacted them to inquire about their PrEP experience. These AGYW revealed that during the phone calls they discussed their challenges, side effects, and other health concerns, and encouraged to keep clinic appointments and PrEP adherence.

> *When you are followed-up, you have this morale for swallowing, but when given drugs, and none follows up on you, you stop. But when a person cares, they call and ask how I am doing, "have you finished? how many drugs remaining? have you gone for your drugs?" (AGYW IDI 02, TKA)*

Theme 3: The stigma associated with reproductive health services, familiar providers/ people and age differences influence PrEP acceptance, adherence and continuation.

Stigma associated with PAC, FP, MCH services

Although PAC, FP, and MCH clinics were the most preferred points for PrEP services, some AGYW were concerned about the stigma associated with visiting these clinics. This was due to the stigma associated with sex, FP use, and unintended pregnancies among young people.

> *Let's say that place is for abortion. So anytime she goes there (laughs) someone might think she has gone to abort. The doctor should tell her "if you are comfortable you can come or go to such and such a place to choose where she is comfortable (AGYW IDI 01, KSM)*

Stigma associated with familiar providers/ people

Additionally, to avoid familiar providers or people, and hence the stigma associated with seeking PAC services, most participants reported that some AGYW traveled long distances to receive PAC services from facilities far from their residences. As a result, they indicated accessing PrEP services could be challenging, particularly in PrEP follow-up, for some AGYW to reach facilities because they would have to incur transportation costs.

> *When I was at home I didn't want to go to any center so there is no way I would have got the drug because I was far. (AGYW IDI 22, TKA)*

To improve PrEP access, participants suggested having several facilities and care delivery points within facilities offering integrated PrEP services was recommended. HIV care clinics are highly stigmatized since people fear being identified as living with HIV if seen accessing services there hence challenging to offer PrEP follow-ups from the clinic.

> *Going back to the ward is better but as she asked "whom am I going to find?" do you have someone there who is easy to relate with and who you will feel comfortable with and not fear? It will help me because I will go and get help immediately from a specific person as opposed to going to the CCC to queue. I think that would encourage people to go for PrEP drugs because they know they are getting it from a specific person (AGYW FGD 04, TKA)*

Age related stigma

Furthermore, some participants expressed that AGYW would feel uneasy and shy away from accessing PrEP services from delivery points with older providers and clients. Moreover, they reported that as a result of these circumstances, AGYW are likely to request time to think about it and come on a later date or not accept the services or come for follow-up a situation which continues to put the AGYW at the risk for HIV infection. Offering PrEP services in all care delivery points with stationed young providers was recommended.

Perceived effectiveness: Perceptions of the likelihood that PrEP integration into PAC would achieve its purpose

Theme 1: Integrating PrEP into PAC was perceived as an effective and timely intervention in providing opportunity to expand access to and reach for PrEP services among AGYW who could benefit the most, thus promoting initiation, adherence, and continuation of PrEP.

Receptiveness to PrEP integration into PAC

Most participants expressed excitement to the idea of integrating PrEP services into PAC since they felt that HIV prevention services, in this case PrEP services, were becoming more accessible to AGYW who could benefit the most. Additionally, some AGYW reported that providers showed enthusiasm by approaching them warmly and establishing rapport which made them at ease and comfortable with PrEP counseling and initiation. These AGYW mentioned this approach was impressive because they felt the services were client-centered, and providers showed willingness

in providing friendly services prompting AGYW to initiate PrEP. Further, a few AGYW who perceived themselves to be at risk for HIV infection reported willingness and motivation to initiate and adhere to PrEP to lower their risk of HIV infection motivated. This was particularly true for some AGYW who mentioned that they habitually engaged in condom-free sex with partners of unknown HIV status, distrusted partners, or partners reluctant to test for HIV.

> *I got pregnant over something very stupid. So, I thought PrEP can assist me to avoid certain situations because I'm still single and being single means, I may interact with more than two people so very good for my situation at the moment. (AGYW IDI 26, TKA)*

Opportunity to empower AGYW and enhance access to PrEP services

Moreover, most participants indicated that integrating PrEP in PAC provided for an opportunity to empower and share with the AGYW PrEP knowledge among other HIV prevention methods which the AGYW could use to inform future decisions or share with their peers.

> *Sharing the information, even without daily PrEP initiation, I am encouraged that I have shared the information that will help them at some point in future. I know that one day they'll tell me that, "by the way I want to start what you told me (PrEP) now." I'll just keep pushing on and I know that it will bear fruits in the end (Provider FGD 01, TKA)*

However, some participants felt that by focusing on providing PrEP to AGYW who accessed PAC service, most PrEP eligible and willing AGYW who sought healthcare outside of PAC clinics were left out.

> *That arrangement is not bad, I learnt about PrEP and started using. They should expand it since not all girls and women go there (PAC clinics). They can take it (PrEP) to the maternity wards and talk to women since some want it but lack the confidence going to hospital to ask for PrEP. (AGYW IDI 02, KSM)*

PrEP integration across all care delivery points

Further, as a model to increase uptake and reach for PrEP, most participants suggested integrating PrEP services, as part of the service regularly offered, across all care delivery points accessed by the AGYW. Furthermore, this concept would allow for one-stop services, allowing AGYW to make informed decisions in the future by providing all services from a single consultation room.

> *What if this PrEP is available in all departments and wards even surgical department? If made available in all departments it will be easy for people with fears. (AGYW IDI 04, TKA)*

Self-efficacy: Perceived confidence to deliver and use PrEP services

Theme 1: Provider training on PrEP integration into PAC and availability of PrEP supplies at PAC points enhanced PrEP services delivery and PrEP uptake opportunities among AGYW.

PrEP integration into PAC training

Most providers found the training on PrEP counseling, delivery, and adherence counseling, as well as HIV testing and counseling, to be particularly beneficial in enhancing their competence and confidence in offering quality services. Additionally, due to their lack of competence in PrEP services provision, most providers reported that critical to their confidence and expertise as PrEP providers was the support for ongoing technical support and continuous medical education. Further, owing to providers' competence in offering PrEP services, most AGYW reported they would recommend PAC points for PrEP services because they were impressed with the quality of services they obtained. These services included quality comprehensive reproductive health and PrEP counseling, knowledge of PrEP, friendly providers with a positive attitude, and privacy and accessibility.

> *I appreciate the training and everything; it highlighted there was a need because we used to see them coming every month, maybe after a few months but you do not explain to them there is a risk they actually facing so the knowledge help us to deliver more information and the services to our clients as compared to before we knew about PrEP and how we could help them protect themselves so it is a good. (Provider FGD 03, TKA)*

Availability of PrEP supplies at PAC clinics

Nearly all participants said that while PrEP was not primarily offered at PAC points, facilities developed strategies to consistently avail PrEP supplies including medication, HIV test kits, and registers. These participants said that this approach supported the PAC providers to promptly offer PrEP services to AGYW who were willing to use PrEP because PrEP supplies were easily available and accessible. As a result, AGYW were not referred to other service delivery points for PrEP, which increased PrEP uptake opportunities.

Theme 2: Existing differentiated reporting systems and facility operation, especially in public facilities, influenced the efficient integration of PrEP into PAC.

Facility reporting systems

Most providers perceived documentation and reporting processes as demanding and adding to their workload, also an addition to the system that did not previously exist. Since the PAC points were not primarily involved in providing PrEP services, PAC providers in public facilities received PrEP supplies from other departments such as HIV care clinics, family planning, or MCH. As a result, providers in PAC maintained documentation for PrEP supplies and prepared monthly reports to comply with commodity management regulations. During initiations and follow-ups, clinicians updated PrEP registers, including documenting and reporting other supplies acquired at

the PAC clinic, such as FP. As a result, some providers' expressed hesitancy to offer integrated PrEP services in the early stages of PrEP integration into PAC.

> *We have a lot of workload and a lot of documentation because at a facility you will find a provider manning maybe three or two clinics which of course even if they want to give the quality service sometimes it will be a challenge. (AGYW IDI 04, TKA)*

Adopting a consolidated electronic medical reports (EMR) system was suggested by almost all provided as a model to enhance reporting systems, as well as reduce workload and reporting gaps brought on by differentiated reporting, especially public facilities.

> *We have a gap in the EMR, because when you have one nurse in the MCH with about six registers to update it is quite a lot. We probably need to invest in systems and ensure that these patients are being seen using an EMR. Probably that might make documentation and also reporting easier. (KII 01, TKA)*

Clinic flow

Some facilities prescribed and dispensed PrEP at different care points at initiation and follow-up. As a result, AGYW avoided referrals to other providers they were unfamiliar with. This situation resulted in losing PrEP clients because of the stigma associated with PrEP and PAC. Using strategies to optimize clinic flow during refills, such as direct-to-pharmacy delivery models, was identified as an efficient strategy for delivery and reducing wait time.

Commodity management

Furthermore, some pharmacy providers felt that PrEP medication should have remained in pharmacies where prescription supplies are stored and dispensed, hindering integration.

Clinic operation/management

Moreover, missed PrEP client opportunities were reported, by some participants, as a result other clinic operation factors, such as late-day or weekend client discharge when trained providers had already left the PAC clinic and weekend clinic closures. Some facilities worked with or previously collaborated with non-governmental organizations that support HIV treatment and prevention, including provider incentives. As a result of the integrated PrEP program's lack of incentives, several providers were hesitant to offer integrated PrEP services. This was especially true for those who were used to receiving monetary incentives for motivation from other organizations.

Theme 3: Discomfort and trauma associated with PAC experiences may impede PrEP initiation and continuation from PAC clinics.

A few AGYW expressed discomfort being offered HIV testing, PrEP counseling, and medication because they perceived it as overwhelming since they were still recovering from the traumatic, painful, and stressful experience of pregnancy loss. Additionally, due to the trauma and pain

experienced during pregnancy loss, few AGYW found PrEP refills from PAC points traumatizing. To avoid the traumatic memories following discomfort and pain experienced during PAC, some of the AGYW would not wish to access PrEP services from PAC clinics.

> *I was sick, I did not want to be spoken to, I didn't feel like being asked questions and I was just get angry…" what are these things they are telling me, what will they help me with?". Especially when I knew that they wanted to test me (HIV testing)..so that they know what exactly…I was sick, I had not recovered well, I was still in pain. (AGYW IDI 02, TKA)*

Ethicality: Extent to which integrating PrEP into PAC fits within participants' values

Theme 1: PrEP-associated misconceptions and stigma, and availability of safe spaces influenced interest in PrEP delivery, initiation and continuation

Providers attitude towards PrEP among AGYW

Some providers felt that PrEP encouraged the AGYW to engage in risky and carefree sexual behaviors influencing their willingness to provide PrEP services for the AGYW. This perception resulted from personal, religious, and community norms, values, and convictions.

> *Staff attitude affects delivery because some staff feel like it is not right to give PrEP to young girls. Some feel like giving PrEP is like telling her to continue. (KII, 02)*

Additionally, a few AGYW expressed that providers' negative attitude towards offering PrEP and imposing their values on them would impact the PrEP counseling and delivery process affecting the AGYW's readiness to initiate PrEP. A few participants recommended considering crucial components such as improving community PrEP awareness, value clarification and attitude transformation, and stakeholder involvement to enhance efficient integration.

PrEP associated stigma and availability of safe spaces

Owing to stigma, most AGYW were concerned with privacy concerns due to the PAC points' lack of private spaces for PrEP services, particularly in public facilities. Some AGYW expressed discomfort being approached by providers for PrEP services while accessing PAC. These AGYW were uncomfortable being singled out from other clients in the clinic for PrEP services because they felt stigmatized for risky sexual behaviors.

> *It was difficult, everybody in the ward looks at you like, this one has been tested and has been found to have, so they need to make it more secretive. (AGYW IDI 13, TKA)*

Additionally, due to lack of private spaces at the hospitals, AGYW felt stigmatized due to inadvertent disclosure of PrEP use to other clients while admitted, as well as to peers, partners, and family members with inadequate PrEP knowledge mistaking it for ARV. This discouraged PrEP use in the PAC clinic, discontinuation, and poor adherence.

When I was given, I hid them, I went and put them inside the bag and they stayed there and I never removed them until the day I was discharged. I started swallowing it when I was at home. Just like that because I did not want to be seen by people. (AGYW IDI 02, TKA)

Most participants suggested improving facility structures such as designing private consultation rooms at different PrEP delivery points to mitigate stigma among AGYW. Further, to promote PrEP awareness saturation and uptake among AGYW, most participants recommended continuous PrEP counseling within facilities and community, the use of youth-friendly IEC materials, and youth champion/peer mentor groups.

Burden: Ease or difficulty participating in PrEP integration into PAC

Theme 1: Inadequate staffing, high staff rotations and turnovers influenced efficient PrEP delivery and uptake.

Inadequate staffing

Most providers indicated that only a few PAC providers received training on PrEP integration into PAC due to staff shortages experienced in facilities. This was due to public facilities experiencing extreme staff shortages due to inadequate providers to offer care for the overwhelming number of patients with competing needs. As a result, PAC clinics experienced challenges offering PrEP services whenever trained providers were off duty, thus losing opportunities to initiate PrEP for AGYW willing to use PrEP. Additionally, due to staffing shortages, most providers reported experiencing burnout due to predetermined work targets and serving clients in other departments alongside providing PrEP services. This influenced providers' willingness to provide integrated PrEP services and ability to offer quality services to AGYW promptly, resulting in long wait times.

The other challenge is the burden, they have the back services to provide, then an addition of PrEP counseling, so the workload sometimes is too much and some will be so negative and will not even be willing to offer those counseling. (Provider FGD 02, TKA)

Staff rotation and turnovers

Further, most participants expressed high staff rotations and turnovers among trained PAC providers, which resulted in a knowledge gap in PrEP delivery, impeding seamless PrEP delivery. As a result, this situation necessitated incoming providers' training on integrated PrEP delivery, which resulted in inefficiencies in PrEP delivery.

Those providers with an idea why we should give clients PrEP are taken to other departments and we are left with the ones who haven't been trained. So, I think the best thing is to train more providers (Provider, FGD 02, TKA)

To bridge the gaps caused by staff rotation, turnover, and off-duty time, most participants suggested provider capacity building, employing additional providers, cross-selling, and attitude transformation as essential. Additionally, components technical support, and regularly sharing

provider feedback across facilities on delivery experience—including challenges and facilitators for ease of delivery— were suggested to allow for cross-pollination learning toward improving efficient delivery.

Theme 2: Difficulties taking PrEP daily, side effects, monthly follow-ups, low self-HIV risk perception, and fear of HIV tests influence PrEP service acceptance.

Due to their sole interest in PAC services, some AGYW were hesitant about PrEP services. Following this, most providers reported approaching a large number of PAC clients for PrEP counseling while only initiating a few clients on PrEP, discouraging them from offering PrEP services. As a result, private clinic providers with predetermined goals for offering other services besides PrEP felt that providing PrEP took up most of the time spent on reaching those targets.

> *One thing that stood out for me was getting discouraged because I used to tell them and they continuously kept refusing to uptake, it made you feel like "Maybe I'm not doing enough, maybe it's something they can't take." But one day when like two people at the same time accepted PrEP, I was like okay. (Provider FGD 01, TKA)*

Almost all AGYW indicated that PrEP pill size, daily use, and packaging were stigmatizing, making PrEP adherence difficult. These AGYW suggested developing other PrEP formulations such as long-term injectables or implants, to increase use and adherence. Besides, PrEP pill size and packaging, as well as PrEP couple counseling considerations were made.

> *I haven't seen PrEP being injected. If it was injectable such that once you are injected, you stay with it, then again you can come back for the injection, because sometimes, this one for swallowing is tricky. (AGYW IDI 13, KSM)*

Discussion

To our best knowledge, this is the first qualitative study to explore the acceptability of PrEP integration into post-abortion care points among young women receiving pregnancy loss care in Kenya. Although participants had mixed feelings about PrEP delivery among AGYW accessing PAC, our study found that the integrated PrEP program was highly acceptable (2) since it was considered an effective and timely intervention in reducing high HIV incidence cases among Kenyan AGYW. This acceptance was due to the intervention's components that were deemed critical in improving the ease of access and reach for HIV prevention. These components include integrated PrEP services, which include comprehensive SRH, HIV, and PrEP counseling, along with PrEP awareness creation, actual delivery and stigma reduction (3,4,7,8). Furthermore, among the factors identified to positively or negatively influence the efficient PrEP integration into PAC services included: (1) providers' competence in offering integrated PrEP services; (2) staffing; (3) facility structure and operation, such as the availability of safe/private spaces, commodity

management, and reporting systems; (4) AGYWs' confidence in using PrEP; and (5) attitudes toward PrEP and PAC services.

Our study adds to the evidence that provider training enhances competence and confidence in service delivery, influencing service utilization (24,25). The integrated PrEP program training, which included continuous technical support and medical education with a focus on HIV and PrEP counseling, PrEP delivery and awareness, and HIV testing, was found to be a key facilitator of not just PrEP delivery but also PrEP acceptance in this study (25). Findings revealed that providers delivered PrEP services that suited the needs of the AGYW including a friendly and non-judgmental provider approach, confidentiality, and high-quality comprehensive reproductive health and PrEP counseling services (24,26). This was critical for the AGYW in identifying their HIV risk, the need for PrEP services and influenced their decision for PrEP use, adherence to the follow-up visits, and PrEP continuation as well as willingness to refer their peers. However, inadequate staffing, busy schedules and workload did not align with training time, particularly in public facilities, resulting in only a few providers trained to offer PrEP services. These circumstances hindered the capacity to provide PrEP services at PAC points resulting from rotations, turnover, and off-duty schedules among trained providers. These findings highlight the importance of adequate staffing in providing efficient services to improve service utilization. Additionally, it reveals that all cadre provider training is critical to ensuring the efficiency of sustained PrEP delivery at PAC sites through cross-selling to optimize on PrEP opportunities (24–26). Moreover, it emerged that attitude change training was essential for promoting PrEP uptake and providing high-quality PrEP services among AGYW.

While PAC points were preferred for PrEP initiation with a preference for FP and MCH for follow-up, like other studies, our study showed that AGYW might be discouraged and reluctant from accessing services —in this case, PrEP—from these care delivery points due to stigma associated with visiting them, such as being perceived as sexually active (2,15,27,28). Additionally, AGYW showed reluctance to get refills from PAC due to their wish to avoid the trauma and stigma associated with PAC experiences (2). The substantial age gap between the AGYW and providers at the delivery care points and the clients served was another significant concern among the AGYW. PrEP would be highly acceptable if private/ youth-friendly spaces were availed to cater for the needs of the AGYW- (15). Also, participants recommended delivering PrEP from locations other than facilities, such as community pharmacies and private clinics (7,8,29,30). Further, findings revealed that to improve accessibility and reach of PrEP for AGYW who could benefit the most, it is critical to offer PrEP services as part of the routinely delivered services across the various care delivery sites in facilities (3,15). Each facility's distinct structure and operation, such as the availability of private areas for PrEP services delivery, commodities management, and reporting systems, impacted PrEP delivery and acceptability readiness. In contrast to facilities without integrated services, especially public facilities, which had to devise means of getting PrEP supplies to the ward and reporting systems, those with integrated service delivery systems had an easier time integrating PrEP into PAC services. Similar to other studies, suggestions on adopting

consolidated electronic medical records systems (31) and direct to pharmacy PrEP delivery models (32) were recommended.

Similar to studies, PrEP stigma and bill burden influenced PrEP use. Defined by societal and individual norms, perceptions and stigma about PrEP use among AGYW influenced interest in PrEP delivery and use (2,27,33,34). Similar to earlier research, this study found that PrEP use among AGYW was highly stigmatized since it was associated with multiple sexual partnerships (28,33). Additionally, due to the size and packing of PrEP, it was mistaken for HIV medication, which resulted in stigma and low acceptance among AGYW. Similar to existing literature, participants recommended using outreach and health talks to saturate PrEP information throughout the community. As indicated by participants, difficulty in daily use, pill size, and side effects negatively impacted PrEP use because they either forgot or had difficulties swallowing pills, and experienced side effects that interfered with their schedules (2,33,34). To increase future PrEP uptake, developing additional PrEP alternative formulations is crucial for AGYW to select options that suit their needs (35). This study's findings align with previous work that showed providing product choice by having multiple PrEP therapies like long-term injectables or implants and monthly pills would enhance uptake, use, and continuation (34,35).

Strengths and Limitation

This study explored the potential to integrate PrEP into PAC for at-risk HIV AGYW who accessed PAC, an area with limited data, to maximize PrEP benefits in curbing new HIV infections. The study has a large sample size spread across different geographical regions, allowing for rich data. However, this study is limited to the target population since it only focused on AGYW who sought PAC services from partner facilities and were receptive to PrEP, leaving those who declined PrEP offers or did not access PAC services. Additionally, because the KEMRI Kisumu site demographics were not collected, we provided participant demographics for the KEMRI Thika site.

Conclusion

Integrating PrEP services into routine PAC services was highly acceptable as a novel approach to expand the reach of PrEP services to minimize HIV infection among Kenyan AGYW who could benefit from it the most. Therefore, scaling-up the integration of PrEP into PAC would improve reach for PrEP services among at-risk AGYW. However, to enhance PrEP reach and efficiency from inside and outside PAC points and facilities, additional strategies are needed. Increasing staffing, integrating medical reporting systems, using direct-to-pharmacy, creating a safe, private space for AGYW, and integrating PrEP as part of routine care at all care delivery points are vital. In addition to training, technical support and supervision are essential. Additionally, enhancing PrEP delivery to include PrEP delivery in communities and private clinics would broaden the reach of PrEP among AGYW unable to access facilities for various reasons.

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