Substance Abuse Treatment, Prevention, and Policy

REVIEW

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# A qualitative pilot study exploring the acceptability of a peer provider delivered substance use brief intervention from the perspective of youth in Kenya

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## Abstract

**Background** Substance use disorders are prevalent among youth in sub-Saharan Africa (SSA), yet treatment resources are scarce. Peer provider delivered brief interventions (BIs) represent an affordable and potentially scalable strategy for addressing youth substance use disorders. The goal of this study is to assess the acceptability of a peer provider delivered substance use BI from the perspective of youth in Kenya.

**Methods** We conducted qualitative semi-structured interviews with youth participants ($n=25$) to explore acceptability of a substance use BI. Youth were participants in a two-arm mixed-methods pilot randomized controlled trial (RCT) investigating the feasibility of a peer provider delivered single-session substance use BI for youth aged 15–24 years with moderate-risk substance use. The semi-structured interviews were conducted three months after the BI was delivered and were guided by the Theoretical Framework of Acceptability (TFA). Qualitative data were analyzed through thematic analysis.

**Results** We interviewed 25 of 38 participants in the BI arm, 18 males and 7 females; 15 were ages 18–24 years, and 10 ages 15–17 years. *Affective attitude*: Most youth reported that they enjoyed the session content and enjoyed interacting with the peer provider. *Burden*: Most youth felt that it was easy to understand the session and participate in it. *Perceived effectiveness*: Most of the youth perceived the intervention to be effective in helping them reduce substance use and improve their well-being. *Ethicality*: All youth perceived that the counselling session fit in with their goals and values. *Intervention coherence*: Most youth understood the overall goal of the intervention. They reported that the goal of the intervention was to help youth stop substance use, and to bring about behavior change. *Opportunity costs*: Some youth reported that they had to forgo other activities to attend the session, such as work, school, sports, gaming, visiting family, or house chores. *Self-efficacy*: Most youth felt confident about being able to cut down or stop using substances following the intervention.

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**Conclusion and recommendations** Our findings indicate that the peer provider delivered single-session substance use BI was acceptable to youth. The youth recommended that follow-up sessions be provided to ensure sustained behavior change. This study supports the utility of the TFA in exploring acceptability of a substance use intervention from the perspective of young people.

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**Keywords** Peer provider, Substance-related disorders, Acceptability, Brief intervention, Adolescent, Kenya

**Text box 1. Contributions to the literature**

- The acceptability of substance use brief BIs for youth globally and in sub-Saharan Africa (SSA) is not well explored, yet BIs present a scalable public health strategy for addressing substance use problems.
- This study adds to existing literature by providing a comprehensive description of acceptability of substance use BIs from the perspective of youth in SSA. Acceptability was explored, guided by Sekhon's Theoretical Framework of Acceptability, which consists of seven constructs including affective attitude, burden, perceived effectiveness, ethicality, intervention coherence, opportunity costs, and self-efficacy.
- The study also extends existing literature by providing additional support for the utility of Sekhon's Theoretical Framework of Acceptability and provides recommendations for further refining the framework.

## Background

The problem of substance use among youth in sub-Saharan Africa (SSA) is a pressing one. According to a recent meta-analysis, the pooled lifetime and 12-month prevalence of any substance use among young people in SSA were found to be 21.0% and 18%, respectively [1]. In Kenya, a nationwide survey conducted in 2022 found that the 12-month prevalence of substance use disorder (SUD) was 5.8% for alcohol use disorder, 1.9% for tobacco use disorder, 2.6% for khat use disorder, and 2.0% for cannabis use disorder [2].

Unfortunately, multiple barriers to treatment for substance use problems exist throughout SSA, including limited funding for SUD treatment and prevention [3], scarce and costly SUD treatment services [4, 5], and a limited SUD workforce [3, 6]. These barriers highlight the importance of finding practical and context appropriate solutions for addressing youth substance use problems in SSA.

Substance use brief interventions (BIs) have the potential to overcome the barriers highlighted above. Substance use BIs are typically delivered over 1–4 sessions and are based on motivational interviewing (MI) principles and psychoeducation [7]. Their main goal is to motivate the recipient to initiate behavior change or engage in more intensive therapy [7]. Over time, however, researchers have incorporated additional components into BIs such as cognitive behavioral therapy (CBT) [8], as well as strategies for addressing intimate partner violence and risky sexual behavior [9], to better address the mental health and social challenges that often co-occur with problematic substance use. While these "enhanced BIs" should strictly be referred to as brief therapies [10], they are often described as BIs in the research literature [11] and in practice [10].

BIs can be delivered by a wide range of providers—including, for example, healthcare workers, teachers, and lay providers—and can be delivered in a wide variety of settings such as hospitals, schools, and community settings [11]. Task-shifting approaches, such as the use of lay providers, is a particularly important strategy in resource scarce regions like SSA. Peer delivery is of particular interest for lay-delivered BIs, because peer providers have the potential to improve the acceptability and impact of interventions through shared experiences, shared youth culture, and trust. In this paper, we will describe the acceptability of a peer delivered single-session BI based on MI principles. The BI tested in this pilot has been described in more detail elsewhere [12]. Available scientific literature suggests that single session BIs are effective for reducing substance use among both youth and adults in Africa [11]. Peer delivery was selected as an implementation strategy to overcome staffing challenges in African healthcare settings [13].

In 2010, the World Health Organization (WHO) published a manual for integrating BIs into primary health care to help address the rising burden of harmful substance use globally [14]. Following this, a multinational study was conducted to establish the efficacy of BIs. The study was conducted among 15–65-year-olds in four countries—Australia, Brazil, India, and the US—and showed efficacy for moderate-risk substance use [15].

Since then, several authorities have recommended BIs for addressing substance use among adolescents and youth. In its International Standards for Drug Use Prevention, the United Nations Office on Drugs and Crime (UNODC) recommends the implementation of BIs to address substance use for older adolescents [16]. The American Academy of Pediatrics recommends the incorporation of BIs in routine care for adolescents [17].

Amid these recommendations, it is important to conduct process evaluation of BIs to determine how they may be translated into practice in specific contexts [18]. Assessing acceptability is an important aspect of process

evaluation [19]. It entails exploring how well an intervention will meet the needs of and be received by the target population (e.g., recipients, providers, and policy makers) [19–21]. Findings regarding acceptability can be useful for refining the intervention content, developing an implementation strategy, and for understanding how and why the intervention works [19–21]. All these would be important for the scale-up and uptake of BIs [19–21].

Few studies have investigated the acceptability of BIs from the perspective of youth. Prior studies have explored youth perceptions on BI providers [22, 23], BI content [22], and BI effectiveness [23–26]. Within Africa, Carney et al. [24] investigated the acceptability of a three-session BI for youth with substance use problems. The BI was comprised of two sessions for the adolescent based on principles of MI and CBT, and a single session for the parent—the goal of which was to encourage effective parenting behaviors [24]. The authors found that the intervention provided a safe space for youth to talk about their challenges with substance use, and that the BI motivated them to reduce or quit substance use [24]. Our previous pilot work in Kenya found that youth liked a single-session BI (based on MI and psychoeducation principles) and enjoyed their interactions with the peer providers [12].

While these findings are important, current understanding suggests that acceptability encompasses a broader set of constructs than those investigated in prior literature. The goal of this study is to examine acceptability of a substance use BI from the perspective of youth, guided by Sekhon's Theoretical Framework of Acceptability (TFA). The framework consists of seven constructs including affective attitude, burden, perceived effectiveness, ethicality, intervention coherence, opportunity costs, and self-efficacy [21]. The definitions and operationalization of TFA constructs are provided in the methods section of this paper. The TFA has been applied to explore acceptability of various interventions including a BI to prevent self-harm among adults in the United Kingdom (UK) [27], a phone-based intervention for managing adult diabetes in Sweden [28], a surgical intervention for adults in Australia [29], and an intervention to prevent violence against adult women in Ghana [30]. We did not find any study that had utilized the TFA to explore an intervention targeting youth or exploring acceptability of a substance use intervention.

The goal of this work is to evaluate the acceptability of a peer provider delivered BI for young people in Kenya. Through this work we also hope to provide additional support for the utility of the TFA. This work will ultimately facilitate translation of the peer provider delivered substance use BI into practice.

## Methods

### Overview of the larger study and brief intervention

The current qualitative study was part of a larger mixed-methods pilot randomized controlled trial (RCT) to investigate the feasibility and acceptability of a peer provider delivered single-session substance use BI for youth in Kenya. The pilot BI was conducted at the Rafiki Center of Excellence in Adolescent Health at Moi Teaching and Referral Hospital (MTRH)—a clinic initially set up to provide comprehensive youth-friendly services to adolescents living with HIV, but which has over time expanded to offer services to a broader range of youth. The clinic is run within the Academic Model Providing Access to Health Care (AMPATH) [31]. AMPATH is a large HIV and chronic disease program in western Kenya and is a partnership among MTRH, Moi University, and an international academic consortium [31].

Youth were eligible for the BI if they were aged 15–24 years and had moderate-risk substance use. We used the Alcohol Smoking and Substance Involvement Screening Test for Youth (ASSIST-Y) to identify youth with moderate-risk substance use. Scores corresponding to moderate-risk substance use on this tool are as follows: tobacco products [2–11], alcohol [5–17], cannabis [2–11], cocaine [2–8], amphetamine-type stimulants [2–8], sedatives [2–6], hallucinogens [2–8], inhalants [2–8], opioids [2–6] and 'other' drugs [2–6]. Any youth with high-risk use for at least one substance were excluded from the BI and referred to the Alcohol and Drug Abuse clinic at MTRH. Youth presenting for care at the Rafiki clinic were screened with the ASSIST-Y for substance use. Eligible youth were then informed about the BI pilot RCT procedures and assent/consent was sought, using English and/or Swahili as preferred by the youth. For youth aged 15–17 years, parental/guardian consent was obtained in addition to youth assent. Consenting/assenting was done in a private room within the clinic. Seventy youth participated in the larger BI pilot RCT: 76% ages 18–24 years and 24% ages 15–17 years; 64% male and 36% female; and mean ASSIST-Y score 8.9. Among these 70 youth, 11 (16%) were HIV negative, 46 (67%) were living with HIV, and 12 (17%) did not know their HIV status. Thirty-eight and 32 youth were randomized to the BI and control arms, respectively. This qualitative study recruited from the BI arm of the pilot RCT.

The BI included a single face-to-face 20-minute session delivered by a peer provider and adapted from the ASSIST-linked BI manual developed by the WHO [14]. Details of the BI and the adaptation process have been described elsewhere [12, 32]. Briefly, the BI is based on the FRAMES model (i.e., providing Feedback on screening results; ensuring Responsibility on the part of the youth; giving clear Advice to stop/cut down substance use; giving a Menu of options on alternative healthy

behaviors to engage in; expressing Empathy; and encouraging Self-efficacy); and MI techniques (creating discrepancy and ambivalence, using open-ended questions, rolling with resistance, reflective listening and summarizing) [14]. The goal of the BI is to motivate intervention recipients to make changes regarding their substance use [14]. A female peer provider (aged 24 years) was selected to deliver the BI for this pilot RCT. She was one of two peer providers who had been trained to deliver the BI in a previous open trial [12]. She was selected to participate in the current pilot RCT based on her availability and willingness to participate in the study. The peer provider's training included a five-day training on MI skills and the BI as part of the prior open trial [12], and a two-day refresher training in preparation for the current pilot RCT. Details of the five-day training have been described [12]. Fidelity to the BI was assessed by audio-recording all intervention sessions and rating them using a checklist of key elements of the BI. Regular supervision meetings were held with the peer provider to provide continual training and to ensure fidelity to the BI. Feasibility of a future definitive trial and estimates of intervention effect will be reported elsewhere. The current study reports the acceptability of the BI from the perspective of youth using qualitative semi-structured individual interviews guided by Sekhon's TFA.

## Current study: qualitative views of youth on the acceptability of peer delivered BI

### *Participants and data collection*

In November 2022, we contacted all youth ($n = 38$) who received the BI and invited them to share their views on the intervention. Out of the 38 youth who received the BI, 25 youth agreed to participate in the feedback interviews. Interviews were conducted with these 25 youth, including 18 males and 7 females. Fifteen youth were aged 18–24 years, and 10 youth were aged 15–17 years. Mean ASSIST-Y score was 9.28. Six youth (24%) were HIV negative, 12 (48%) were living with HIV, and seven (28%) did not know their HIV status.

Between 22nd November and 1st December 2023, we conducted individual semi-structured interviews with these youth to investigate BI acceptability. The semi-structured interviews were conducted in a confidential, private room at MTRH three months after youth received the intervention.

The semi-structured interview guides were developed based on Sekhon's TFA, structured around its seven component constructs: affective attitude, burden, perceived effectiveness, ethicality, intervention coherence, opportunity costs, and self-efficacy [21]. Table 1 shows how the TFA defines the constructs, and how they were operationalized for this study.

The interview sessions were conducted by two experienced qualitative interviewers who were not part of the investigator team. The interviewers were both bachelor's degree level psychologists who had over four years' experience each in conducting qualitative interviews with youth in several research projects at AMPATH. Interviews were conducted in English and/or Swahili according to participant preference. Following the consenting process, an icebreaker was used to ensure a relaxed atmosphere. Interviews lasted an average of 51 min and were audio-recorded. Participants were reimbursed USD 4.00 for their time.

### *Data analysis*

The audio-recorded interviews were transcribed verbatim. Swahili transcripts were then translated to English. The transcripts were uploaded to the Dedoose online platform for analysis. F.J., M.O., L.A.E., Y.O., and the two facilitators who conducted the interviews reviewed three transcripts as a team and developed a preliminary coding structure, which incorporated both deductive codes based on TFA, and inductive codes that emerged through close reading of participant narratives. The preliminary

**Table 1** Operationalization of TFA constructs for this study

| TFA construct | Definition per TFA (21) | Operationalization of constructs for this study |
|---|---|---|
| **Affective attitude** | "How an individual feels about taking part in an intervention" | How much the youth enjoyed/or did not enjoy participating in the BI and interacting with the peer provider. |
| **Burden** | "The perceived amount of effort required to participate in the intervention (time, expense, and cognitive effort)" | What was easy or hard to understand about the BI content. Perceptions about the duration of the BI session. |
| **Perceived effectiveness** | "The extent to which the intervention is perceived as likely to achieve its purpose." | How helpful the BI was. Any changes to substance use, relationships with family and friends, finances etc. following the BI. |
| **Ethicality** | "The extent to which the intervention has good fit with an individual's value system" | How well the BI fit in with the youths' goals and life plans. How well the BI aligned with the youths' culture and values. |
| **Intervention coherence** | "The extent to which the participant understands the intervention, and how the intervention works" | The youths' views about the goals of the BI. |
| **Opportunity cost** | "The extent to which benefits, profits, or values must be given up in the order to participate in an intervention" | Changes that the youth had to make to their schedules e.g. work and school to be able to participate in the BI. |
| **Self-efficacy** | "The participant's confidence that they can perform the behavior required to participate in the intervention". | How confident the youth who received the BI were in being able to reduce or stop using substances in the future? |

**Table 2** Qualitative themes and sample excerpts from participant narratives

| Themes | Sub-theme | Sample excerpts from participant narratives |
|---|---|---|
| **Affective attitude** | Perception of peer-provider | *"I thought we get along more with a young person doing it as opposed to having an older person, and I'm young. With an older person, it will be more of a lecture and not counselling. [With the peer provider] it seemed like a talk, she was advising me, I respond. But if it was an older person I will just say yes or no. But with her I was talking." (Male, 15 years).* |
| | Perception on session | *"I enjoyed the advice and also it made me know of the effects of drugs and I realized that using these things is not good." (Male, 15 years).* |
| **Burden** | Cognitive effort | *"The effects of drugs, causing ailments [was easy to understand]… that if you use drugs, you can't do well in school." (Male, 16 years).* |
| | Time | *"It was around thirty minutes or twenty minutes…it was worth it." (Male, 15 years).* |
| **Ethicality** | | *"[The counselling session fit in with my goal of becoming a doctor.] When I sat down and asked myself, if I wanted to study medicine and use substances it would be difficult. It is either I leave one or the other. So, I decided that even if it is in small amounts, I should leave it to pursue medicine well. [The counselling session also fit in with my goal of helping my parents]…because, if you use substances, you cannot help your parents because all the money that you have you spend it on drugs. So, I saw that there was no way I could use alcohol and help my parents. One would have to fall." (Male, 18 years).* |
| **Intervention coherence** | | *"[The goal of the session]… was to educate the youths on the dangers and side effects of drug and substance abuse. So, most youths use drugs or anything, so it was to help, rehabilitate, teach the side effects and things that they should do and shouldn't do." (Male, 20 years).* |
| **Opportunity costs** | | *"I had to sacrifice. On that day we were to go to…play football but I came here." (Male, 15 years).* |
| **Perceived effectiveness** | | *"…The day after the…session, I was called to go for a bash. I have declined some… bashes. You think like, what am I even going to do? Some cheap alcohol and then… I let it just slide. Must I attend there? I think that because the next morning, I'm going to wake up with a bad hangover. So at least it has helped me reduce. I don't just go for anything."* |
| **Self-efficacy** | | *"I am confident I'll be able to stop it. Because I don't consider it a necessity. It's not a must I use it. And I like functioning normal…Because you may use [a drug]… and you end up saying stupid things…you end up destroying friendships and relationships with your close people. All because you used alcohol, or you abused something… It goes to the head. Yeah… you'll just not function normally." (Male, 21 years).* |
| **Recommendations to improve acceptability** | | *"Maybe after some time, you make another session to see the progress of the person. You know, sometimes you end up forgetting or maybe you have told me, you have explained, and I have understood then I get somewhere someone confuses me again, you see, when you give us, a period then call us again we can be like, I almost went back to this issue but at least I have been called and counselled again…. in the session, monitoring someone is nowhere. Especially for those who have been in several substance abuse, you see that this person is really addicted. So, they need several [sessions] for them to at least cut off." (Male, 22 years).* |

coding structure was applied to initial transcripts, with iterative review and discussion among the team to establish consensus around the refined codes. After consensus was achieved, coding was completed on all transcripts by the two facilitators who conducted the qualitative interviews, by going through the transcripts together and resolving discrepancies through discussion.

F.J. and the two interview facilitators completed subsequent steps of thematic analysis to identify themes from the data, using the codes guided by the TFA and the research questions of the study. Themes and sub-themes were developed and refined through iterative discussion amongst F.J. and the two facilitators. The codebook has been provided as a supplementary file.

#### *Ethics approval and consent to participate*

**Ethical approval** to conduct the study was obtained from the MTRH/ Moi University Institutional Research Ethics committee (IREC) and the Indiana University Institutional Review Board.

Prior to data collection, written informed assent was obtained from the youth aged 15–17 years, along with the written informed consent of their parents. Written informed consent was obtained from youth aged 18–24 years.

## Results

Eight overarching themes were developed. Seven are based on the constructs of the TFA, and an eighth centers on participant recommendations to enhance acceptability. Themes and illustrative excerpts from participant narratives are presented in Table 2, with additional excerpts incorporated in the presentation of each theme below.

### Affective attitude

Many youths reported that they enjoyed interacting with the peer provider. They reported that they felt comfortable interacting with the peer and were willing to disclose their substance use to them because they were age-mates.

> *"I enjoyed the interaction with the peer [provider]. She was asking questions in a way I would also want to ask others given the opportunity. Also, she is my*

*age mate, I can't hide anything from her. Whatever she wants I will tell her." (Male, 21 years).*

A few youths had initial doubts about being counseled by an age-mate, but their fears were allayed during the sessions.

*"When I first saw [the peer provider], I saw her walking around and didn't know that she was the one doing the [intervention]…. I just saw her as a normal girl…as a child. [After the session, I thought that] she was okay. She advised me well… She is good and she understands. I thought she was not going to be able to counsel me well. But after she started giving me the advice and finished, I saw that she could [conduct the counseling]." (Male, 17 years).*

Youths reported that they enjoyed the session content and felt safe during the session.

*"…I …enjoyed the session. It was good. I was talking. You know, it's not easy to find someone who can just talk to, anything because it was open enough. You don't just talk about anything then. But it felt safe." (Male, 15 years).*

A few youths had concerns about the session. One youth said that the session was uncomfortable and felt like an "interrogation."

*"[The session] shouldn't feel like I'm being interrogated. Because maybe I'm telling the police I use cannabis and then I get arrested there. Because it gets to a point it becomes so uncomfortable and I'm like, why are you so interested in knowing about it. So, it shouldn't feel like an interrogation, it is so uncomfortable". (Female, 19 years).*

### Burden

**Cognitive effort** Youths felt that it was easy to understand the session content and the language of the intervention.

*"The teachings were easy because they don't use complex language. They use a language that the youth understand." (Male, 15 years).*

A few youths reported that it was not easy participating in the session. They felt that it was difficult to be honest about their substance use or to relive past events related to substance use.

One youth said:

*"Making that decision to answer either yes or no. You sit there and think maybe I want to hide [taking substances] … from her. Making that decision was hard." (Male, 18 years).*

Another youth described:

*"What was hard was when they asked you to explain the effects that you didn't like. For example, when you use alcohol and find yourself in situations that you didn't like. It was hard. It was hard not because you don't know them, but because they are funny dramas. So, it is hard to explain. They are things that you can explain but they are things that you regret yourself." (Male, 21 years).*

When asked what was hard about the BI, a few youths reported that it was difficult to stop using substances following the intervention. One youth said:

*"Stopping [substance use was hard] because of peer pressure, friends coming and lying to you. I realized that when I'm alone, I just stay without…stopping was [also] hard because out there, [there] is idleness…". (Female, 15 years).*

**Time** Many youth participants were comfortable with the amount of time the session took and were able to make time to participate in the session (as presented in Table 2). Few youths had concerns about the amount of time needed to participate in the BI, expressing that the session took too long.

**Ethicality** All the youth expressed that the counselling session fit with their goals and values (see Table 2). Many youths had life goals related to career and family, including goals to improve the lives of their family members.

*"[My life goal is] to build my mother a house, I have always said that I will build her a house. Also buy her a car when I become a doctor." (Male, 17 years).*
*"First of all, I want to pay for my brother's education. I have a younger brother who just finished his Form Four, but we have a younger one and mum isn't able to take care of them. So, I'm the eldest [and] I should look after them. My mum is also suffering, and she comes to the hospital here. So, she is stressed [and] I'm trying to make her feel free. [I want] to ease her of her burdens like paying for my education." (Male, 21 years).*

The youth also described career goals, for example, to become doctors, farmers, fashion designers, and journalists. Many youths reported that they highly valued their health and wellbeing, families, education, and career goals. Some reported that they valued contributing to the community, and more material values like housing.

**Intervention coherence** Many youths understood the goal of the intervention, which they expressed was to help youth stop substance use, and to bring about behavior change (see Table 2).

**Opportunity cost** The youths expressed mixed views about how much the intervention interfered with their personal schedules. Some youth reported no interference at all and that they had nothing else to do at the time they attended the session. Other youth reported that they had to forgo activities, such as work, school, sports, visiting family, or house chores to attend the session. As one youth, who had to close their shop to attend the session, described, *"it wasn't a big deal,"* because *"what I was coming to do was more important." (Male, 21 years).*

**Perceived effectiveness** Many youths perceived the intervention to be effective in helping them reduce substance use and improve their well-being. Following the intervention, many youths reported an ability to gain control of and reduce substance use.

> *"[The session helped me] to avoid alcohol… I was so much into [alcohol], going to clubs and parties. Nowadays I don't go." (Male, 17 years).*

Many youths reported that the session helped them cut off unhealthy friendships:

> *"[Your peer providers tell you that] you can't go for a party if you haven't drunk. You can't be at a party and not drink; they will discriminate against you. So, I would say that session makes you understand like it's not a must. Even if your friends are forcing you that you must take alcohol to be cool or be like them, better let those friends go. So, for me, I have let go of a couple of friends so far." (Male, 22 years).*
> *"I have changed friends. By changing friends, I have changed almost 95% of everything because friends are the ones who make you waste money on drugs." (Male, 24 years).*

Following the intervention, many youths reported improved relationships with family and friends.

> *"[Before the session] … Every day I used to have a case. Even now they tell me that I have changed.*
> *My dad and mom. They used to come and knock in the evening and find I'm not there, I will return in the morning. But now I'm just at home. [Our relationship nowadays] …has grown a lot. Now I can wash my clothes near them. I used to never stay near them. Right now, I stay with them in the sitting room then go to my house." (Male, 17 years).*

Following the intervention, many youths reported improvements in work and school, and increased engagement in sports and other activities.

> *"It has helped in my performance. I went to school and concentrated; it helped me.*
> *When I was in Form Two, I never used to use drugs. I studied and performed well in Form Two. In Form Three, I used to get a B + and drop to a C+. Since I came here, I have stuck to my grade [which is a B+]." (Male, 17 years).*
> *My work had really gone down, but right now it's okay. [The session] helped me a lot. If I had continued with the drug abuse, smoking bhang, I wouldn't even have a job right now. It would reach a point where I would even eat the stock. I don't have anything to start with.*
> *(Male, 21 years).*
> *"What I increased was the times I played football. I wasn't playing all the time, but I started playing daily. Playing football helps you. Apart from physical health it helps you with stress, you go run around, get kicked, get angry, score a goal, at the end of the day you are tired you go to sleep well, the next day you wake up feeling fresh. You are not anxious or depressed. Even if you didn't eat it just passes by." (Male, 21 years).*
> *"… I have trusted in God more. I have participated in church more, unlike before." (Male, 15 years).*

Many youths reported better use of money following the intervention.

> *I can now manage my finances because I was using so much money on cannabis.*
> *(Female, 19 years).*

A few youths reported improved mood and sleeping and eating habits following the session.

> *"[The session] helped me get out of some of the problems I used to have. Now it is not like before…right now I am okay, I'm eating well. I used to not eat whenever I used [drugs]." (Male, 17 years).*
> *"… I used to get angry a lot [before the session] but now I'm okay." (Male, 17 years).*

A few youths reported that the intervention was effective in the beginning, but they later returned to using substances. One said:

> *"It helped at first, but we have stayed a long time. Of which I have used a little….it helped me at some*

*point… [but later] I forgot about [the things I had learned]." (Female, 17 years).*

**Self-efficacy** Many youths felt highly confident about being able to cut down or stop using substances following the intervention (see Table 2). In addition, many youths said that their confidence could be boosted by having more sessions.

#### Recommendations to enhance acceptability

Many youths recommended that there should be more sessions to foster sustained behavior change. One youth expressed the following:

*"It shouldn't take long. You know when I come once and then it takes two months I will forget those things. It should be after every week or every month." (Male, 17 years).*

Many youths recommended that the language of the intervention should be simplified even further to make it more understandable to them.

*"I would advise that even if it's in Kiswahili, it shouldn't be so heavy, you mix it a little with Sheng' [urban Kiswahili-English slang language]. So, you find that you might talk to someone in Kiswahili, and they know it, but don't understand it…" (Male, 24 years).*

Many youth participants recommended that the reach of the intervention be extended to the community so that many young people can benefit from it.

*"[I recommend] …reaching out to others, maybe advertisements or something or anything, just in town, placards, or flyers, or anything for them to just pop [into Rafiki] …. that will be good just for many to be reached. Because I think it was okay, having a peer [provider] was okay and acceptable to us. Yeah." (Female, 23 years).*

*"[I recommend that] …You can spread it around schools. Don't specify…that it has to be in Rafiki only. There are people out here who are going through the same thing, and they don't have that chance. They are not regular visitors of Rafiki, so they don't know. So, you should make it as something that you are going out there to talk to other teens. It might really help someone (Female 17 years).*

A few youths recommended that the session content be broadened to include topics such as how to deal with peer pressure, and how to manage mental health issues.

*"According to my understanding [many] youths are into drugs because of peer pressure and trying to fit in. They don't want to look like they are being left behind. When I look at the advice from the session, … there is nowhere they have mentioned friends. Friends are the root [cause]…once one is [away from those encouraging substance use] then at least they can start hearing advice (Male, 24 years).*

A few youths recommended that the intervention be delivered by someone with substance use lived experience. They recommended that the session incorporate content on lived experience.

*"There is this time you can be counseled by an age mate who has never done these things… Then there is the one who has been through that stage. I'd rather that one because they will know how to help you. The one who has never been through that stage might talk to you in a bad way that isn't helpful… [I recommend] …someone who has experienced the same problem and can relate to what I am going through. That would now be a good example. There is no reason to bring someone… who has never used drugs, and they start telling you, [about drugs] …because they don't know." (Male, 21 years).*

*"…also having real-life examples of people who successfully changed would make it more attractive." (Male, 15 years).*

## Discussion

We found that the TFA was useful for understanding the acceptability of a peer provider delivered substance use BI for youth in Kenya. Overall, the youth enjoyed the intervention, largely felt that it was easy to understand, and reported that it helped them reduce their substance use. Our findings on affective attitude, burden, and perceived effectiveness echo those of other studies. In the United States (US), Maslowsky et al. [23] found that high school students reported high levels of intention to stop substance use following a substance use BI [23]. Similar to our findings, youth participating in peer provider led interventions in Ghana [33], South Africa [34], and the UK [35], also reported positive interactions with the peer providers. Carney et al. [24], in a study exploring acceptability of a substance use BI from the perspective of youth in South Africa, found that the youth felt comfortable participating in the intervention, reported that the session provided "a safe haven," and reported that the intervention motivated reduced substance use [24].

Opportunity cost, ethicality, intervention coherence, and self-efficacy are not well explored in the literature. Our study therefore adds to prior literature by providing

data on these constructs. We found that most youth were willing to forego other obligations to attend the BI sessions, that most youth understood the overall goal of the intervention, and that the BI aligned well with their personal goals and values. Additionally, most youth reported that they felt confident about being able to cut down or stop using substances following the intervention. These findings indicate that the youth considered the intervention to be important to them, and this provides strong support for acceptability of the BI. Future studies in various settings should investigate these aspects of intervention acceptability to replicate our findings.

The youth liked interacting with the peer providers and expressed a preference for delivery of the BI by an age-mate rather than by a much older adult. The peer provider who delivered the BI in this study was aged 24 years. While there is an age gap, for example, between a 15-year-old BI recipient, and a 24-year-old peer provider, as youth, they are likely to still share common experiences such as peer pressure, challenges with school, as well as relationship issues with family and friends. Additionally, having an older youth (>18 years) deliver the BI, aligns with labor laws in Kenya [36]. Other studies exploring feasibility and acceptability of peer delivered BIs for youth have reported that younger adolescents are able to interact well with older peer providers [37].

Importantly, this study includes evidence for potential mechanisms by which BIs may bring about a change in substance use for youth in Kenya. The youth reported that information on substance use harms was most helpful, and that avoiding friends who use substances was an effective strategy for helping them stop or cut down substance use. Additionally, the youth found that the interaction with the peer provider was helpful. Globally, little work has been done to explore mechanisms by which BIs work. In a narrative review, Gaume et al. [38] found that several mediators had been explored, particularly in high-income country settings, but that findings remained inconclusive. Investigated mediators have included personalized feedback, decisional balance, advice to stop or reduce use, education on negative effects of substance use, among others [38]. We did not identify studies exploring mechanisms of BI change for youth in Africa, and future work should focus on this area so that utility of BIs for youth in the region is maximized.

One concern raised by the youth in this study was the perceived need for follow-up sessions to reinforce decisions made about stopping or cutting down substance use. The youth further recommended broadening the intervention scope to include content such as handling social pressure, and mental health issues. In our prior pilot work, the youth recommended that the number of sessions be increased to allow them to learn more about substance use [12].

The original BI as proposed by WHO included MI content and education on substance use harms [14]. Over time, the content areas of substance use BIs have been expanded to include components such as problem-solving therapy [39, 40], cognitive behavioral therapy [24], and addressing specific relevant challenges, such as risky sexual behavior, and intimate partner violence [41]. These adaptations recognize that substance use has multifactorial etiologies and anticipate that multi-component BIs addressing contextually relevant issues may be more likely to result in better outcomes. One study, conducted among adolescents in the US, found that problem-solving skills mediated the reduced substance use found in the intervention [42]. In carrying forward our research work, we propose to add to the BI components addressing important context-specific issues, such as dealing with social pressure, as this emerged as an important finding in our study.

Another noteworthy concern raised by the youth is that the BI felt like an interrogation, and that this caused them to feel uncomfortable during the session. Similar feedback was reported by youth in an earlier pilot of the BI that we conducted [12]. In that study, some youth perceived the BI to be confrontational and reported that the session evoked negative emotions [12]. MI, the guiding principle behind BIs, is considered a non-confrontational and non-judgmental approach to guiding people towards behavior change [43]. The feedback from Kenyan youth concerning the BI highlights the need to re-examine the BI components for aspects that may be perceived as confrontational and adapt them to enhance appropriateness for this population. Additionally, prior to the BI, youth should be appropriately informed on the possible risk of experiencing negative emotions as a result of taking part in the intervention. Those who experience distress should be provided with empathy and support.

Broadly we found the TFA to be applicable for exploring acceptability of a substance use BI for youth. We noted a few gaps, however. First, the framework does not explicitly seek to understand potential unintended negative impacts of the intervention on participants. It is therefore left to the researchers when designing the interview to include questions that ascertain a balanced, and unbiased view of intervention effects. Indeed, in our interviews, we asked youth about how helpful the BI was and did not query possible negative impacts. A more recent framework developed by Casale et al. [44], the Accelerate Framework), which was specifically designed for assessing acceptability among adolescent African youth, splits the TFA construct "perceived effectiveness" into "negative perceptions" and "positive perceptions". The authors reason that including the "negative perceptions" construct will provide a greater understanding of barriers to intervention acceptability—information that

could be useful in improving the intervention. Our future work can draw on constructs from both the TFA and the Accelerate Framework in a complementary manner, in order to obtain an in-depth understanding of BI acceptability for youth.

Another aspect not addressed by the TFA, but which emerged from our findings, is the recommendation by many youths that the intervention is disseminated to reach other youth. We see this finding as a strong indicator of intervention acceptability. The Acceptability of Intervention Measure [45], a short, quantitative measure of intervention acceptability, does not include a question about whether the intervention recipient would recommend it to others. The quantitative Dissemination and Implementation Science Measure (Consumer Version), by contrast, contains three items that enquire whether the intervention recipient would recommend the intervention or encourage others to participate in it. We note that these items are listed in the 'adoption' module of the measures rather than the 'acceptability' module. We recommend that the TFA may be revised to capture "willingness to recommend the intervention" as a construct or sub-construct.

Finally, we made one adaptation to the framework. The self-efficacy construct defined by the TFA as "confidence that the youth can perform the behavior(s) required to participate in the intervention" could have best been explored at the time of the intervention. Because the interviews were conducted at 3 months post-intervention, we instead explored how confident the youth who received the BI were in being able to reduce or stop using substances in the future, as a result of the intervention.

### Study strengths and limitations

A key strength of this study is our exploration of BI acceptability using a theoretical framework which extends previous research on limited components of acceptability such as perceived effectiveness and affective attitude only [24]. Another strength of this study is that the interviews were conducted by facilitators who were not part of the investigator team, allowing for more honest and open responses, and reducing bias in interpretation.

One limitation of this study is that the larger pilot RCT was conducted in a volunteer sample from an adolescent clinic, and we interviewed 25 out of the 38 youth who received the BI. The views presented here, therefore, may not be generalizable to all youth in the community, or all youth who were eligible for the BI. A second limitation of this study is that the pilot BI had only one peer provider, making it difficult to differentiate positive feelings toward this peer provider or toward peer-delivery in general. An additional potential limitation is that, while the TFA expands our understanding of acceptability, it may not completely capture all components of acceptability. A final limitation is that the qualitative interviews were conducted three months post-intervention, and the participants had forgotten some details of the BI session. A strength of this timing of the study interviews, however, is that participants were able to speak to whether perceived intervention effects were sustained or not.

## Conclusion

Overall, our findings suggest acceptability of the peer provider delivered substance use BI for youth in Kenya. In addition, study findings provide important insights on refinements that can be done to further enhance BI acceptability. Our findings could also inform the design and adaptation of other mental health interventions for youth in SSA. This study supports the utility of the TFA in exploring acceptability of a youth substance use intervention, albeit with recommendations to extend this framework. Our future work will build on these findings to refine the intervention in preparation for a full-scale trial.

#### Abbreviations

| | |
|---|---|
| AMPATH | Academic Model Providing Access to Health Care |
| ASSIST-Y | Alcohol Smoking and Substance Involvement Screening Test - Youth |
| BI | Brief Intervention |
| CBT | Cognitive Behavioral Therapy |
| FRAMES | Feedback Responsibility Advice Menu of options Empathy Self-efficacy |
| HIV | Human Immunodeficiency Virus |
| IREC | Institutional Research Ethics committee |
| MI | Motivational Interviewing |
| MTRH Moi | Teaching and Referral Hospital |
| RCT | Randomized Controlled Trial |
| SSA | Sub-Saharan Africa |
| SUD | Substance use disorder |
| TFA | The Theoretical Framework of Acceptability |
| UK | United Kingdom |
| UNODC | United Nations Office on Drugs and Crime |
| US | United States |
| WHO | World Health Organization |

## Supplementary Information

The online version contains supplementary material available at https://doi.org/10.1186/s13011-025-00639-9.

Supplementary Material 1

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#### Author contributions

All authors took part in conceptualization of the study. F.J., M.A., E.K., J.B., G.K., M.O., and M.T. took part in overseeing data collection activities. F.J. M.O., L.A.E. Y.O. conducted qualitative data analysis. F.J. prepared the first draft of the manuscript. All authors reviewed and made contributions to the first draft and subsequent revisions of the manuscript. All authors approved the final manuscript.

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**Data availability**
The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

## Declarations

**Ethics approval and consent to participate**
Ethical approval to conduct the study was sought from the MTRH/ Moi University Institutional Research Ethics committee (IREC) and the Indiana University Institutional Review Board. All experimental protocols were approved by IREC and the Indiana University Institutional Review Board. Prior to data collection, written informed assent was sought from the youth aged 15–17 years. In addition, written informed consent was obtained from parents of youth aged 15–17 years. Written informed consent was sought from youth aged 18–24 years. All methods and study procedures were carried out in accordance with the Declaration of Helsinki.

**Consent for publication**
Not applicable.

**Competing interests**
The authors declare no competing interests.

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## Publisher's note