

“Moving forward with life’: Perceived acceptability and benefits of a brief alcohol-focused intervention for people receiving antiretroviral therapy in South Africa.

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Abstract

Background: In South Africa, like other low-and middle-income countries, interventions are needed to address the impact of hazardous drinking on adherence to antiretroviral therapy among people living with HIV (PLWH). Participant feedback about these interventions can identify ways to enhance their acceptability and potential impact. As part of a randomized controlled trial of a brief motivational interviewing and problem-solving therapy (MI-PST) intervention among PLWH who report hazardous drinking, we interviewed participants about their perceptions of this alcohol-reduction intervention.

Methods: The trial was conducted in HIV treatment clinics operating from 6 hospitals in the Tshwane region of South Africa. In the trial, 305 participants were randomly assigned to the intervention comprising four modules of MI-PST delivered over two sessions. We conducted qualitative in-depth interviews of participants' views about the acceptability and usefulness of the intervention for facilitating behaviour change on completion of the last intervention session and at the six-month study end-point. Twenty-four participants were interviewed after the final intervention session and 25 at the six-month follow up. Data were analysed using the framework approach.

Results: Three themes emerged from the interviews that reflect participants' perceptions of the acceptability and usefulness of this intervention. The first theme describes participants' perceptions of the acceptability of screening and brief alcohol-focused interventions for PLWH. The second theme describes participants' views of the usefulness of the intervention for reducing alcohol use and addressing life stressors. The third theme reflects participants' views on how the intervention could be modified for greater reach and impact.

Conclusion: Findings suggest that participants considered this intervention to be acceptable and useful for facilitating reductions in alcohol consumption. This study is the first to describe how PLWH applied the skills taught in the MI-PST intervention to manage and cope with daily problems instead of drinking heavily.

Introduction

Despite an extensive HIV prevention and treatment programme, South Africa continues to have a high incidence of new HIV infections [1]. To prevent the onward transmission of HIV, South Africa subscribes to UNAIDS' 90-90-90 strategy, namely that 90% of the South African population should be tested for HIV, 90% of individuals who test positive should receive sustained antiretroviral therapy (ART), and 90% of individuals on ART must attain viral suppression [2]. Hazardous alcohol use among people living with HIV (PLWH) who use antiretroviral therapy (ART) poses a threat to the attainment of these ambitious targets. Systematic reviews have demonstrated that hazardous alcohol use is associated with poorer adherence to ART, higher viral load, and greater likelihood of treatment failure and early death [3–6]. These findings highlight the importance of identifying and addressing hazardous alcohol use among PLWH.

Rates of hazardous are high in South Africa [7], where about 50% more alcohol is consumed than in the rest of Africa [8]. For people who drink, heavy episodic drinking is the norm – 71% of men and 34% of women report this pattern of drinking [8]. Studies have also shown high rates of heavy episodic drinking among PLWH who drink [9–11]. Given the impact of hazardous alcohol use on virologic control, there is a clear need to routinely screen PLWH on ART for hazardous alcohol use and to provide alcohol-reduction interventions among those who screen positive. A recent systematic review of 21 trials (8461 PLWH) provides evidence that brief interventions are effective for reducing the frequency of alcohol use, with interventions that focused exclusively on alcohol seemingly more effective than those that addressed alcohol as part of a multi-faceted HIV behaviour change intervention [12]. However, as only four trials in this review focused exclusively on alcohol, there is a need for additional comparative efficacy research of alcohol-focused interventions for PLWH [12]. In response to this need, we tested the efficacy of an alcohol-focused intervention for reducing alcohol consumption and improving ART adherence and HIV treatment outcomes among PLWH in South Africa [13].

This intervention combined motivational interviewing (MI) and problem-solving therapy (PST). The hypothesis was that maladaptive problem solving and inability to cope with stress underpinned hazardous alcohol use [14–15]. This hypothesis emerged from formative work which explored factors underpinning alcohol use among PLWH and its impact on ART adherence as well as openness to and preferences for alcohol reduction interventions [16–17]. The intervention included motivational elements to build readiness for alcohol behaviour change and PST content to help patients cope with life stressors, deal with negative emotions, and accept problems that cannot be solved without relying on alcohol as an avoidant coping strategy [18–19]. There is evidence that the combination of these two approaches is acceptable and effective for reducing hazardous alcohol use in South African patient populations [20–22]. During the intervention, the counsellor provides feedback on the participants' risk for alcohol-related harms, helps the participant set goals and identify barriers to change, and guides the participant in identifying life problems that may contribute to alcohol use while teaching the participant a structured approach to resolving these problems. Participants learn strategies for addressing problems that are important and resolvable, for managing negative thoughts, and for coping with important problems that are unresolvable. Participants are given opportunities to rehearse these new skills during the intervention and through take-home activities.

To better understand participants' responses to and interactions with this intervention, and in keeping with the Medical Research Council's guidelines for the evaluation of complex interventions [23], we conducted a qualitative process evaluation of the intervention from the perspective of the patient. Understanding patients' perceptions of the intervention may help explain how patients engage and apply the intervention material, for whom it works, and the context in which it is most effective. This can guide modifications to the intervention necessary for enhancing its appeal and impact [23]. This is particularly important for this study as the MI-PST intervention was condensed into four modules delivered over two contact sessions in contrast to the standard four modules, delivered over four sessions [20–22]. More specifically, this study aimed to explore participants' perceptions of the acceptability of the intervention (defined as patient satisfaction with the intervention structure and content) and perceptions of its

usefulness for facilitating behaviour change. We hoped that this evaluation would identify ways in which to modify the structure and content of the intervention to better address the context and therapeutic needs of PLWH who drink.

Methods

This qualitative process evaluation is nested within a larger randomised trial of an alcohol reduction intervention. The methodology of the larger study is described in detail elsewhere [13].

Participants and procedures

Participants were recruited from outpatient ART clinics operating within 4 secondary and 2 tertiary hospitals within the Tshwane district, in the Gauteng province of South Africa. The study was initiated in the early phases of decentralizing ART provision from hospital settings to primary care clinics. Thus, these hospital-based outpatient HIV clinics still served high numbers of stable patients on first line ART regimens. At each site, research staff approached people as they waited for their clinic consultations and provided them with a brief overview of the study. Interested individuals were referred to a fieldworker who described the study before obtaining written informed consent to screen for study eligibility. Participants who reported being HIV-positive; on ART for at least three months; at least 18 years of age; not currently on treatment for tuberculosis; not having participated in the formative phase of the study; living in Tshwane or within the clinic's catchment area; and who were hazardous or harmful drinkers, based on their Alcohol Use Disorders Identification Test-Consumption (AUDIT-C) scores (≥ 3 for women and ≥ 4 for men) were invited to participate in the study.

Of the 3054 PLWH screened, 848 were eligible and 623 were enrolled into the study and completed an interviewer-administered baseline assessment. This assessment included the full AUDIT and other questions regarding patterns of alcohol use [21]. Participants were randomly assigned to either the intervention condition ($n = 305$) or a treatment-as-usual comparison condition ($n = 318$). Participants assigned to the intervention condition were offered four modules of MI-PST delivered over two sessions ideally spaced a week apart. Trained counsellors provided individual counselling in a private room next to the ART clinic. Individual counselling was chosen over group counselling as participants in the formative phase of this study expressed preferences for an intervention delivered in an individual format due to concerns about confidentiality and stigma in group settings [16–17]. During the programme, the counsellor and the participant collaborated to identify and address problems within the participant's life while the counsellor taught the participant a structured approach to resolving these problems. Each session functioned iteratively to build readiness to change and problem-solving skills. All sessions included opportunities to apply newly learned skills through exercises and home-based activities. These activities were contained in a patient handbook that also summarised the content of each session. From enrolment, participants had four weeks within which to complete these sessions. Of the 305 participants assigned to the intervention, 225 (74%) completed all four modules.

To obtain participants feedback about their experiences of the intervention and their views of its usefulness for behaviour change, we conducted qualitative in-depth interviews at two time-points: on completion of the last intervention session and again at the six-month study end-point. We chose these two time-points as we thought experiences of the counselling and in particular views of the mode and style of delivery would be more salient immediately after completion of the intervention, while the six month follow-up interview would allow participants more time to apply the skills they learned, allowing for a richer description of the components of the intervention that facilitated change.

All participants were actively tracked for their intervention sessions and study appointments. Detailed contact information was collected at baseline to facilitate tracking through telephonic contact and face-to-face reminders. The six-month follow-up rate was 83% among participants assigned to the intervention arm (n = 254). At each of these time-points, 10% of the 305 participants assigned to the intervention condition at baseline were randomly selected for an interview: 36 unique participants at the post-intervention time-point and 37 unique participants at the six-month end-point. Experienced and trained female qualitative researchers used an interview guide (containing opening questions and follow-up probes) to structure these interviews which were conducted in seTswana or English, the main languages spoken in the region. Similar questions were asked at each time point. Questions explored what participants remembered from the intervention, their experiences of counselling, the extent to which they had applied the information and skills they had learned to life problems, components of the intervention that had helped facilitate change, and their recommendations for improving the content, format and delivery of the intervention. Interviews were audio-recorded and transcribed verbatim. Participants were provided with refreshments, a grocery voucher to thank them for their time, and their transport costs to the site were reimbursed at each study appointment. The interviews and all other study-related activities, occurred in private rooms within the ART clinics that operated as research sites.

Ethical considerations

Ethical approval for the study was granted by the Research Ethics Committee of the South African Medical Research Council. Permissions for the study were obtained from the hospitals, the health districts and the Gauteng Provincial Department of Health. The trial was registered with the Pan African Clinical Trials Register (PACTR201405000815100). Written informed consent was provided by individual patients prior to initial screening being conducted and again prior to being interviewed.

Analyses

The framework approach [22] was used for qualitative data analysis. Two investigators (not involved in the data collection) initially reviewed the interview transcripts, identified emerging themes, and developed a coding frame. Next, they coded the interview transcripts using NVivo version 12; any coding discrepancies were resolved through discussion. A third person was not needed to break coding ties. While analyzing the data, the researchers remained aware of their personal beliefs and assumptions about the utility of the intervention and its limitations. No new codes emerged after coding a third of the transcripts, implying thematic saturation. Inter-coder reliability was high, with a Kappa score of 93%.

Results

We interviewed 49 (67%) of the 73 participants initially selected for an interview: 24 of the 36 participants selected for a post-intervention interview and 25 of the 37 participants selected for an in-depth interview at the six-month follow-up appointment. Of the 24 selected participants that were not interviewed, 14 (58%) were lost to follow-up, 8 (33%) refused the offer of an intervention and the interview, and 2 (8%) received at least one intervention session but did not want to be interviewed. There were no baseline differences between participants who were interviewed and those who were selected, but not interviewed (see Table 1). Interviewed participants were mainly women (67%) and were 41 years of age (SD = 9.3), on average. Three quarters of the sample reported significant symptoms of depression (76%) and their average AUDIT score was 8.6 (SD = 4.6).

Three themes emerged from the interviews that reflect participants' perceptions of the acceptability and usefulness of this intervention. Similar themes emerged for participants interviewed post-intervention and at the six-month follow-up (6MFU), although participants at the 6MFU provided a richer description of the usefulness of the intervention and were able to provide concrete examples of how they had applied specific skills learned during the intervention to facilitate behaviour change. Participants at the post-intervention point would not have had an opportunity to apply skills learned during module 3 and 4 of the intervention. The first theme describes participants' perceptions of the acceptability of screening and brief alcohol-focused interventions for patients living with HIV. The second theme describes participants' views of the usefulness of the intervention for reducing alcohol use and addressing life stressors. The third theme reflects participants' views on how the intervention could be modified for greater reach and impact. These themes are described below and are illustrated with quotes.

Acceptability of brief alcohol-focused interventions

When asked for feedback about the process of being screened for hazardous alcohol use, almost all participants felt that screening helped them understand the level of risk associated with their current pattern of alcohol use. Those participants that initially expressed ambivalence towards this screening did not view their drinking as problematic:

I did not see that I had a problem with alcohol. It (the screening) was able to open my eyes to see that I have a problem. [Male PID 7, post-intervention]

I wasn't even aware that I have a drinking problem, I only became aware when I started talking about it. [Female PID 70; 6MFU]

Participants agreed that the brief intervention was largely acceptable. The opportunity to talk to a counsellor who was knowledgeable about alcohol use and provided a safe, confidential, and non-judgmental space to discuss problems and concerns was highly valued. This is reflected in the following comments:

My counsellor spoke to me in a friendly manner and listened to me when I talked. She would go extra lengths for me. I liked the way she listened to me.

[Female PID 54; 6MFU]

She is a person who can understand a situation and then at the end help come up with a solution, she is a friendly person. She doesn't judge, she listens.

[Male PID 7; post-intervention]

In several instances, participants described the intervention as an essential adjunct to the clinical care they received at the facility. Participants remarked how their HIV providers only addressed their physical and HIV disease-related concerns, with little attention to emotional and social issues that impacted on their well-being. As a result, participants tended to perceive the intervention as addressing a gap in current services:

I saw this counselling as very important because of the way they have time. Here at the clinic, they don't have that time. I am sorry to say this but here they [nurses] are only rushing so that the line can move, finish and then go home.

[Male PID 16; post-intervention]

It was helpful because we don't get much counselling and sometimes I feel that when you have a problem, you don't talk to them [nurses], you just come in, they sign your file, you take your treatment and you go home. ... so it's like I am getting treatment that side and advice about my life this side.

[Female PID 56; 6MFU]

When asked specifically, all participants said that they would recommend the intervention to other people living with HIV who use alcohol, and several suggested it would be suitable for all people living with HIV regardless of whether they use alcohol.

Usefulness of MI-PST for facilitating behaviour change

Almost all participants thought the intervention "was helpful" for facilitating behaviour change and improving their lives. When describing the usefulness of the intervention, participants commented:

Since I came here for counselling, I feel like a lot has changed, even my mind is functioning better. [Male PID 29; post-intervention]

I feel lighter because I was always feeling pain in my spirit and remember when I started coming here I was very hurt ... and as time went I got better.

[Female PID 38; 6MFU]

Participants seemed to value the psychoeducation material contained in the intervention which provided them with feedback about their personal risks for alcohol-related harms and psychoeducation about alcohol use and health. Several participants articulated that prior to receiving the intervention they were not “aware that a lot of alcohol is not advised when one is taking treatment” and that they only “started knowing it after being part of this study.” As one participant reflected:

Sometimes you do things and you are not aware that they are wrong. I realise that if I am taking ARV's I am not supposed to have problems or stresses, or drink too much alcohol. [Female PID 71; 6MFU]

For many participants, the information on standard drinks and container sizes was particularly salient and helped them quantify the amount of alcohol they were consuming. Many reported being surprised by exactly how much they were drinking:

So now when I drink alcohol, I am careful because I look at the fact that I am drinking 750 ml that means I am drinking 2.2 beers. I didn't know, I thought 750 ml equals one drink. It taught me that sometimes we drink a lot of alcohol without being aware. [Male PID 49; 6MFU]

Many participants reported using the patient handbook (which contained goal setting activities and a drinking diary) to help them keep track of the amount of alcohol they were consuming. These participants experienced the handbook as a useful platform to support self-monitoring of alcohol intake and self-evaluation of progress towards their alcohol reduction goals:

What I liked about this book is that I can use it as my diary, where I keep track of my drinking habit. I write down and calculate the percentage of alcohol whenever I have a drink and see the total. [Male PID 17; post-intervention]

The PST content of the intervention also appeared to be valued by participants who agreed that the structured problem-solving approach taught during counselling had given them new skills for resolving everyday problems. Participants reflected that the PST approach had taught them to face their problems directly without having to turn to alcohol:

I accept any problem that comes my way and I can now solve problems. I don't bottle them inside anymore, but I deal with them head on. [Female PID 54; 6MFU]

I see life with a different eye. I take things as they come and know how I should tackle them . When I come across problems I take things step by step. I no longer rush to drink when I have stress. [Female PID 49; 6MFU]

Several participants also reflected on the usefulness of the PST content that focused on strategies for accepting and managing problems that cannot be changed. This seemed particularly salient for participants who were struggling to accept their HIV diagnosis and were using alcohol to cope:

I learned to accept myself in this situation that I am in ... to accept that I will take ARVs forever. I could not accept it in the beginning, now I have accepted.

[Male PID 23; post-intervention]

All participants interviewed at the six-month timepoint reported applying these skills to make changes to their alcohol consumption. Although a few participants reported that they had stopped drinking, the majority described how they had “reduced drinking” and “now limited (their) alcohol intake” but had not stopped drinking completely. One participant spoke of how reducing his alcohol intake had improved his health and financial situation:

I have reduced my alcohol and I no longer drink a lot. I used to drink Monday to Monday, now alcohol no longer controls me. I no longer get sick easily, I am healthy, I am alright. I can do my budget and see what we are short of at home. Before I used to just drink money. I can afford a lot of things now because I no longer waste money like before. [Male PID 72; 6MFU]

Despite these perceived benefits, alcohol cessation remained an important goal for several participants, who described wanting to “totally quit” but finding it “difficult and quite challenging to stop.” For these participants, reducing their alcohol intake was an incremental step towards their goal of abstinence.

I have started to reduce. Sometimes I drink, but not too much. Eventually I want to stop drinking altogether, as times goes on. [Female PID 9; post-intervention]

You don't just easily stop drinking, you can't say you will stop tomorrow. I will try to reduce my alcohol intake. [Male PID 17; post-intervention]

At the six-month end-point, most participants provided concrete examples of how they had applied their newly acquired skills to resolve some of the problems in their lives that triggered or contributed to excessive alcohol use. Participants described using these skills to manage a range of life problems, including unemployment (with a few reporting that they had found part-time employment or started income-generation activities), relationship difficulties and interpersonal conflicts. These were salient life problems for men and women. PST skills seemed particularly helpful for aiding the regulation of negative emotions such as anger, anxiety and despair:

I was a person who had anger ... I would turn small issues into big ones and I was quick to get angry. Since I have spoken to the counsellors, they have advised me what to do. I tried to do what they said and now I can see that at least I am not too quick to get angry. [Female PID 67; 6MFU]

In counselling, they taught me how to cope with negative thoughts. I am maybe not going to allow this thought to consume my mind. I usually have stress when I am alone and I think about a lot of things. [Female PID 71; 6MFU]

Suggestions for modifications to the intervention

Participants made several suggestions for how to improve the reach and impact of the intervention. These recommendations relate primarily to the content, delivery, and dosage of the intervention. In terms of content, some participants requested more detail about how alcohol affects HIV disease progression (in addition to information on how it affects ART adherence). These participants wanted to “know exactly what alcohol does to the body”. Furthermore, the intervention focused on promoting alcohol reduction and provides little guidance on the benefits of alcohol abstinence. Several participants (who wanted to stop drinking) thought the intervention should be expanded to include more information on alcohol cessation:

They can teach you more in terms of how you can stop instead of only how you can reduce. [Male PID 70; 6MFU]

Some participants also requested additional supplementary material that addressed some of the structural drivers of alcohol use in their context such as unemployment and a lack of work and income-generation skills. These participants suggested supplementing the individual behavior change intervention to include additional components focused on developing income generation skills and work preparedness:

You should try to help find jobs for us. Help us find jobs so that the stress that we have can be reduced ... or projects so that even where are no jobs we have something to hold on to. [Female PID 4; post-intervention]

Only a few participants made recommendations for modifications to the delivery of the intervention. Hardly any participants reported barriers to attending intervention sessions at the health facility. A few did mention initial difficulties in taking time off work to attend these sessions but described how these barriers were addressed by the counsellors being able to accommodate them on weekends. Some participants mentioned that they would have preferred to have received counselling at their homes or in their communities rather than at the facilities. These were mainly men who were concerned about HIV-related stigma and did not want to be seen frequenting the health facility.

Most people have a problem of stigma, especially men we don't even come to the clinic. So stigma is the main problem for men, there are a lot of people who have it. If you did house to house, it was something else... if you did house to house you will see a lot who have secrets. [Male PID 58; 6MFU]

When asked about whether the dosage of the intervention was sufficient to meet their counselling needs, a few participations considered four sessions delivered over two days adequate to meet their counselling expectations. This was particularly the case for those who reported low risk drinking. However, participants who reported excessive alcohol use expressed interest in receiving additional sessions to support their efforts to change and to help them stop drinking completely:

I would have liked to have more sessions and then maybe I would be able to take out what is in my heart, because at least there is someone who I can talk to. I can say they have helped me because I was able to

see my problems, but for now I have not yet found a solution ... we only had two sessions, so in those two sessions I can't just make a decision. [Female PID 7; post-intervention]

Some of the participants who expressed interest in receiving additional sessions thought that these sessions could be offered as optional booster sessions that could be accessed on an as-needed basis, rather than making these additional sessions a mandatory part of the intervention package. According to these participants, this would provide them with opportunities to contact their counsellor when difficult problems arise for which they need additional support:

Sometimes I would come across problems and I wouldn't know how to solve them, so if I could be able to come here and talk to her so that she can help me.

[Female PID 61; 6MFU]

Discussion

This study provides qualitative evidence of the perceived acceptability and usefulness of a brief MI-PST intervention for facilitating changes to alcohol use among PLWH in South Africa. More specifically, findings suggest that (i) it is generally acceptable to offer PLWH an intervention to address excessive alcohol use, with no notable differences found between men and women; (ii) participants thought the MI-PST intervention helped them reduce their alcohol consumption; (iii) enhancing problem- and emotion-focused coping skills seemed to support participants' efforts to reduce their alcohol intake; and (iv) minor modifications to the dosage, content and delivery of the intervention could potentially enhance its acceptability.

Given high levels of hazardous alcohol use in their communities and some recognition of the effect that alcohol use has on health and response to HIV treatment, most participants reported that it was appropriate and acceptable to provide alcohol-focused interventions to PLWH, such as themselves. Participants described the counselling as a useful adjunct to their HIV clinical care where little attention was given to psychosocial factors that impact on physical well-being. The use of trained counsellors who were not their usual HIV care providers seemed to enhance the acceptability of screening and the brief alcohol reduction intervention. Despite alcohol-focused screening and interventions being broadly acceptable, some participants acknowledged feeling ambivalent about being screened. Stigma associated with problematic alcohol use for PLWH and limited literacy around alcohol-related issues seemed to contribute to this ambivalence. This observation is in keeping with findings from other South African studies of alcohol-related research among PLWH [15, 27]. As some participants noted that this may impact on the uptake of screening and counselling for alcohol problems, any efforts to implement screening and brief interventions for hazardous alcohol use in HIV services should consider addressing these barriers. National implementation of the recently developed health promotion tool kit, which provides psychoeducation about alcohol (and other) risks for ill-health [28], may assist in raising public alcohol-related health literacy.

In addition, findings suggest that the intervention assisted participants in reducing their alcohol intake, with almost all participants describing how they had limited their alcohol use since receiving the intervention. Their descriptions of the intervention's benefits are supported by findings that these participants significantly reduced the average number of alcoholic drinks consumed per month from 28 at baseline to 9 at the study's six-month endpoint ($p = 0.002$). Many of the participants reported being unaware that they were drinking at potentially hazardous levels. They described how the personalised feedback they received about their risks associated with their level of alcohol use surprised and motivated them to reduce their drinking. Aspects of the intervention that provided psychoeducation about standard drinks and container sizes and tools to help them track the volume of alcohol consumed seemed particularly helpful for supporting participants' efforts to change. In addition, participants seemed to value the new problem-solving skills that they had gained through the intervention. They felt the intervention provided them with practical tools for managing life stressors, regulating negative emotions, and accepting and managing their HIV diagnosis. These were salient issues for men and women in this study. Many participants provided concrete examples of how they had applied these skills to cope with problems where previously they used alcohol as a form of avoidant coping.

Despite the perceived benefits of the intervention, almost all participants thought that the usefulness of the intervention could have been enhanced through providing opportunities for additional counselling sessions. Participants who reported alcohol cessation as their behaviour change goal reflected that the intervention was helpful for alcohol reduction efforts but not sufficient for cessation goals. In previous studies using MI-PST, the counselling sessions were delivered over a four to six-week period and comprised four separate counselling occasions, each spaced at least a week apart (see [20–21]). This gave participants multiple opportunities to put their problem-solving skills into practice and to review these efforts with their counsellor at their next session. In the current study, the intervention content was delivered over two occasions, primarily due to initial concerns about the feasibility of retaining participants in an intervention spread over four weeks. While PLWH in South Africa have reported structural barriers to retention in alcohol counselling [16, 29] and providing fewer but more intensive sessions is one way of addressing these barriers, structuring the intervention in this way arguably provided participants with fewer opportunities to test their problem-solving skills and review these with their counsellor. Given that several participants seemed to want additional contact points with their counsellor, future applications of this intervention should consider reverting to delivering the intervention modules over more than two contact sessions.

To address concerns about the addition of counselling sessions and risk of attrition among individuals who experience barriers in attending facility-based services, future applications of MI-PST could consider altering the mode of delivery to combine face-to-face counselling with telephone-based counselling. As some participants (mainly men) raised concerns about receiving behavioural intervention at health facilities due to difficulties in taking time off work and concerns about stigma, this could be addressed through the option of telephone counselling. Although not widely used in low-and-middle-income countries, there is evidence from high-income countries of the effectiveness of telephone-based MI [30] and PST [31, 32].

Like other studies of psychosocial interventions in this setting [26, 33–35], several participants also expressed the need for ongoing support for change either through community-based services (including home visits) or continued access to a facility-based psychosocial counsellor. To address this unmet need, future studies should consider expanding the intervention to include extended support for change. Given that hazardous drinking is normative among those who drink in many parts of South Africa, including Tshwane [7], this modification may be necessary to help participants sustain initial reductions to their alcohol use.

In addition to modifying the format and mode of delivery, several participants suggested supplementing the intervention with additional services to help address some of the contextual factors that contribute to heavy drinking, such as lack of employment and income generation opportunities which was a major source of stress. Furthermore, as many of the problems that participants reported seemed to stem from conflict in relationships and emotional regulation difficulties, additional content that focuses specifically on emotional regulation and conflict resolution skills may increase the impact of this intervention.

There are some study limitations that should be considered when interpreting these findings. First, an inherent limitation of qualitative studies is their lack of generalizability. Although this sample is largely representative of the participants who participated in the trial, the extent to which it is representative of the total population of patients receiving ART for HIV in Tshwane, or elsewhere in South Africa, is not known. Second, while we took precautions to limit social desirability bias, participants may not have felt comfortable criticising the intervention. Third, as a substantial number of participants selected for an in-depth interview were not contactable, our sample may have been skewed towards participants who felt the intervention was acceptable and beneficial- participants who declined the offer of an interview or who had withdrawn from the study may have been more critical than those whom we interviewed. Fourth, as the intervention was delivered by research staff, counselling could be offered outside of the usual operating hours of health facilities (including over weekends) and barriers to access minimized. This may not have been possible if the intervention had been delivered by usual care providers. A pragmatic evaluation of the intervention is still needed to determine whether patient time, transport and cost barriers impact on the feasibility of delivering the intervention and patient's views of the acceptability of the intervention.

Conclusion

Despite these limitations, this study confirms and extends what is already known about the acceptability of brief MI-PST interventions for South African populations [20-22, 24]. It is the first study to provide feedback on how participants practically applied the problem-solving skills taught in the intervention to resolve life problems and demonstrates that, despite the brevity of the intervention, there was some maintenance of these skills over time. Although findings suggest that the intervention was acceptable and useful for facilitating reductions in alcohol consumption among PLWH, it is unclear whether it is feasible or acceptable to implement this intervention within the constraints of usual HIV care settings once research supports (such as participant transport and incentives) are removed. Future studies

examining potential barriers to implementation are needed before recommendations regarding the implementation of the intervention can be made.

Declarations

Ethics approval and consent to participate

Ethical approval for the study was granted by the Research Ethics Committee of the South African Medical Research Council. Permissions for the study were obtained from the hospitals, the health districts and the Gauteng Provincial Department of Health. The trial was registered with the Pan African Clinical Trials Register (PACTR201405000815100). Written informed consent was provided by individual patients prior to initial screening being conducted and again prior to being interviewed.

Consent for publication

Not applicable.

Availability of data and materials

Data are available from the corresponding author on reasonable request.

Competing interests

The authors declare they have no competing interests.

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BM and KRS developed and refined the intervention. CDH and NKS conceived the overall trial. CTK oversaw the implementation of the process evaluation. BM and KRS developed the interview guideline with inputs from all other authors, they led the analyses and wrote the first draft of the manuscript. CDH, NKM, SN, PAS, CTK revised the draft versions of the manuscript. All authors read and approved the final manuscript.

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Tables

Table I: Demographic and clinical characteristics of participants selected for an in-depth interview (n= 73)

| Characteristics | Selected, not interviewed (n= 24) | Selected, and interviewed (n= 49) | p value |
|------------------------------------------------|-----------------------------------|--------------------------------------|---------|
| Male (% , n) | 33.3% (8) | 32.7% (16) | 0.95 |
| Age (M, SD) | 38.3 (7.5) | 41.1 (9.3) | 0.21 |
| AUDIT score: M (SD) | 9.1 (5.2) | 8.6 (4.6) | 0.66 |
| Above cut-off for probable depression* (% , n) | 70.8% (17) | 75.5% (37) | 0.67 |

*The Center for Epidemiology Scale on Depression was used to screen for depression