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A qualitative exploration of mechanisms of intimate partner violence reduction for Zambian couples receiving the Common Elements Treatment Approach (CETA) intervention

Sarah M. Murray [a,*], Stephanie Skavenski Van Wyk [a], Kristina Metz [a], Saphira Munthali Mulemba [b], Mwamba M. Mwenge [b], Jeremy C. Kane [a], Michelle Alto [c], Katherine E. Venturo-Conerly [d], Akash R. Wasil [d], Shoshanna L. Fine [a], Laura K. Murray [a]

[a] Department of Mental Health, Johns Hopkins Bloomberg School of Public Health, USA
[b] Serenity Harm Reduction Programme Zambia (SHARPZ), USA
[c] University of Rochester, USA
[d] Department of Psychology, Harvard University, USA

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Abstract

Rationale: Despite well-established associations between alcohol use, poor mental health, and intimate partner violence (IPV), limited attention has been given to how psychological and behavioral interventions might prevent or treat IPV in low- and middle-income countries.

Objective: In a recent randomized controlled trial in Lusaka, Zambia, transdiagnostic cognitive-behavioral psychotherapy (the Common Elements Treatment Approach; CETA) demonstrated significant treatment effects on men's alcohol use and women's IPV victimization in couples in which hazardous alcohol use by the male and intimate partner violence against the female was reported. In this study, we sought to gain a more in-depth understanding of mechanisms of behavior change among CETA participants.

Methods: We conducted 50 semi-structured in-depth interviews and 4 focus groups with a purposeful sample of adult men and women who received CETA between April and October 2018. Transcripts were analyzed using an inductive constant comparison approach by a team of US- and Zambia-based coders.

Results: Participants described interrelated mechanisms of change, including the use of safety strategies to not only avoid or prevent conflict but also to control anger; reductions in alcohol use that directly and indirectly reduced conflict; and, positive changes in trust and understanding of one's self and their partner. Several overarching themes also emerged from the data: how gender norms shaped participants' understanding of violence reduction strategies; the role of household economics in cycles of alcohol and violence; and, deleterious and virtuous intercouple dynamics that could perpetuate or diminish violence.

Conclusions: Results suggest important avenues for future research including the potential for combining CETA with poverty reduction or gender norms focused interventions and for incorporating cognitivebehavioral skills into community level interventions.

Author contribution

Sarah Murray: Conceptualization, Methodology, Formal analysis, Writing - original draft, Supervision, Stephanie Skavenski van Wyk: Formal analysis, Writing - review & editing, Supervision, Kristina Metz: Formal analysis, Writing - review & editing, Supervision, Saphira Munthali Mulemba: Formal analysis, Writing - review & editing, Investigation, Project administration, Mwamba M. Mwenge: Formal analysis, Writing - review & editing, Investigation, Jeremy C. Kane: Conceptualization, Formal analysis, Writing- Review & Editing, Michelle Alto: Formal analysis, Writing- Original Draft, Katherine Venturo-Conerly: Formal analysis, Writing- Original Draft, Akash R. Wasil: Formal analysis, Writing- Original Draft, Shoshanna L. Fine: Formal analysis, Writing- Review & Editing, Laura K. Murray: Conceptualization, Writing- Review & Editing, Supervision, Funding acquisition.

* Corresponding author. 624 N Broadway, Hampton House Room 863, Baltimore, MD, 21214, USA.
E-mail address: Sarah.murray@jhu.edu (S.M. Murray).

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1. Introduction

Across countries in sub-Saharan Africa, between 5 and 37% of women report experiencing physical or sexual intimate partner violence (IPV) in the past year (Coll et al., 2020). In addition to violating women's fundamental rights, IPV has manifold negative health consequences, including unwanted preganancy, gynceological problems, poor self-rated health, and pain (Ellsberg et al., 2008; Grose et al., 2020). Notably, mental and behavioral health exhibit a complex relationship with IPV. Among women, associations of IPV victimization with alcohol misuse; suicidality; and, symptoms of depression, anxiety, and post-traumatic stress disorder (PTSD) are well documented (Ellsberg et al., 2008; Gross et al., 2019 Halim et al., 2018; Lagdon et al., 2014). Longitudinal studies have demonstrated that IPV not only predicts poor mental health in women (Chandan et al., 2019; Devries et al., 2013), but depression may place women at greater risk of experiencing IPV (Bacchus et al., 2018; Devries et al., 2013). For example, in a study from South Africa, probable depression among women at baseline was associated with 1.7 times the adjusted odds of physical and/or sexual IPV occurring during a subsequent 12 month follow-up period (Nduna et al., 2010). Men's alcohol use, PTSD, and depression are also associated with IPV perpetration (Cafferky et al., 2018; Machisa and Shamu, 2018; Stith et al., 2004).

In high-income countries, two predominant strategies have been used to address male IPV perpetration: the feminist-informed Duluth model and cognitive behavioral therapy (CBT) (Babcock et al., 2004). The Duluth model highlights men's use of violence against women as a means of achieving power and control and seeks to shift feelings of responsibility for violence to the male perpetrator (Pence & Paymar, 1993). CBT-based approaches emphasize skill-building and examination of cognitions to help perpetrators regulate their thoughts and behaviors (Tolman and Edelson, 1995). A meta-analysis showed Duluth and CBT-based interventions to both have small effects on IPV perpetration, but heterogeneity in study design and programs that combine multiple approaches have made it difficult to draw conclusions about effectiveness (Babcock et al., 2004).

In low and middle-income countries (LMICs), community-level social (e.g., participatory learning on gender inequity) and economic (e.g., microfinance for women) interventions, many of which focus on changing gender norms and acceptability of violence in line with the Duluth approach, have been more commonly evaluated as IPV prevention strategies than CBT-based prevention or treatment approaches (Bourey et al., 2015; Tol et al., 2019). A recent systematic review identified only seven trials of any mental health or substance use treatment in LMICs that assessed effects on IPV (Tol et al., 2019). Community-level economic and social interventions have demonstrated limited effect on physical and sexual IPV in LMICs, but have shown some, albeit mixed, evidence of effectiveness for impacting several potential mechanisms of IPV reduction: improved economic wellbeing, more equitable gender norms, and attitudes less accepting of violence (Bourey et al., 2015). In South Africa, qualitiative research with participants in a microfinance and women's empowerment program designed to prevent and reduce IPV found that women changed their attitudes towards violence, increased their confidence to end relationships in which IPV was occurring, improved their communication and conflict management skills within their relationships, and were more able to earn money (Kim et al., 2007). Trials in LMICs of interventions that included at least some substance use or psychotherapeutic elements show some limited evidence that depression treatment might reduce IPV (Tol et al., 2019).

Few studies of programs delivered to perpetrators in any setting to reduce IPV have elucidated mechanisms of change (Velonis et al., 2018). In LMICs, a trial from Uganda identified changes in social norms at the community level, and improvements in communication about sex and decreases in suspicion of adultery at the couple level, as mediators of the effect of a community mobilization intervention focused on social norm change on IPV (Abramsky et al., 2016). The importance of communication and trust within couples in creating changes in IPV was also highlighted in qualitative findings from participants in the same intervention (Starmann et al., 2017). No trials of the impact of mental health interventions on IPV in LMICs have examined mechanisms of change (Tol et al., 2019).

Given the complex relationship that exists between mental health and IPV and gaps in knowledge on the potential for CBT or other mental health or substance use interventions to reduce the occurrence of IPV in LMICs, the impact of a CBT-based transdiagnostic psychotherapy (Common Elements Treatment Approach; CETA) on couples in which a woman was experiencing IPV and a man was misusing alcohol was evaluated in a randomized controlled trial (RCT) in Zambia (Murray et al., 2020). CETA was designed to be used across the lifespan (ages 7+) to address multiple problems: trauma, depression, anxiety, substance use, violence and other common difficulties (e.g., inter-relational problems) (Murray et al., 2014). CETA was previously shown to have large effects on trauma, anxiety, depression, and functional impairment with conflict- or torture-affected adults in Iraq and Thailand (Bolton et al., 2014; Weiss et al., 2015). In the Zambian RCT, CETA was found to have statistically significant effects on physical and sexual violence, threatened violence, and male alcohol use that were sustained at one year ((((Murray et al., 2020). To then gain greater understanding of how CETA impacted IPV in Zambia and address gaps in knowledge on the mechanisms by which different intervention strategies may work to reduce violence, we collected qualitative data from male and female RCT participants. Specifically, we aimed to explore mechanisms of behavior change related to male IPV perpetration and women's ability to negotiate safety and avoid potential violence.

2. Method

2.1. Participants

We purposefully sampled adult men and women from the 123 male-female couples randomized to CETA in the RCT assessing the program's effectiveness for reducing IPV and alcohol use in Lusaka, Zambia.(protocol available: Kane et al., 2017). For a couple to be eligible for the RCT, the woman had to report past year physical or sexual IPV victimization of at least moderate severity on the Severity of Violence Against Women scale (SVAWS) (Marshall, 1992). Additionally, the man had to exhibit hazardous alcohol use via self-report or his female partner's report on the Alcohol Use Disorders Identification Test (AUDIT) (Saunders et al., 1993). Qualitative sampling aimed to achieve variation on participant sex and level of engagement in CETA. Level of engagement was determined by the counselor and used as a proxy for change in alcohol use and IPV, which were unknown at the time of sampling due to blinding.

Participants in the trial received 6–12, 60-min individual CETA sessions delivered by trained lay providers. CETA is an elements-based intervention where element choice and dose are based on client symptom presentation (Murray et al., 2014). Thus, CETA is modular, flexible, and individualized, allowing it to address specific contributors to IPV (e.g., substance misuse, communication problems, underlying core beliefs, trauma symptoms) for each client. CETA was delivered separately to men and women. All participants (both male and female) received the following elements: Psychoeducation, focused on normalizing problems and providing information about CETA; Safety, which included an assessment of homicide and suicide risk and associated safety planning; and, Cognitive Coping and Restructuring, to learn to connect thoughts, feelings, and behaviors and to change or restructure thoughts to be more helpful or accurate (see Kane et al., 2017; Murray et al., 2020; or, https://www.cetaglobal.org for more detail). In this trial, CETA also included a focus on violence prevention; specifically, safety planning and thought or behavior modifications to prevent or minimize IPV incidents. All female participants therefore also received a Safety for Violence element, which involved the creation of an individualized

safety plan with behavior and situational modifications to prevent or de-escalate IPV, and Substance Use Reduction Support elements. All male participants received the Substance Use Reduction element, based in CBT and motivational interviewing. Additional elements to address depression, anxiety, trauma, and female substance misuse were delivered as needed.

2.2. Data collection procedures

Zambian staff contacted men and women via phone and presented the opportunity to participate in additional interviews aimed at understanding their experiences in CETA. Interested participants were invited to a local community center or the implementing partner's (Serenity Harm Reduction Programme Zambia; SHARPZ)) office for more information; all accepted and provided oral consent before commencement of data collection. The Johns Hopkins Bloomberg School of Public Health Institutional Review Board and the University of Zambia Biomedical Research Ethics Committee approved this study.

We trained six Lusaka-based research assistants to conduct in-depth interviews in Bemba or Nyanja using a semi-structured guide that covered five topics: common relationship problems, men and women's roles in intimate relationships, alcohol use, strategies for managing disagreement within couples, and experiences with CETA. In April and May 2018, we conducted 30 first-round interviews (16 women; 14 men). Approximate time from CETA completion to first interview was 7–15 months. After reviewing these transcripts, 20 participants (13 women; 7 men) were asked to complete a second interview in August 2018 if they had provided particularly rich information on key emergent themes or if we felt they could share additional relevant information. To promote credibility by member checking findings and triangulating data collection, we conducted 4 focus groups (2 with women and 2 with men) with 3–4 participants per group (total $n = 14$) in October 2018. All data collection occurred at churches in participants' communities or at SHARPZ in private spaces. Interviews were conducted by a single individual and focus groups by a facilitator assisted by 1–2 notetakers. Interviews and focus groups ranged in length from approximately 40-105 min.

2.3. Analysis

All interviews and focus groups were recorded, transcribed verbatim, and translated into English. Debriefing meetings occurred after each interview during the first round of data collection to discuss and resolve challenges. First-round transcripts were also reviewed by author S. Murray or S. Skavenski Van Wyk for feedback on probing and interviewing techniques. Weekly group and individual meetings were led by S. Mulemba S as needed to review the feedback, identify emergent topics of importance, and iteratively guide areas of focus in subsequent interviews. Initial analysis included inductive coding by US- and Zambia-based team members in Excel on excerpts from all first interview transcripts identified as relevant to the five topical areas of the guide. Preliminary findings guided areas of focus in follow-up interviews. Specifically, emergent codes were grouped and categorized to create a codebook that was then used to code all transcripts in Dedoose (*Dedoose Version 7.0.23*, 2016). Collaboration across individuals with clinical and research roles in both countries was designed to provide multiple perspectives and enhance reflexivity.

In Dedoose, each transcript was assigned descriptors after completion of initial coding: engagement in CETA, change in violence, and change in man's self-reported alcohol use, or if not available, his female partner's report. Changes in outcomes compared baseline to 12-month follow-up scores; when unavailable ($n = 3$ women, $n = 1$ man), immediate post-treatment scores were used. Matrices were generated to look at code co-occurrence and codes by alcohol and violence descriptors, separately for men and women who were high or low engagers. Coded excerpts were examined using constant comparison within and across codes to develop themes related to changes in alcohol, changes in fighting and violence, and their overlap. Memoing was used to enhance dependability and develop themes within and across individuals and couples that belonged to the following categories when the data became available: (1) at least moderate reduction in violence and men's alcohol use; (2) at least moderate reduction in violence but small/no reduction in men's alcohol use; (3) small/no reduction in violence and at least moderate reduction in men's alcohol use; (4) small/no reduction in violence and men's alcohol use. Focus group transcripts were reviewed for confirming or disconfirming evidence on key themes. Illustrative quotes were selected based on depth of description and representativeness. All names used with quotations are pseudonyms (indicated by italics). Quotes are from individual interviews unless otherwise indicated. Participants' percentage change in SVAWS and AUDIT scores are provided for context, with a negative number indicating reduction in severity of physical/sexual violence or alcohol use.

3. Results

We interviewed or completed focus groups with 44 CETA participants ($n = 23$ women; $n = 21$ men). While 65% of female participants were under age 35, only 33% of men were. Just over half (52%) of men had completed at least primary school compared to 29% of women. While most participants were married (men = 95%; women = 91%), only 14% of men and 35% of women reported that the intimate partner they enrolled in the study with was their spouse. A third (33%) of men and 52% of women were unemployed and looking for work.

Several interrelated mechanisms of IPV change emerged from the accounts of CETA participants. Descriptions of these mechanisms did not substantially or meaningfully vary between individuals who reported large versus small reductions in violence or men's alcohol use. Women described CETA as directly impacting their experience of violence by learning safety strategies that could be used to de-escalate conflict and avoid IPV. Men and women also both discussed how reductions in alcohol use helped resolve sources of conflict and improve their ability to keep arguments from occurring. Lastly, men and women explained how they observed positive changes associated with CETA in their trust of one another and understanding of their own and partner's thoughts and behaviors. We detail these mechanisms in the following and highlight three overarching themes: how changes were implemented and understood in ways that reflect gender norms; the importance of household economics in the interrelationship between alcohol use and violence; and, deleterious and virtuous intercouple dynamics related to violence.

3.1. Mechanism 1: use of safety strategies

In CETA, all women worked with a counselor to create personalized safety plans by identifying specific triggers and/or antecedents to violence and developing strategies for increasing safety during the identified situations. The plans developed were diverse, individualized to each client's situation, and refined as needed throughout treatment. In interviews, women described using two predominant techniques to increase their safety when faced with psychological violence and/or the threat of physical violence, particularly when their partner had been drinking. These strategies, "staying quiet" and "walking away" were often used iteratively. One woman described how "staying quiet" works by saying, "He does not continue talking because he will notice he is talking to himself, 'cause there is no one to answer him back" (*Hope*, SVAWS: 20%, her partner's AUDIT: +33%). Men also used "staying quiet" to avoid or reduce conflict, further improving women's safety. One man, *Kennedy*, described the effect of "staying quiet" as giving "time to the other person to evaluate what is going on, and they might just end up finding out that they are the ones who were wrong" (SVAWS: 74%, his AUDIT: 93%). This quote highlights how the "staying quiet" strategy allowed men and women to disengage from conflict, providing time to

use other CETA skills. Specifically, multiple individuals expressed learning in CETA how their thoughts, feelings and behaviors were connected, and relatedly, how to think different thoughts that promoted more adaptive feelings and behaviors. Thus, "staying quiet" was described not only as a safety strategy- but when used in combination with this CETA skill-it was also a means of controlling anger and other emotions to interrupt intercouple dynamics that heightened conflict. *Grace* summarized the positive intercouple dynamic this strategy produced: "by keeping quiet, then I have controlled his temper too" (SVAWS: 69%, her partner's AUDIT: 57%).

Women often described first trying "staying quiet" to avoid violence. As this would not always work, especially if a man was drinking, women would sometimes choose to "walk away" to keep safe:

> Before you leave it's good to be quiet until you see if there is need to leave, but in my case when I stay quiet, he says that 'why are you not answering me back but you want me to be talking to myself so that I look foolish' (*Hope*, SVAWS: 20%, her partner's AUDIT: +33%).

Hope went on to explain that "Leaving can be used on those arguments that can bring fighting, and being quiet can be used on those simple disagreements." Most commonly women described "walking away" as going to a friend's or neighbor's house. Similar to "staying quiet," participants discussed "walking away" as a strategy for staying safe, but also for controlling one's reactions:

> When I walk away, he remains alone and he won't keep talking. And I know by the time I come back home his temper won't be the same, he must have cooled down. And I find that helpful because that prevents us from fighting … I feel he can't start talking again because he will notice that by me leaving the house for some time, meaning I don't want to fight or answer him or cause bad things to happen, he will realize that I was ignoring his bad words (*Daisy*, SVAWS: 23, her partner's AUDIT: 8).

Women said by returning when their husbands were asleep, both parties' anger would often largely resolve by morning when the problem could be more calmly and rationally discussed. Thus, like "staying quiet," "walking away" would create the space for reflection, the use of other CETA tools, and for a more productive and safe future discussion. Men also said they learned to leave the house to control their anger, further enhancing women's safety indirectly. Like "staying quiet," "walking away" was not seen as universally effective for preventing violence. Multiple participants mentioned that "walking away" would not always result in de-escalation (e.g., a man chased a woman to continue a verbal or physical assault; a partner was still drunk and angry upon return home). In summary, these strategies when used by men and women, worked for many, but not all, and not in all situations.

Participants also described the "staying quiet" and "walking away" strategies and their impact on controlling anger as increasing "respectful" behavior. When asked how CETA helped her, one woman replied:

> (it) helped me to reduce on beer and have respect for my husband … there were times I would answer rudely to my husband even in the presence of his friend or child, that's being disrespectful and I don't do that anymore … because in the past I would just say whatever that comes to mind without realizing that it's my husband I am talking to, and a man whom am supposed to respect as the head of the house and father to the children (*Musonda*, SVAWS: 48%, her partner's AUDIT: 100%).

The importance that participants placed on being "humble" and how humbleness fostered respect was echoed in men's focus groups. While several men and women emphasized that respect should be mutual within a couple, how they discussed respect and the use of these strategies reflected gendered power dynamics and cultural values. Specifically, women answering back or speaking "rudely" was at times given as a justification for husbands beating their wives, and some women viewed these strategies as a way of ensuring a man received respect that was owed regardless of his behavior:

> He (husband) is the head of the house and I need to respect him when he is talking. I just stay quiet no matter how upsetting it is that he is saying (*Sylvia*, SVAWS: 33%, her partner's AUDIT: 14%).

Further, though men and women both described using these strategies to control anger, one man did feel that walking away, while effective, was problematic because it could shift power in the relationship:

> When you get used of walking away from home, it means you will give power to your wife to start thinking like you fear her too much … You will find that she will even be doing it deliberately just to find a way to make you upset so that you can walk away (*Chilufya*, SWAVS: 18%, his AUDIT: 100%).

3.2. Mechanism 2: reduction in alcohol use

Participants widely recognized discord and violence in the home as one of the many effects of alcohol use and explained that CETA helped them to recognize this connection. Directly, alcohol was said to "bring confusion" and cause "careless" speech or verbal abuse.

> It's beer that brings fighting, so when one stops drinking beer they will no longer fight. What would cause them to fight in their normal state? How can I start looking for faults in my partner if am not drunk? So on that, us we don't even fight because we all don't drink, completely (*Grace*, SVAWS: 69%, her partner's AUDIT: 57%).

As a focus group participant explained, intercouple dynamics could lead to both partners drinking, making conflict more severe:

> I also used to fight with my wife. She hardly used to sleep at home because I would chase her almost all the time when I was drunk. My wife never used to take alcohol but because of the frustrations of having to deal with me, she eventually also started drinking alcohol. When she also begun to drink, things became worse between us. The arguments were more intense (*John,* SVAWS: 60%, his AUDIT: 100%).

At times, men and women also described the female partner becoming physically violent.

Indirectly, alcohol use was said to contribute to violence by creating or exacerbating sources of conflict. For example, a few men noted that adultery, a key source of marital conflict, occurred more often when drunk. Some also explained that alcohol made accusations of adultery more likely, either because of drinking-related behaviors that would be observed (e.g., staying out late) or changes in mood or inhibitions. Most commonly, men and women discussed alcohol use affecting one's ability to meet their expected roles in the family and how failure to meet these roles was a major source of conflict.

> There are times he comes, and he knows very well that there has been no food at home, but when he comes, he starts asking for food. Then when I answer him that there is no food in this house, he then starts to shout that you have eaten all the food with your children so that I starve, and yet he left no money or food before leaving for the bar to go drink (*Hope*, SVAWS: 20%, her partner's AUDIT: +33%).

Men's roles were typically described as providing money for school fees and food, and women's as cooking, washing, and caring for the home. Inability to perform these duties was attributed to either impairment caused by drinking or misuse of money or time on alcohol. Misuse of money by women was linked to violence via punishment:

> I saw that there was no benefit in taking alcohol, I never had time to look after my household, I wouldn't cook, sweep or wash (*laughing*). Sometimes my husband would be the one to cook because by this

time I would be drunk already. So those are some of the reasons my husband used to beat me (*Evelyn*, SVAWS: 65%, her partner's AUDIT: 50%).

Misuse of money by men was also linked to possible violence for women when they would confront men, at times with anger or "disrespectfully," about not providing. As an example, *Marvin*, whose wife did not want to have sex when "hungry," explained:

… because you want it (sex), you will end up forcing her to have it. But in the process of having, maybe she says something that hurts you, and because of anger you end up fighting … These things are for example when she tells you 'you don't even work or bring money for food here. You are just drinking beer out there and when you come home you even claim for sex, who does that?' She will say a lot of things which will make me upset to the extent of us to start even fighting (SVAWS: 20%, his AUDIT: +33%).

Fortunately, many CETA participants described experiencing changes in alcohol consumption, including some who did not report large reductions in alcohol use on the 12-month follow-up survey. Though some participants described completely abstaining from alcohol, individuals more commonly discussed reductions in use. As *Elizabeth* explained, "If in a day, you used to take about four bottles, you will start to reduce and take maybe even one bottle. Eventually, you will forget about it (SVAWS: 74%, her AUDIT: 100%; her partner's AUDIT: 93%). These gradual changes were usually made either by reducing the number of days one drank or the amount consumed in a drinking episode. As a focus group participant, *Daniel,* explained, "It's like a vehicle that is moving at high speed. You cannot stop it suddenly, it may overturn" (SVAWS: 43%, his AUDIT: 17%). Men and women helped make these reductions in part by limiting when they would drink, for example, only on special occasions or on non-workdays.

Participants also described concrete skills that they learned in CETA to reduce alcohol use. *Gift* noted that tracking how much he was drinking in CETA motivated his reduction:

In these lessons, they would ask us, 'In a day, how much alcohol do you take?' You see? 'In a week, how much do you take?' So, in counting, I realized that it is actually a lot because I never used to count. Asking myself to say, 'How much have I taken in a week?' I would just drink without taking note of how much I am taking. So, it opened up my mind to see that if I took as much alcohol as I did, then I took a lot of alcohol. So, I should reduce (SVAWS: 69%, his AUDIT: 57%).

A more commonly mentioned reduction strategy was avoiding places where people drink and giving excuses to avoid friends who drink. Staying busy was another frequently discussed strategy; participants found many activities to do in lieu of drinking such as attending church, reading, watching football, or cleaning. Commonly, participants took on entrepreneurial activities like selling goods at the market to stay busy.

Those days before CETA when I wake up, what used to be in my mind was drinking alcohol only. But this time after CETA, what I think is making plans to do something that will make me make money, like for example looking for 'piece works' … Sometimes when I don't have something to do at home, I just decide to start watering flowers and cut them properly just to keep myself busy not to go and drink alcohol. This has made me change and realize to say if I started these things a long time, I would have great things in my life (*Richard*, SVAWS: 39%, his AUDIT: 50%).

Just as alcohol misuse was directly and indirectly linked to violence, participants' narratives highlighted direct and indirect effects of alcohol use reductions on conflict and violence. Men and women both talked about reductions in "noise" within the household. A few men directly linked alcohol use reduction with less anger and less "react(ing) quickly." As *Daniel* explained in a focus group:

When you are very drunk, you find yourself making a big deal out of every small issue. You find that small things become big issues, for example, you come from drinking and you find your friend (spouse) is not at home, if you are very drunk you tend to magnify such a scenario until you fight and take each other to the police. So on that one we reduced, or let me just say that we stopped because we don't get physical anymore (SVAWS: 43%, his AUDIT: 17%).

Participants noted many other benefits to reducing alcohol use including improved health, meeting one's proscribed role, and better use of money. According to one man who also received treatment for withdrawal,

Before I started this, I was kind of feeble. All I could think of was drink, drink, drink all the time and I would wake up maybe very weak. I would fail to go for work. But this time, from the time I was introduced to this [CETA] I think my life has changed. I was introduced. I was taken for medication there. I took the whole course. My health has improved this time. I am able to walk. I am able to go for work. Do whatever other activities which I could not do by then … Then I prioritize certain important issues than I used to do before … I will think of my family first. Put my family first. Say, 'How do we survive? What is lacking at home? How do we find this and this?' (*Brian*, SVAWS: 40%, his AUDIT: 92%).

Table 1 presents quotes that highlight additional economic benefits of alcohol reduction, including engagement in new money-making activities, improved functioning at work, and better use of money. Improvements in finances and budgeting translated into household needs, for example, school fees and home improvements/repairs, being met. Given participants' descriptions of money misuse and failure to meet roles as a source of conflict, it follows that the economic benefits of CETA may have indirectly helped to reduce violence. Recognition of economic benefits was noted as a driver of continued behavior change-i.e., seeing positive impacts of reductions motivated participants to continue to drink less.

3.3. Mechanism 3. improvements in trust and understanding

As alcohol use reduced, participants described an "atmosphere of peace developing" and improved relationship quality. Two specific positive relationship changes described as occurring due to CETA included improved trust and greater understanding of one's own thoughts and behaviors, as well as their partner's. Both of these changes led to better communication and more positive intercouple dynamics that fostered continued reductions in violence.

Alcohol use fostered mistrust in couples, even in situations when participants claimed not to be spending money on alcohol:

Sometimes your wife can ask you for money for relish (meat or vegetables) then you don't have, for her that's the beginning of the argument so if you are not patient enough, you find yourself getting physical with her, you can even beat her. It is found that things are tough, but for her it's like you are doing it deliberately. For her it is like you are hiding the money or using it to drink beer (*Charles*, SVAWS: 22%, his AUDIT: 69%).

Charles' partner described the level of distrust in the family as getting to a point where there was no cooperation around money before CETA.

We would stay without talking to each other. Each one would cook for themselves. If one was to find relish, they would not share with the other. The way we used to live was really bad. Each one had their own bag of mealie meal since he has his short-term jobs and I have

Table 1
Benefits described by participants as associated with reducing alcohol use.

Benefit	Description by participants
Improved functioning at work	This time I am working very well compared to the way I used to work those days … my workmates, they're even appreciating me to the way I am working now, because those days I never used to work well because of the intake of alcohol … even my boss is very happy with my performance. He was even telling to say it's because you have grown- that's the reason why you have reduced the intake of alcohol. (*Gift,* SVAWS: 69%, his AUDIT: 57%)
Stopped misusing money	Before I joined the program, I used to misuse things, but now I am responsible with the way I use things and I have reduced on beer drinking. I was careless with my money. I had even reached an extent where I would use money meant for relish (meat and vegetable) to drink beer, but when I joined the program, I developed some discipline. (*Charles*, SVAWS: 22%, his AUDIT: 69%)
Greater or new engagement in money making activities	Well, I have seen the changes in myself. Previously when I have free time, I would go and drink but these days I use my free time to do other jobs and now I have seen that I am able to buy a pocket of cement and sand so that I can make blocks. This has made me see change in that I just don't play around the compound … sometimes when my lawn mower used to work, I would go around offering mowing services that would help me raise a few funds to buy my children books and carter for other needs. (*Richard*, SVAWS: 39%, his AUDIT: 50%).
Providing for family	CETA, the way it was with me, someone introduced it to me and I got interested in it and my husband also gained interest in it and we started following up on the lessons. And each time we left the parish after our lessons, we would sit home and review on the things we learnt. It used to help us so much, and that what made my husband and I change in the way we were staying or living … Whenever my husband got paid long ago, he would leave us with nothing. But after the CETA program, there has been a great change. He now buys food, pays children's school fees, and he also stopped the bad beer drinking habits. The children are happy and free. I am also happy about what or how we are staying now- we now have enough food to eat. (*Marvis*, SVAWS: 3%; her partner's AUDIT +175%)
Able to perform household duties	I have reduced on beer and also fighting when drunk … okay what I can say is that for example a friend comes to ask you join them for a beer, then you go and come back home late and yet left home without cooking or doing any house chores … but now I drink with conscious … what I mean is I now drink but I don't take long coming back home. Yes, I rush back home to cook, wash and my husband can't even notice at times that am drunk or I have drunk beer … he might know that I have drunk beer, but he would think am still in my right senses. (*Musonda*, SVAWS: 48%, her partner's AUDIT: 100%, her AUDIT: 100%).

my job as a maid. So, one could not tamper with the other's bag of mealie meal (*Lucy*, SVAWS: 22%, her partner's AUDIT: 69%).

However, in addition to stopping misusing money, CETA participants described no longer hiding their money from each other and beginning to discuss finances, share money, and budget for their household together.

> Previously when he gets paid he would go to drink alcohol without showing me the salary, but this time when he gets paid the first thing he does is to show me the salary and make a budget for what we are going to buy (*Gladys*, SVAWS: 46%, her partner's AUDIT: 100%).

This sharing of money in *Richard's* case even enabled his partner to start her own business after CETA: a stand at the market. This trust also extended to other aspects of couples' lives:

> Before this program, my wife wouldn't allow me to move with her phone. There would be a lot of arguments if I tried to get her phone, but these days that has changed. She can use my phone and I can use hers and there would be no suspicions. In the past, such suspicions would even lead to fighting … I am an electrician and the numbers that belong to my clients are all saved in my phone with the client's name. However, these days my wife can pick up my phone and even if she finds it's a woman on the other end of the line, she will tell me such a person called and she will not make a big deal out of it (*Daniel,* SVAWS: 43%, his AUDIT: 17%).

Daniel's quote highlights how in addition to more sharing of resources, participants became more understanding of their partner's thoughts, feelings, and behaviors. *Brian* echoed this sentiment, saying about his wife, "When there is nothing in the home, she knows there is really nothing" (SVAWS: 40%, his AUDIT: 92%). While women were described as more understanding of their partner not having money, a few men described trying to understand their wife when she did not want to have sex. For example:

> The way I think about things have changed, like I no longer beat my wife or force her to have sex with me and I talk over issues- no fighting … I can tell you (*laughs*) there was a day I asked my wife for sex but she refused. I remembered what I was taught by the SHAPRZ people (*in CETA)* and I just decided to understand that she didn't want to do it, so I respected that … I would beat her in the past, but now I know what is right to do (*George*, SVAWS: 62%, his AUDIT: 36%).

Notably, there were examples of men not adhering to gender normative behaviors in their relationships as they expressed understanding their wives' experience. For instance, when asked what a husband should do if his wife was not completing household tasks, *Stephen* responded "Help her, because you might not know. Maybe she is sick or she is tired, like the way I do myself, I do cook and bathe my children even when she is there" (SVAWS: not available, his AUDIT: 82%). Another man explained seeing his role as head of household differently after CETA:

> Before I started the program, I used to think I'm the only head of the house. Everything- just dictate- this and this, this and this. But this time, we do sit together, plan/consult one another. See the way forward together – not just a one-party thing (*Brian,* SVAWS: 40%, his AUDIT: 92%).

In a focus group, *Elijah* even described being encouraged by his counselor to consider how his actions might be contributing to his wife's excessive drinking (SVAWS: 44%, his AUDIT: 69%). He initiated a conversation with his wife in which she revealed frustration over seeing him with money that was not being spent on the home, leading her to suspect him of having a girlfriend. He then explained that this was money related to work that did not belong to him, he said her drinking changed. This is an example of how efforts to understand the other partner's experience ultimately led to better communication.

Participants also expressed greater understanding of their own thoughts, feelings, and behaviors, including triggers to anger. Men and women both talked about no longer being short-tempered, becoming less frustrated, and "overcoming moods."

> I have also overcome the temper, and the BP [blood pressure] I use to have those days. … I also wanted to take caffino tablets just to kill myself before CETA … *(interviewer asks if she still feels this way)* … No,

not at all, because CETA has made me to reason and also to understand some other situations. This time I live as a happy person, I don't remember the time I went to check for BP and the time I got upset with my husband. (*Daisy,* SVAWS: 47%, her partner's AUDIT: 100%).

Rose, described the use of triangles (i.e., what CETA calls Thinking in a Different Way) as helping to control her anger:

> We learnt two types of triangles there was BEFORE and AFTER. We used to start with before, meaning before comes with thinking, feeling and behavior. Meaning, when you are thinking too much, you will have bad feelings. And from having bad feelings have bad behavior, which means I can react. So, all what will come on the behavior, that's AFTER, meaning my behavior won't be good … I use those triangles on myself to control or change my thoughts- not to react to things, for example when am having problems with my husband, I shouldn't be thinking too much, because when I think too much, I'll have bad feelings. And from bad feelings, I'll have bad behavior, which can lead me to react to things. So, I learnt to say thinking too much can cause a lot of things. That's the reason why this time I control myself even if problems come at home (SVAWS: 40%, her partner's AUDIT: 92%)

Rose also explained that the triangles served as a tool for helping to cope with abuse: "When I think of the triangles, even if he starts shouting, I would use the good thought so that I have good feelings." Using these triangles was generally said to help men and women make good decisions in their marriages. Men and women explained that these new skills combined with less alcohol use (i.e., when there was "no more confusion") and anger, allowed them to talk to solve their problems, show each other respect, and forgive. As *Elijah* explained, "I was taught how to reduce arguments by knowing or finding out what causes the argument in the first place" (SVAWS: 44%, his AUDIT: 69%)." Ultimately, these positive relationship dynamics helped prevent future conflict, protected women from violence, and fostered more cooperation. As *Lucy* explained "we take care of each other now."

4. Discussion

Men and women in Zambia described multiple mechanisms by which CETA potentiated change in IPV. These mechanisms included the use of de-escalation strategies (i.e., "walking away" and "staying quiet" to stay safe), reductions in male and/or female alcohol use, and increases in intra-couple trust and understanding that facilitated better communication. These mechanisms of change were discussed as interrelated; just as each person's behaviors interacted to produce potentially violent conflict, change in one person's behavior (i.e., alcohol use) helped generate other changes within that person or the couple (i.e., trust and cooperation in household budgeting). This intercouple dynamic has been noted in quantitative studies of IPV; for example, odds of past year IPV have been found to be highest among couples in which both the man and woman are heavy drinkers (Abramsky et al., 2011). The importance of intercouple dynamics to reducing IPV, especially related to self-regulation, more effective communication, and enhanced trust and respect was also highlighted by participants of a community-mobilization gender-norm focused intervention (SASA!) for preventing IPV in urban Uganda (Starmann et al., 2017).

CETA included a safety and violence prevention element in addition to other core CBT components (e.g., thinking in a different way). In our study, participants referenced the use of cognitive triangles (i.e., cognitive coping and restructuring) not only for understanding how their own feelings and thoughts were connected to violence-related behaviors and for restructuring these thoughts, but for challenging their assumptions about their partner's behavior. Velonis et al. (2018) found that, depending on context, cultivating self-reflection may contribute to changes in perpetrators' attitudes about violence and the subsequent development of empathy for their partners; cognitive triangles may be one tool for encouraging these changes. In addition, participants were motivated to change by connecting behavior and consequence (e.g., how drinking shaped response to provocation or possible bad outcomes associated with violence), consistent with a proposed model of IPV desistance that includes recognition of consequences as a facilitator of behavior change (Walker et al., 2015).

Participants also spoke about CETA, specifically by teaching safety strategies and increasing understanding, helping them control their reactions in the face of provocation as facilitating reductions in violence. In particular, the behavioral modifications that CETA taught (i.e., "walking away" and "staying quiet") were described as having broader utility in managing anger by women and men. These same self-regulation strategies were described by Ugandan participants in SASA! (Starmann et al., 2017). The importance of managing responses to antecedents of violence, including alcohol, stress, and poor communication, has also been recognized in the literature on IPV desistance (Walker et al., 2015). In addition, a review of IPV prevention programs found that skill building (a) related to conflict resolution or (b) that fostered shared decision making within families was a promising strategy (Ellsberg et al., 2015). Participants' narratives build on this by suggesting that CETA can help stop or prevent future violence by creating improved communication and trust, particularly around matters of money. Again, Ugandan men and women who participated in SASA! described similar concrete changes in communication and trust as part of the process of change, including communicating about finances and joint planning for the family (Starmann et al., 2017).

The second common model for treating perpetrators of IPV, the Duluth model, focuses heavily on men recognizing gendered power dynamics. IPV prevention programs in LMICs have placed great emphasis on challenging harmful gender and violence-related norms. Though men and women described acting in ways that challenged gender roles, many of the changes observed as resulting from CETA were discussed in ways that cohered to gender normative behavior (i.e., staying quiet was seen as a safety strategy that also conferred respect to one's husband). Understanding how safety strategies are interpreted and used within a given cultural context is essential, as the effectiveness of safety strategies is infrequently evaluated and some strategies, particularly those that involve resistance, have been found to increase risk (Parker and Gielen, 2014). Given similarities in CETA and SASA! participants' narratives around mechanisms of violence reduction, important avenues for research include the use of "thinking differently" components to change violence norms, and the extent to which challenging gender norms may augment the impact of programs like CETA that target mental health problems and substance use. Research from South Africa demonstrating that nearly 1 in 5 men who perpetrated intimate partner violence held both gender inequitable views and were problem drinkers reiterates the need for integrated interventions that purposefully address this syndemic (Hatcher et al., 2019).

The emphasis placed by participants on the relationship between alcohol use and violence was expected given the trial eligibility criteria and the inclusion of CBT for substance use and relapse prevention component in CETA for all men, and for women when indicated. In this component, participants set specific behavioral goals related to alcohol use; rated their motivation to achieve their goals; identified facilitators of use; and, practiced strategies to counter the influence of those facilitators. Consistent with participant descriptions of gradual reductions in use, CETA's substance use element is based on a harm reduction model of change and does not exclusively require or promote abstinence (Logan and Marlatt, 2010). CETA could also include a substance use support component to help partners (mostly women) learn about alcohol abuse and assist the partner using alcohol in identifying drivers and reducing use.

Three different models have been proposed to explain associations¬ observed between alcohol and IPV: a spurious relationship, alcohol indirectly leading to violence, and alcohol proximally determining

violence (Klostermann and Fals-Stewart, 2006). This study's findings align well with the proximal effects model, as women clearly described both how reductions in alcohol use led to reductions in violence and the utility of employing safety strategies when their partner was drinking to avoid violence. However, participants' narratives also highlighted complex, indirect pathways in which reductions in alcohol use removed sources of conflict in the relationship, particularly via impacts on household economics (see Table 1). Participants' pointed to the importance that food insecurity plays in creating household stress and conflict and how reducing alcohol use may help resolve some of that stress independent of financial intervention. This echoes quantitative findings from South Africa where women's food insecurity was found to be a direct predictor of IPV victimization (Gibbs et al., 2018). Narratives from this study and others also point to poverty-related limitations on a man's ability to meet his perceived role as provider as linked to violence (Silberschmidt, 2001; Starmann et al., 2017). In South Africa, having worked in the past 3-months was also found to predict a pattern of reduced IPV perpetration versus continued or increased perpetration among men in a combined economic and gender norms-focused intervention (Gibbs et al., 2020).

4.1. Limitations

While we were able to conduct second interviews with participants to employ iteration in developing emergent themes, a large gap in time between interviews likely limited participants' abilities to build upon their prior responses. Additionally, because of data collection timing, quantitative violence and alcohol scales may not be representative of participants' actual level of use at the time of qualitative data collection. In addition, as initial interviews took place several months following completion of CETA, participants may have forgotten details of their experience. However, given that CETA has been found to have sustained impacts on violence and alcohol use (Murray et al., 2020), our data may provide glimpses into the mechanisms of change that are most salient to participants in sustaining impact over time. Our results are also specific to couples where men engaged in hazardous alcohol use, and the non-alcohol-related mechanisms highlighted by participants in CETA may also be different in nature in couples in which no one is misusing alcohol. Future research should explore the effectiveness of CETA as a violence prevention strategy for couples who are not misusing alcohol.

5. Conclusions

Ultimately, our study demonstrates that couples participating in a transdiagnostic intervention that addresses multiple mental and behavioral problems understood the therapy to reduce intimate partner violence by teaching safety strategies and reducing alcohol use, as intended. Their accounts also add to the existing literature on mechanisms of IPV reduction by highlighting how safety strategies, in particular, were often used and understood in ways the reflected gender norms; the complex interrelationship between changing household economics and changes in alcohol use and IPV; and the importance intercouple dynamics, including positive developments in trust and communication, in IPV reduction. The potential for combining this type of transdiagnostic psychotherapy with poverty reduction or gender norms focused interventions is an important avenue for future exploration.

Declaration of competing interest

None.

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