

https://dspace.org/

Groupbased SelfHelp Plus Problem Management Plus and preexposure prophylaxis to improve mental health and reduce HIV risk in survivors of rape in KwaZuluNatal South Africa A pilot and feasabilty randomised study

J Nothling; S Willan; G Gigaba; E Chirwa; Rachel Jewkes ...

https://hdl.handle.net/10539/48311
WOS

Downloaded from a DSpace repository. https://dspace.org/

SSM - Mental Health 8 (2025) 100513

Contents lists available at ScienceDirect

SSM - Mental Health

journal homepage: www.journals.elsevier.com/ssm-mental-health

Group-based Self-Help Plus, Problem Management Plus and pre-exposure prophylaxis to improve mental health and reduce HIV risk in survivors of rape in KwaZulu-Natal, South Africa: A pilot and feasabilty randomised study

J. Nöthling [a,*], S. Willan [a,b], G. Gigaba [b], E. Chirwa [a], S. Mhlongo [a], B. Myers [c], B. Spooner [d], S. Seedat [e], C. Garcia-Moreno [f], R. Jewkes [a,g], N. Abrahams [a,h]

[a] South African Medical Research Council, Gender and Health Research Unit, Cape Town, South Africa
[b] School of Applied Human Sciences (Psychology), University of KwaZulu-Natal, Durban, South Africa
[c] Curin Enable Institute, Faculty of Health Sciences, Curtin University, Perth, Australia
[d] South African Medical Research Council, HIV and Infectious Diseases Research Unit, Cape Town, South Africa
[e] Stellenbosch University, Department of Psychiatry, Cape Town, South Africa
[f] World Health Organization, Department of Reproductive Health and Research, Geneva, Switzerland
[g] School of Public Health, Faculty of Health Sciences, University of the Witwatersrand, Johannesburg, South Africa
[h] University of Cape Town, School of Public Health and Family Medicine, Faculty of Health Sciences, Cape Town, South Africa

ARTICLE INFO

Handling Editor: Prof B Kohrt

ABSTRACT

Introduction: Gender-based violence (GBV) and HIV are highly prevalent in South Africa and are significant public health problems. Rape is a risk factor for both HIV acquisition and adverse mental health outcomes. Post-rape interventions targeting HIV and mental health are needed to mitigate risk and aid recovery.

Methods: Self-Help Plus (SH+) and Problem Management Plus (PM+) are lay counsellor-facilitated, group-based mental health interventions. We adapted them for KwaZulu-Natal, South Africa and translated them into isiZulu. 106 women who had been raped were randomized, in groups of 8–10, to a post-rape mental health intervention group (RI) or to a rape-survivor waitlisted control (RC) group. Additionally, we included an intimate partner violence shelter intervention (SI) group (n = 38). All participants completed questionnaires at baseline, 3- and 6-months. The intervention groups completed SH+ and PM+ in the first 3 months after completing the baseline assessment. All HIV-negative women were offered once daily, oral Truvada as Pre-Exposure Prophylaxis (PrEP) for HIV.

Results: The RI group showed a significant decline in depression at 3-months ($\beta = -5.41$, $p = 0.017$) and at 6-months ($\beta = -10.23$, $p = 0.005$) compared to the RC group. The SI group showed a significant decline in PTSD scores at 6-months ($\beta = -3.5$, $p = 0.031$). Both groups, RI ($\beta = -4.91$, $p = 0.026$) and SI ($\beta = -3.5$, $p = 0.026$), showed a significant decline in symptoms of complex PTSD (i.e., disturbances in self organization) at 3-months. 65 % of eligible participants (n = 85) in all groups took up PrEP with relatively high adherence.

Conclusion: In this pilot and feasibility trial, SH+ and PM + show promise in reducing depression, PTSD and cPTSD scores over time in women after rape and IPV. PrEP uptake was favorable, suggesting that after rape, many women are open to long-term HIV prophylaxis with PrEP, however uptake can be improved with additional measures.

1. Introduction

Rape and intimate partner violence (IPV) are the most prevalent forms of gender-based violence (GBV) experienced by women globally and in South Africa. Population based studies show one in four women experience rape in their lifetime and one in three experience IPV (Jewkes et al., 2011; Machisa, 2011). In addition to the high levels of GBV, South Africa also has a high burden of HIV with 7.8 million people

* Corresponding author.
E-mail address: jani.nothling@mrc.ac.za (J. Nöthling).

https://doi.org/10.1016/j.ssmmh.2025.100513
Received 22 April 2025; Received in revised form 17 August 2025; Accepted 20 August 2025
Available online 3 September 2025
2666-5603/© 2025 The Authors. Published by Elsevier Ltd. This is an open access article under the CC BY license (http://creativecommons.org/licenses/by/4.0/).

living with HIV in 2023 (UNAIDS, 2023). The first longitudinal study focusing on HIV acquisition among South African women who have been raped, found that they had a 60 % increased likelihood of HIV acquisition in the aftermath of rape, compared to women who had not been raped, with the adverse mental health effects of rape being a major contributory factor (Abrahams et al., 2021).

In the World Health Organization's (WHO) multi-country mental health surveys, having been raped and experiencing IPV carried the highest conditional risk for PTSD compared to other types of trauma (Kessler et al., 2017). Both IPV and rape are also associated with an increased risk for depression and anxiety, compared to other types of trauma (Dworkin, 2020; Lagdon et al., 2014; White et al., 2024). Interpersonal traumas like IPV and rape are associated with childhood abuse and revictimization and often occur in a context where there are multiple and prolonged exposures (Bellot et al., 2024; Walker et al., 2019). As such, women exposed to rape and IPV are also likely to experience symptoms of complex PTSD (cPTSD) e.g. negative self-concept, emotional numbing and dysregulation, and withdrawal from social relationships (Nestgaard Rød and Schmidt, 2021).

Low- and middle-income countries (LMICs) are characterized by a lack of resources and access to mental health care (Wainberg et al., 2017). Given the prevalence of IPV, rape, HIV and its associated adverse mental health outcomes in South Africa, there is a significant need for cost-effective, evidence-based interventions that can address multiple psychological disorders at once. The WHO has developed two suitable interventions, called Self-Help Plus (SH+) and Problem Management Plus (PM+) (Dawson et al., 2015; Epping-Jordan et al., 2016). Both SH+ and PM + have been tested in e high conflict settings and have shown favorable results in LMICs (Karyotaki et al., 2023; Mwangala et al., 2024).

We conducted a randomized control pilot trial, with the objectives of (1) contextually adapting these interventions for use with women who have experienced rape and IPV, (2) assessing the feasibility and acceptability of the interventions, and (3) exploring the potential effectiveness of these interventions in reducing symptoms of PTSD, cPTSD, depression and anxiety. In addition, we also evaluated the acceptability of Truvada given for Pre-Exposure Prophylaxis (PrEP), as a potential intervention to reduce HIV acquisition.

2. Methods

2.1. Participants and study design

Rape survivors who had experienced a rape in the past 6 months were recruited at rape crisis centres in the eThekwini region of South Africa. This was done through psychological counsellors who were aware of the inclusion and exclusion criteria and referred participants to the study if they were eligible and interested. Women seeking support for IPV, or family violence were recruited through social workers who were also aware of the inclusion and exclusion criteria and who managed the shelters or safehouses in the same region. All rape survivors were between the ages of 18 and 45. All women from shelters were older than 18 years. Participants were excluded if (1) they had an intellectual disability and were unable to give informed consent to participate in the study, (2) they were at imminent risk for suicide, (3) they were currently experiencing a psychotic episode, or (4) or had severe substance dependence or were intoxicated at the time of interview. Participants who were excluded or withdrew for these reasons, were referred to treatment and support services.

A total of 108 rape survivors were randomized to intervention groups (RI) or rape survivor waitlist control groups (RC) on a 1:1 ratio, with an average of 8–10 women per group and 12 groups in total. Fifty-four women were allocated to the RI group and 52 women to the RC group. The shelter intervention group (SI) included 39 women in groups of approximately 10 each, 4 groups in total. The main reasons for entering shelters were intimate partner violence (n = 15), family violence (n = 7), non-partner rape (n = 1) and personal growth or prior trauma (n = 9). The minimum sample size was calculated based on the recommended sample size for feasibility studies of 30–36 per arm (Billingham et al., 2013). There was no shelter control group since cross-contamination could not be avoided given the confined spaces in which women in shelters reside. The RC group served as the control group for the RI group and the SI group.

2.2. Interventions: self-help plus, problem management plus and pre-exposure prophylaxis

The World Health Organization (WHO) developed a facilitator-guided, group-based intervention, known as Self-Help Plus (SH+). This transdiagnostic intervention was developed to enhance mental health in resource limited settings (Epping-Jordan et al., 2016). Pre-recorded audio material and an illustrated self-help book called 'Doing What Matters in Times of Stress' were used along with individual exercises and small group discussions. The content was based on acceptance and commitment therapy (ACT) and was facilitated by trained, non-professionals over five sessions of 2 h each. The intervention has a strong focus on mindfulness and the modules cover skills related to grounding, unhooking, acting on your values, being kind and making room for difficult thoughts and emotions.

Problem Management Plus (PM+), also developed by the WHO (Dawson et al., 2015), aims to improve mental health and psychosocial well-being in participants experiencing symptoms of depression, anxiety or stress. The sessions include individual exercises, small group discussions and a case study booklet. The content is based on Cognitive Behaviour Therapy (CBT) techniques and, like SH+, is facilitated by trained non-professionals over five sessions of 2 h each. The modules include psychoeducation, stress management techniques, problem management techniques, and task-orientated activities aimed at improving mood and functionality and strengthening social support.

SH+ was designed to enhance mental health, prevent common mental disorders (CMD, e.g. depression, anxiety and PTSD) and provide skill for coping with general stress. It is recommended for use as a general intervention suitable for all members of a community irrespective of level of stress. It is also recommended for use as a first step in a stepped care programme alongside other mental health interventions (Epping-Jordan et al., 2016). PM+ was designed to treat distress in low mental health resourced communities and has elements designed to treat symptoms of CMDs (Dawson et al., 2015). Given the high prevalence of CMDs in the aftermath of rape (Nöthling et al., 2022), we hypothesized that SH + alone would not be enough to reduce symptoms of CMDs and wanted to investigate the feasibility of delivering both interventions to inform potential upscaling of intervention delivery in the future.

Pre-exposure prophylaxis (PrEP) in the form of Truvada (Tenofovir Disoproxil/Emtricitabine) tablets is recommended as HIV prevention for continued use in populations at substantial risk of HIV acquisition (Okwundu et al., 2012). The use of Truvada as oral PrEP was approved by the South African Health Products Regulatory Agency (SAHPRA) in 2015 (Medicines Control Council, 2015). Daily dose Truvada is currently available and distributed by the National Department of Health (NDOH) in South Africa (Department of Health, 2020). We included PrEP as an HIV prevention intervention for all women included in the study, but particularly to investigate uptake in women who experienced rape, as they are at increased risk of HIV acquisition in the aftermath of rape (Abrahams et al., 2021).

2.3. Procedure

2.3.1. Adaptation, translation, training and testing

The intervention materials were adapted and contextualized for isiZulu speaking women in eThekwini. The English content were translated and back-translated by a translation team. Research assistants

were trained in facilitating SH+ and PM + by an adult education specialist over a two-week period and were supported by a clinical psychologist (GG) during the training and over the course of the project. The adapted SH+ and PM + materials were tested with 20 isiZulu speaking women who had histories of gender-based violence. Further contextual adaptations and changes to translations were made based on their feedback. (For more details on the adaptation process see Willan et al., xxx).

2.3.2. SH+ and PM+

After informed consent was obtained, all participants (RI, RC and SI) completed a baseline interview and were assigned to intervention or control arms. Those assigned to the intervention arm (RI and (SI)) were invited to return to the research site one week after completing the baseline interview. They attended five weekly group SH + sessions. Each intervention session was facilitated by two facilitators. After completing SH+, women in the RI and SI groups were offered PM+, which followed the same time and group format. Both interventions were completed before the 3-month follow-up visit. Participants assigned to the RC group were offered SH + after completing the 6-month follow-up visit. They were also offered PM + after completing SH+. On a monthly basis, the research assistants made brief telephonic contact with women in the RC group to remind them of upcoming 3- and 6-month interviews and to assess any pressing mental health needs and refer them when immediate intervention was needed.

2.3.3. HIV testing and PrEP

At baseline, in a one-on-one consultation, after obtaining consent and counselling, a professional nurse completed an HIV test with each participant. Women who tested positive and were not aware of their status received further counselling and were referred to follow-up services to access antiretroviral medication. Women who tested negative received counselling around the purpose, use, benefits and side-effects of PrEP and were offered and dispensed one month's supply of PrEP, if they were interested. Those who were interested were asked to return after a month to receive a further two month's supply. This process was repeated with all HIV negative women until the end of the study when they were referred to public services for continuation of PrEP. HIV testing was repeated at 3- and 6-months.

2.3.4. Qualitative measures

Individual qualitative interviews at baseline, 3- and 6-months were used to assess (1) barriers and facilitators to attendance (RI, RC and SI groups), (2) reasons why they agreed to attend the sessions (RI, RC and SI groups), (3) likes and dislikes related to the content and delivery of the sessions (RI and SI groups), (4) the impact of the intervention on their daily lives (RI and SI groups), (5) improvement in mental health (RI and SI groups), and (6) recommendations for improvement (RI and SI groups). Only findings related to improvement in mental health are reported in this paper (For detailed qualitative findings see Willan et al., xxx.) At 3- and 6-month follow-up visits, women who opted to take PrEP were asked why they decided to take PrEP, how the medication made them feel, what made it easy or challenging to take PrEP and how they felt about continuing to take PrEP (RI, RC and SI groups).

2.3.5. Quantitative measures

2.3.5.1. Demographic factors, attendance and retention. Demographic information was gathered by asking participants about their age, completed level of education, relationship status, source of income and amount of monthly income. For the intervention groups, attendance registers were completed after every intervention session and were used to determine intervention retention.

2.3.5.2. Centre for epidemiologic studies – depression scale (CES-D). The CES-D measures depression in accordance with DSM-IV criteria (Radloff, 1977). The CES-D is a twenty-item, self-report measure with responses measured on a 4-point Likert scale ranging from 0 ('rarely or none of the time') to 3 ('most or all of the time'). Higher scores represent higher depression symptoms. A cut-off of 21 is considered indicative of moderate depression (Park and Yu, 2021).

2.3.5.3. Generalized anxiety disorder assessment (GAD7). The GAD-7 is a 7-item questionnaire used to assess symptoms of anxiety (Spitzer et al., 2006). Responses are measured on a 4-point Likert scale ranging from 0 'not at all' to 3 'nearly every day'. Higher scores represent higher GAD symptom severity. Scores of 5, 10 and 15 are considered indicative of mild, moderate and severe anxiety, respectively. The GAD-7 has shown good sensitivity (89 %) and specificity (82 %) in identifying generalized anxiety disorder, at a cut-off of 10. The GAD-7 is also a moderately good measure to screen for panic disorder and social anxiety disorder.

2.3.5.4. International trauma questionnaire (ITQ). The ITQ measures symptoms of PTSD and cPTSD in accordance with the International Classification of Diseases, version 11 (ICD-11) (Cloitre et al., 2018). The first 9 items measure PTSD symptoms of re-experiencing, avoidance and a sense of threat along with functional impairment resulting from these symptoms. The last 9 items measure affect dysregulation, negative self-concept and disturbances in relationships, which are primarily associated with disturbances in self-organization (DSO), along with functional impairment resulting from these symptoms. The PTSD and DSO symptoms combined represents cPTSD. Responses are measured on a 5-point Likert scale ranging from 0 'not at all' to 4 'extremely. Higher score indicates higher symptom severity. A cut-off for PTSD and cPTSD is calculated based on the presence of symptoms (score of 2 or more) for each one of the three PTSD and three cPTSD symptom clusters.

2.4. Ethical concerns

The study was approved by the Human Research Ethics Committee of the South African Medical Research Council (SAMRC). Participants were reimbursed R350 ($20) for their time and travel expenses. The intervention facilitators were supported by a clinical psychologist who provided them with debriefing and assisted when participants were in need of referral to specialized services outside of the study. The study protocol was registered on the Pan African Clinical Trial Registry (PACTR202211795963218).

2.5. Data analysis

Differences between groups, related to demographic variables and mental health outcomes, were assessed using ANOVAs and Chi-square tests. An intention-to-treat analysis was conducted using mixed multiple regression models with depression, anxiety, PTSD and DSO/cPTSD scores as outcomes and group as predictor. Models were completed for change in outcome scores from baseline to 3-month and from baseline to 6-months. The models were also adjusted for the baseline measure score of the mental health outcome. The RC group was used as the reference group. Attendance registers were used to assess retention.

Uptake and adherence of PrEP was assessed using descriptive statistics and ANOVAs for group comparison. Small group sizes prohibited more complex analysis. Thematic analysis was used to analyze the qualitative data related to the mental health impact of the interventions and to analyze the data related to PrEP. In vivo coding was applied independently by two researchers (Braun and Clarke, 2006). The codes and themes were compared and discussed until consensus was reached.

3. Results

In total, 144 women participated in the study of which 131 were

included in the analysis. Thirteen women only completed the baseline interview and not the 3- and 6-month interviews. Of these, 49 women were in the RI group, 50 in the RC group and 32 in the SI group. In the RI group four (8.2 %) women did not attend any sessions, 14 (28.6 %) completed SH + only and 31 (63.3 %) opted to completed PM+ in addition to SH+. The average number of sessions attended in the RI group was 4.2 for SH+ and 2.9 for PM+. In the SI group 2 (6.3 %) women completed SH + only and 30 (93.7 %) completed both SH+ and PM+. The average number of sessions attended in the SI group were 4.6 for SH+ and 4.4 for PM+. The study flow is presented in Fig. 1.

All women completed the baseline qualitative interviews enquiring about the feasibility of the interventions and about PrEP use (see Fig. 2). Twenty-six women from the RI group and 15 women from the SI group completed the follow-up qualitative interviews enquiring about the impact of SH+ and PM+. Twenty-three women from the RI group, 12 women from the SI group and 3 women from the RC group completed the follow-up qualitative interviews enquiring about PrEP acceptance and adherence.

3.1. Demographics and intervention attendance

The demographic and intervention attendance are presented in Table 1 along with the group comparison statistics. There were no significant differences in education level, marital status, source of income, income amount and HIV status between the groups. The SI group was slightly older (m = 32.1) than the RI (m = 27.2) and RC (m = 27.4) groups ($p = 0.003$). The RI and SI groups attended a similar amount of SH + sessions, but the SI (4.4) group attended a significantly higher number of PM + intervention sessions compared to the RI (2.9) group. None of the in the RI and SI groups were referred for specialized mental health treatment. One woman in the RC group was hospitalized for psychosis and long-term in-patient treatment. She was subsequently withdrawn from the study and excluded from the analysis.

3.2. Mental health at baseline, 3- and 6-months

The mental health scores at baseline, 3- and 6-months are presented in Table 2 along with the group comparison statistics. There were no significant differences in baseline anxiety, PTSD and DSO scores or cut-offs. However, the RI (m = 32.5) and RC (m = 33.4) groups had significantly higher depression scores at baseline compared to the SI (m = 25.8) group ($p = 0.010$). The RI (83.7 %) and RC (88.0 %) groups were also significantly more likely to score above the clinical cut-off for depression compared to the SI (65.6 %) group ($p = 0.035$). The SI group had significantly lower PTSD scores (m = 7.8) at six months compared to the RC (m = 12.9) and RI (m = 11.1) groups ($p = 0.015$).

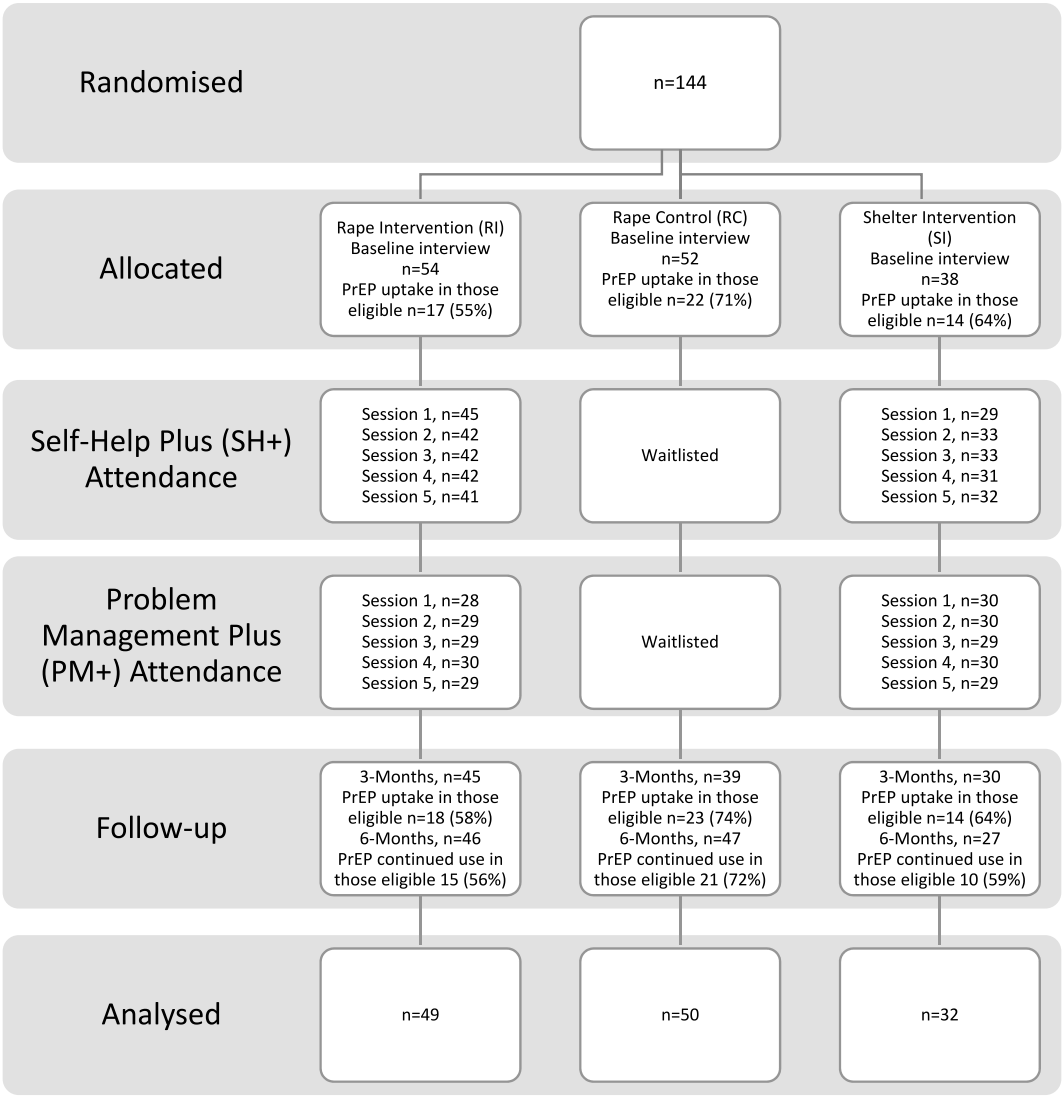


Fig. 1. Study flow diagram.

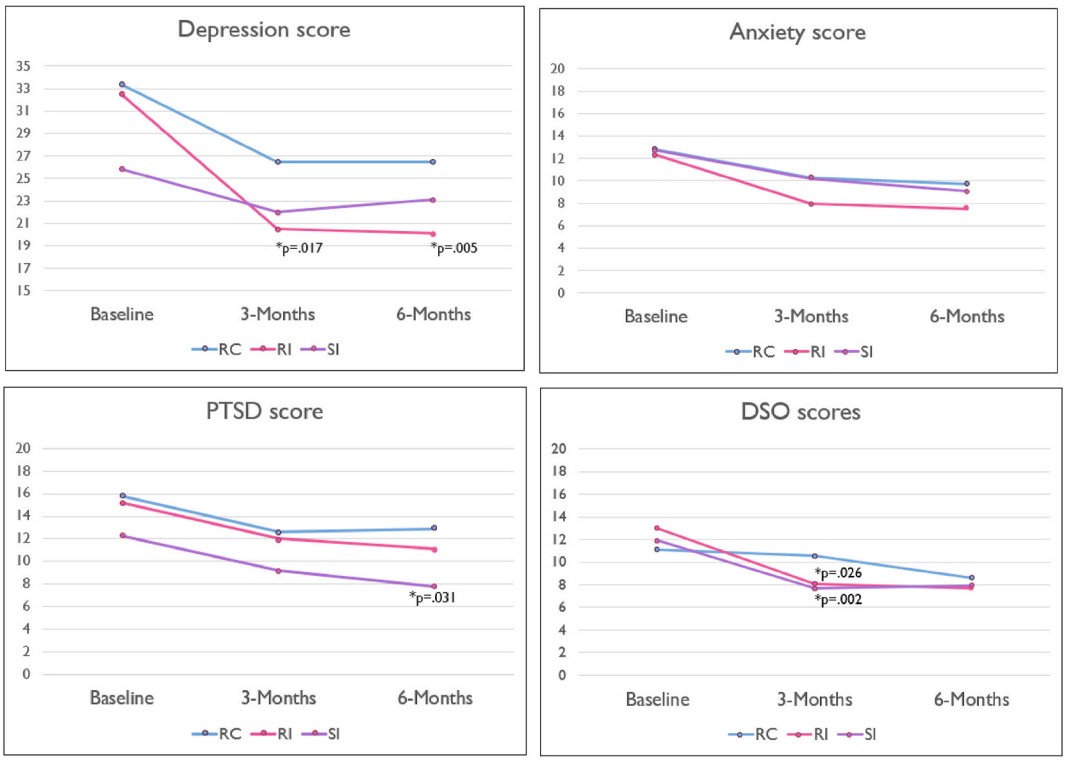


Fig. 2. Change in depression, anxiety, posttraumatic stress disorder and disturbances in self organization scores.
*p < 0.05; Abbreviations: rape control (RC), rape intervention (RI), shelter intervention (SI), posttraumatic stress disorder (PTSD), disturbances in self organization (DSO).

3.3. Change in mental health scores over time

The results of the mixed regression models investigating change in depression, anxiety, PTSD and DSO scores are presented in Table 3 and Fig. 1. There was a significant decline in depression scores from baseline to 3-months ($\beta = -5.41$, $p = 0.017$) and from baseline to 6-months ($\beta = -10.23$, $p = 0.005$) in the RI group compared to the RC group. There was also a decline in anxiety scores from baseline to 3-months ($\beta = -1.69$, $p = 0.072$) and from baseline to 6-months ($\beta = -1.74$, $p = 0.051$) in the RI group compared to the RC group, but the association was not significant, although a trend was observed. In the SI group, there was a significant decline in PTSD scores from baseline to 6-months ($\beta = -3.5$, $p = 0.031$) and a significant decline in DSO scores from baseline to 3-months ($\beta = -3.5$, $p = 0.026$). There was also a significant decline in DSO scores from baseline to 3-months ($\beta = -4.91$, $p = 0.026$) in the RI group.

3.4. Participants' perspectives on attending group-based interventions

3.4.1. A space to speak and learn

During baseline interviews many women mentioned that they anticipated valuing the opportunity to have a space to talk about what they have been through. They wanted to be able to share, get information and learn from each other.

> *"… Hopefully it can help me manage this ordeal that I am going through since I don't have anybody to talk to at home. I need a space where I can talk and open up about what happened to me …"* (baseline, RI)

However, some women felt worried and uncomfortable with the idea of sharing their experience in a group. They described themselves as introverted, shy and slow to warm up to people they do not know.

> *"… It would be challenging and scary. I don't usually talk … I face my demons alone. It would be my very first time …"* (baseline, RI).

3.4.2. Healing and coping

The most common reason for deciding to participate was to heal and to cope. Women expressed the need for a safe space to recover, grow, deal with the pain, learn how to handle life challenges and to move forward with their lives. They also indicated that they want to get closure, be stronger, have a better life and go back to being themselves.

> *"… I am sure it is going to help me and [I will] learn a lot about how people handle their feelings and move on …"* (baseline, RC)

3.4.3. Shared experiences and support

Women valued the opportunity to share their experiences with each other and recognized the importance of receiving support. Many women acknowledged that being with other women who went through similar traumas, may bring them comfort and helped with normalizing their emotions.

> *"… [I want] to find healing and comfort from hearing others' stories … to get that feeling that I am not the only one who went through this …"* (baseline, RI)

3.5. Participants' perspectives of the impact of the intervention on their mental health

When asking participants about how they feel after completing the intervention, they mentioned a reduction in symptoms related to depression, anxiety, PTSD and cPTSD. However, many of these symptoms overlap between these psychological disorders and are therefore described below, based on the themes they emanated from.

3.5.1. Depressions, sadness and inactivity

Women mentioned that before attending the intervention session, they had struggled with symptoms of depressions, specifically motivation and productivity, but also with sadness, crying spells, ruminating

Table 1
Socio-demographic characteristics across intervention groups.

	Rape Control (RC) n = 50	Rape Intervention (RI) n = 49	Shelter Intervention (SI) n = 32	*p*
	Mean (SD)			
Age	27.2 (5.3)	27.4 (6.8)	32.1 (8.6)	0.003*
Education level				0.280
High school incomplete	25 (50.0)	25 (51.0)	11 (34.4)	
High school complete	25 (50.0)	24 (49.0)	21 (65.6)	
Relationship status				0.110
Married/ living together	7 (14.0)	6 (12.5)	4 (12.5)	
In a relationship	31 (62.0)	35 (72.9)	15 (46.9)	
Single	12 (24.0)	7 (14.6)	13 (40.6)	
Source of income				0.630
Employed/ Selling goods	16 (32.0)	16 (32.7)	12 (37.5)	
Social grant	20 (40.0)	16 (32.7)	11 (34.4)	
Partner support	3 (6.0)	2 (4.1)	0 (0.0)	
Family support	7 (14.0)	10 (20.4)	3 (9.4)	
No income	4 (8.0)	5 (10.2)	6 (18.8)	
Income amount				0.109
R0 – R500	21 (42.0)	25 (51.0)	21 (42.0)	
R501 – R1000	10 (20.0)	13 (26.5)	10 (20.0)	
R1001 – R2000	7 (14.0)	7 (14.3)	7 (14.0)	
R2001 – R5000	9 (18.0)	4 (8.2)	9 (18.0)	
R5001 or more	3 (6.0)	0 (0.0)	3 (6.0)	
HIV status				0.178
Positive	19 (38.8)	20 (40.0)	12 (37.5)	
Negative	30 (61.2)	30 (60.0)	18 (56.3)	
SH + number of sessions attended	–	4.2 (1.6)	4.6 (0.7)	0.123
PM + number of sessions attended	–	2.9 (2.4)	4.4 (1.4)	0.002*

*$p < 0.05$.

negative thoughts, concentration and eating and sleeping too much or too little.

> *"… I used to sleep and my whole life would be on a standstill and [I would] not do anything. Problem Management helped me understand that not all problems can be solved … I must manage my stress levels and accept the things that can't be changed and change what I can …"* (3-months, RI)

> *"… It helped me bring myself out of thinking deeply …"* (3-months, RI)

After completing the intervention, women reported feeling lighter, happier and motivated to face their problems and difficult emotions.

> *"… It was helpful for me to be around other women who have gone through the same thing and the intervention helped me see that I am not*

Table 2
Comparing all three groups to each other based on mental health measures at baseline, 3- and 6-months.

	Rape Control (RC) n = 50	Rape Intervention (RI) n = 49	Shelter Intervention (SI) n = 32	*p*
	Mean (SD)			
Depression score				
Baseline	33.4 (11.6)	32.5 (10.9)	25.8 (12.1)	0.010*
3-Months	26.5 (12.9)	20.5 (10.9)	22.0 (14.8)	0.087
6-Months	26.5 (12.3)	20.1 (13.5)	23.1 (13.7)	0.069
Anxiety score				
Baseline	12.8 (5.0)	12.3 (5.3)	12.7 (4.7)	0.870
3-Months	10.3 (5.0)	8.0 (4.5)	10.2 (6.2)	0.093
6-Months	9.7 (6.2)	7.5 (5.7)	9.1 (5.0)	0.169
PTSD score				
Baseline	15.8 (6.4)	15.2 (6.1)	12.3 (6.4)	0.074
3-Months	12.6 (6.3)	12.0 (6.5)	9.2 (7.0)	0.073
6-Months	12.9 (6.4)	11.1 (7.2)	7.8 (7.7)	0.015*
DSO score				
Baseline	11.1 (7.6)	13.0 (7.6)	11.9 (6.7)	0.640
3-Months	10.6 (7.6)	8.1 (6.8)	7.7 (6.9)	0.167
6-Months	8.6 (7.5)	8.0 (7.4)	7.9 (6.5)	0.911
	n (%)			*p*
Depression cut-off (≥21)				
Baseline	44 (88.0)	41 (83.7)	21 (65.6)	0.035*
3-Months	27 (69.2)	23 (51.1)	13 (44.8)	0.091
6-Months	21 (65.6)	13 (44.8)	13 (46.4)	0.375
Anxiety cut-off (≥10)				
Baseline	37 (74.0)	30 (61.2)	22 (68.8)	0.390
3-Months	22 (56.4)	15 (33.3)	15 (51.7)	0.077
6-Months	22 (46.8)	15 (32.6)	11 (39.3)	0.295
PTSD cut-off				
Baseline	14 (53.8)	15 (51.7)	10 (33.3)	0.230
3-Months	12 (33.3)	14 (34.1)	8 (27.6)	0.776
6-Months	17 (36.2)	15 (32.6)	8 (28.6)	0.840
cPTSD cut-off				
Baseline	8 (30.8)	10 (34.5)	5 (16.7)	0.270
3-Months	6 (16.7)	5 (12.2)	4 (13.8)	0.846
6-Months	8 (17.0)	9 (19.6)	6 (21.4)	0.858

*$p < 0.05$.

Table 3
Mixed regression models comparing groups and change in mental health scores over time.

		Baseline to 3-Months					3-Months to 6-Months				
Outcomes	Time point	Mean (sd)	Coef (95 % CI)	*p*	Adj Coef (95 % CI)	*p*	Mean (sd)	Coef (95 % CI)	*p*	Adj Coef (95 % CI)	*p*
Depression											
	Rape Control (RC)	26.5 (12.9)	Ref		Ref		26.5 (12.3)	Ref		Ref	
	Rape Intervention (RI)	20.5 (10.9)	−6.20 (−11.44, −0.97)	0.020*	−5.41 (−9.84, −0.98)	0.017*	20.1 (13.5)	−6.52 (−11.53, −1.51)	0.011*	6.03 (−10.23, −1.83)	0.005*
	Shelter Intervention (SI)	22.0 (14.8)	−4.55 (−10.42, 1.33)	0.129	−0.33 (−5.35, 4.68)	0.896	23.1 (13.7)	−3.99 (−9.73, 1.76)	0.174	0.30 (−4.57, 5.18)	0.902
Anxiety											
	Rape Control (RC)	10.3 (5.0)	Ref		Ref		9.7 (6.2)	Ref		Ref	
	Rape Intervention (RI)	8.0 (4.5)	−2.21 (−4.45, 0.04)	0.054	−1.69 (−3.53, 0.15)	0.072	7.5 (5.7)	−2.09 (−4.25, 0.06)	0.057	−1.74 (−3.48, 0.01)	0.051
	Shelter Intervention (SI)	10.2 (6.2)	0.01 (−2.51, 2.53)	0.993	0.04 (−2.02, 2.1)	0.967	9.1 (5.0)	−0.75 (−3.22, 1.72)	0.549	−0.9 (−2.9, 1.11)	0.382
PTSD											
	Rape Control (RC)	12.6 (6.3)	Ref		Ref		12.9 (6.4)	Ref		Ref	
	Rape Intervention (RI)	12.0 (6.5)	−0.85 (−3.77, 2.07)	0.570	−0.27 (−3.57, 3.02)	0.870	11.1 (7.2)	−2.05 (−4.74, 0.64)	0.136	−0.53 (−3.63, 2.58)	0.739
	Shelter Intervention (SI)	9.2 (7.0)	−3.51 (−6.71, −0.31)	0.032*	−1.48 (−4.73, 1.77)	0.373	7.8 (7.7)	−5.29 (−8.37, −2.21)	0.001*	−3.5 (−6.69, −0.32)	0.031*
DSO											
	Rape Control (RC)	10.6 (7.6)	Ref		Ref		8.6 (7.5)	Ref		Ref	
	Rape Intervention (RI)	8.1 (6.8)	−2.87 (−5.97, 0.24)	0.071	−4.91 (−8.08, −1.74)	0.002*	8.0 (7.4)	−0.87 (−3.77, 2.03)	0.557	−2.13 (−5.14, 0.88)	0.165
	Shelter Intervention (SI)	7.7 (6.9)	−3.48 (−6.90, −0.06)	0.046*	−3.5 (−6.59, −0.41)	0.026*	7.9 (6.5)	−1.20 (−4.51, 2.11)	0.476	−1.75 (−4.8, 1.3)	0.260

*p < 0.05; Abbreviations: Standard deviation (sd), Coefficient (Coef), Adjusted (Adj), Reference (Ref), posttraumatic stress disorder (PTSD), disturbance in self-organization (DSO).

alone. The intervention helped with telling our stories, and now I feel lighter emotionally, and better …" (3-months, RI)

3.5.2. Anxiety and stress

Many participants expressed the need to learn new skills and get advice on how to deal with daily problems that causes stress and anxiety. They found the breathing exercises, grounding and unhooking particularly helpful when trying to relax and control their anxiety.

"… My life has changed, especially since we learned about how to manage our problems and stress in PM+ and SH+. I now use those skills to solve my own problems that I was experiencing at home. The exercises help with relaxation of the body and mind …" (3-months, RI)

"… The intervention has been good as I have learned a lot. I am not as stressed out as much anymore, even when stressful situations arise, I use the skills that I have learnt here to manage my stress …" (3-months, SI)

3.5.3. ***PTSD:*** *trauma* ***histories***

Although women were recruited based on the experience of a rape or IPV, many women had complex trauma histories and described multiple and continuous traumatic experiences.

"… I want to get all the possible help so I can heal. I want to break the chain of being raped repeatedly …" (baseline, RC)

"… I have been abused multiple times … I had lost my child due to IPV from their father last year and then I got raped this year … it has been a lot …" (baseline, RI)

"… I wish to learn and know more about other women and things that blind me when it comes to love since I always end up being in an abusive relationship …" (baseline, SI)

3.5.4. PTSD: fear, intrusions and avoidance

In women who have experienced rape, intrusive thoughts, reminders and memories were common. Women often mentioned that they need help to forget about the event, that they do not want to think about it as much as they do and that they want to learn how to work through what happened to them.

"… It might help me not to think too much about the incident and only think of positive things …" (baseline, RI)

"… I want to heal from the bad experiences … to forget about my problems … I need a distraction from bad thoughts …" (baseline, RI)

Bottling up of emotions, isolation and drinking alcohol were often used as a way to avoid reminders of the rape. At baseline, many women wanted to get help for avoidance symptoms. After completing the intervention, some women reported a decrease in intrusions and the use of avoidance mechanisms.

"… [I want to] get help, not bottle everything up … as a mother of two girls I need to process this …" (baseline, RC)

"… I want to learn how to connect with other people, I spend most of the time alone …" (baseline, RC)

"… I used to drink to manage my stress. I used to drink often. Now I don't need to. I can go long periods of time without drinking …" (3-months, RI)

Fear and intrusive thoughts and memories also interfered with sleep and the women found that the breathing exercises were particularly useful when trying to fall asleep.

"… I am not well mentally, ever since the incident. I am afraid. I can't sleep at night so maybe the group will help me mentally so I can be able to sleep …" (baseline, RC)

"… I use the breathing exercise to help with sleeping and calming myself down. I have also learned to listen more and be kind …" (3-month, SI)

3.5.5. cPTSD: affective dysregulation

Anger and the inability to regulate or control anger was one of the most common concerns among women. When reflecting on their emotions prior to the intervention, many women described themselves as short-tempered, sensitive, annoyed, rude, mean, violent and out of control.

"… I have a lot of anger. I am still angry, and I want to deal with this anger because I take it out on people …" (baseline, RI)

After the intervention, many women mentioned that they now feel able to control their anger and are able to calm themselves using the skills they learned, particularly breathing, grounding, managing stress and problem management.

"… I feel okay. I can control myself when I get angry. I now know what to do when I am angry. My behavior has changed …" (3-months, SI)

"… Now I know the steps to take for managing stress. Before I would just get angry and not know where to start with solving my problems. Now I have a plan and I know what to do …" (3-months, RI)

"… It has been helpful. The more we shared and spoke, the anger that we carried reduced …" (6 months, RI)

Although it was less commonly mentioned, some women also reported needing help with emotional numbness and indicated that the intervention was helpful when facing difficult emotions.

"… Staying emotionally shut down does not benefit me, so hopefully this [intervention] will help …" (baseline, RC)

"… Before I used to bottle everything inside and I would have mood swings. Now I can calm myself down and talk about issues …" (3-months, SI)

3.5.6. cPTSD: negative self-concept

Guilt, shame and low self-esteem were a concern for many women at baseline interviews, some of which originated from experiencing, or anticipating experiencing, external stigma and some originated from a history of feeling worthless, ashamed and inadequate.

"… I want to learn to stop blaming myself and also to learn to be comfortable and share my story …" (baseline, RI)

"… [I want to] not feel ashamed of myself when I am around people …" (baseline, RC)

A change in these feelings were reported after the intervention. Women also reported a reduction in impulsive behavior which was often used as a coping mechanism to deal with feelings of inadequacy.

"… I was stressing too much, I used to take decisions without thinking and I used to blame myself a lot …" (3-months, RI)

"… I am feeling lighter than before, I used to be very shy and had low self-esteem but now I can communicate easily with others. I am less stressed about everything …" (3-months, SI)

"… When I engage with people who sided with my perpetrator, I have learned to ground myself and not engage with them …" (6-Months, RI)

3.5.7. cPTSD: disturbances in relationships

Avoiding people because of betrayal of trust in the past and hesitance to form close relationships was reported by women.

"… I want to learn how to connect with other people, I spend most of the time alone …" (baseline, RC)

"… I am not comfortable being in a group of women because I have been betrayed a lot …" (baseline, SI)

"… [I want] to bring myself back as I have lost myself [I want] to trust myself and others …" (baseline, RI)

Relationship conflicts, arguments and fighting was a major concern for most women. It was not only limited to conflict in intimate relationships, but extended to children, family members and work colleagues. After completing the interventions, women reported a reduction in conflict and being able to better manage the conflict when it occurred.

"… When I have problems or find myself in arguments, I am able to use the skills that I have learned …" (3-months, RI)

"… I use grounding when fighting with my partner. I can solve problems now by using the problem management steps …" (6-months, RI)

"… I can calm myself down now. My mother says negative things to me, before I would talk back at her but now, I just keep quiet …" (6-months, SI)

3.6. PrEP uptake and continued use

Baseline PrEP uptake and 6-month PrEP use is shown in Fig. 2 At baseline, 85 (59 %) of women were HIV negative and 59 (41 %) were HIV positive. One participant seroconverted at 3-months. Of the 84 HIV negative participants, 53 took up PrEP at baseline and 2 took up PrEP at 3-months resulting in a total of 65 % PrEP uptake under eligible women. PrEP usage remained relatively stable in the RC and RI groups. In the SI group there was a decline in PrEP usage. The group sizes became too small to assess mental health outcomes as a mediator of PrEP uptake/use across the groups.(See Fig. 3)

3.7. Participants' perceptions and experiences of taking PrEP

At baseline, most women knew about PrEP and that it is used to prevent HIV. However, some women were concerned about taking PrEP, because they were worried others may think they are HIV positive and taking ARVs. Many were also concerned about side-effects, taking medication daily, and whether they can mix it with traditional medicine. At follow-up interviews, most women reported experiencing side-effects which included nausea, dizziness and fatigue. However, the side effects were mostly experienced within the first two weeks after initiation, and then subsided. Some women were hesitant to continue using PrEP and collecting it at the clinic due to the inconvenience it caused and HIV

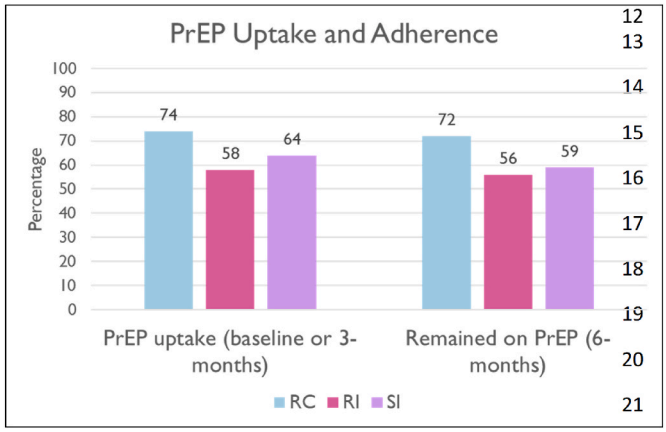


Fig. 3. Percentage of women who took up PrEP and continued use
Abbreviations: pre-exposure prophylaxis (PrEP) rape control (RC), rape intervention (RI), shelter intervention (SI).

stigma.

"… I will not be continuing with it. I don't want to go to the clinic to get it to be honest …" (3-months, SI)

"… I will not continue with PrEP at my local clinic because the ques are too long. You spend the whole day there and they mix us with people who are there to collect ARVs so people will think I am HIV positive …" (6-months, SI)

Participants indicated why women in their communities may not want to take PrEP identifying HIV stigma, linked to PrEP being an ARV drug. A few women also mentioned that PrEP is considered counterintuitive by some since you are taking medication (PrEP for HIV negative women) to prevent taking medication (ARVs for HIV positive women). It was mentioned by a few women that if PrEP is introduced correctly, uptake is likely to be higher.

"… A lot of women are not informed about PrEP, they think they are ARVs. They don't want to take a pill when they are not sick …" (3-months, SI)

"… They [other women] would think it's silly; they would say you are taking a pill to avoid taking a pill …" (6-months, RI)

The main motivation for taking PrEP was protection from HIV and a sense of control around staying HIV negative, especially for rape survivors.

"… Knowing that taking the pill will protect me makes it easy for me to take it", "I feel safe and protected" (3-months, RI)

"… You can never trust the man. PrEP helps me to protect myself …" (6-months, RI)

4. Discussion

This pilot trial explored the feasibility of adapting and implementing group-based SH+ and PM + to reduce symptoms of depression, anxiety, PTSD and cPTSD in women who have been raped and women who have experienced IPV. To our knowledge, this is the first study to implement both SH+ and PM+ in a rape exposed population characterized by high levels of psychological distress, especially within the first 6 months post-trauma.

In the RI group, a statistically significant decline in depression scores at 3- and 6-month follow-up was observed. There was also a decline in anxiety symptoms at 3- and 6-months that was close to statistical significance ($p = 0.051$). PTSD and DSO scores did not show significant change. In a prior rape study, in the same geographical area, it was found that there is a rapid reduction in PTSD symptoms from 20 days post-rape to 6-months post-rape in the absence of a structured intervention, thus indicating natural recovery, however, recovery from depression followed a slower trajectory (Nöthling et al., 2022). Similar to our findings, in a multi-national study conducted with refugees and asylum seekers, SH+ was found to be effective in reducing depression symptoms, but not PTSD symptoms (Purgato et al., 2021). A recent meta-analysis of the effectiveness of PM + also showed that the treatment effect for depression was much greater than for PTSD, post-intervention (Schäfer et al., 2023).

Interestingly, the SI group did not show a significant decline in depression or anxiety, but in PTSD scores at 6-months and in DSO scores at 3-months. However, this was in comparison with the RC group since we did not have an IPV exposed control group. Given that IPV often occurs over a prolonged period it is likely that women in the SI group experienced symptoms of cPTSD, including the classic symptoms of PTSD, from repeated and chronic trauma exposure (Hyland et al., 2017). cPTSD is a relatively new diagnosis and as such, research investigating what works to treat cPTSD is still limited, however, acceptance and commitment therapy, the treatment modality of SH+, has shown promise (Rowe-Johnson et al., 2025). ACT seeks to decrease avoidance of traumatic memories and encourage engagement and positive reintegration of distressing thoughts, potentially resulting in posttraumatic growth and an integrated sense of self beyond the trauma (Eilers et al., 2021). Similarly, cognitive processing elements of PM + are particularly useful in improving emotional regulation and problem solving (Polizzi and Lynn, 2021). cPTSD is also associated with higher comorbidity compared to other disorders and the transdiagnostic approach of SH+ and PM + may be particularly useful to treat elements of several disorders at once (Karatzias et al., 2019).

Attendance and retention in the RI and SI groups for SH+ were high, with the average number of sessions attended being above 4. Attendance remained high in the SI group for PM+, but dropped to just below 3 in the RI group. The difference in attendance is likely explained by the living situation of women in shelters i.e. they were all living together and logistical arrangements and encouragement from the shelter staff likely increased the odds of attending the sessions. It should also be noted that women expressed a need to connect with others who went through similar traumatic experiences. Providing psychoeducation and normalizing symptoms alone made a substantial difference, considering that rape and IPV are highly stigmatized traumas and not easily spoken about (Lomax and Meyrick, 2022).

PrEP uptake was surprisingly high in this study given that prior studies have shown that GBV-related stigma and symptoms of depression can be a significant barrier to PrEP uptake and adherence (Abrahams et al., 2010; Abrahams and Jewkes, 2010; Pillay et al., 2020; Stoner et al., 2021). However, studies also show that PrEP educational materials and promotion of PrEP by healthcare providers can significantly increase uptake and adherence and this was given specific consideration by the study nurse in this study (Joseph Davey et al., 2020; Pillay et al., 2020; Stoner et al., 2021). Being in control of risk for HIV infection seemed to be a particularly important motivator to take PrEP, especially in the rape exposed sample where women often felt a loss of control and predictability of the world following rape (Brooks et al., 2017).

This study has a few limitations. First, as a pilot and feasibility trial it was not primarily designed nor adequately powered to evaluate the effectiveness of the interventions. Since both interventions were delivered sequentially between the baseline and 3-month assessments, we were not able to determine the effects of SH + or PM + separately. A fully-powered randomized controlled trial could likely reveal additional significant effects which may have been missed in this study. In addition, assessing baseline mental health outcomes, followed by SH+, reassessment, PM+, reassessment, and follow-up assessment, is needed to determine the mental health effects associated with SH + alone, or SH+ with PM+, as stepped intervention. Second, being placed on a waitlisted control arm may in itself create anticipation of improvement in mental health, the possibility of which cannot be excluded in this study (Furukawa et al., 2014). Third, attendance of intervention sessions was high but given several financial barriers to attendance in LMICs, it is doubtful this would have been the case if participants were not reimbursed for their time and travel expenses. Forth, we did not include an SI control group and conclusions are based on comparison with the rape-exposed control group. We acknowledge that this may be problematic since non-partner rape is generally a single event, while intimate partner violence is ongoing and may have different mental health effects, however, given that this was a feasibility study and ingroup comparisons were also assessed, the findings are still meaningful. Fifth, the participants included in the study were treatment seeking survivors of rape and IPV. Given that the majority of women do not seek treatment, we cannot generalize the findings to non-treatment seeking women who have not disclosed the rape or IPV to care services.

Some strengths also deserve mention. First, we followed a rigorous adaptation and translation process to ensure that the intervention is applicable to the context. Second, participants were assessed at three timepoints allowing exploration of change in mental health outcomes

over time. Third, we included both quantitative and qualitative measures to assess feasibility, acceptability and potential impact.

Taken together, SH+ and PM + are low-intensity, and potentially low-cost, interventions that can be delivered by trained lay persons in group format in this context. They warrant further investigation of their effectiveness on mental health outcomes in survivors of rape and IPV. Delivery in group format seemed in fact to enhance the impact of these interventions through social support, normalization and psychoeducation. PrEP uptake was high, but due to small group sizes we could not assess the impact of depression, anxiety, PTSD and cPTSD on PrEP uptake and adherence.

CRediT authorship contribution statement

J. Nöthling: Writing – original draft, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **S. Willan:** Writing – review & editing, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **G. Gigaba:** Writing – review & editing, Supervision, Project administration, Methodology, Investigation, Data curation, Conceptualization. **E. Chirwa:** Writing – review & editing, Methodology, Formal analysis, Data curation. **S. Mhlongo:** Writing – review & editing, Methodology, Formal analysis, Data curation. **B. Myers:** Writing – review & editing, Methodology, Investigation, Conceptualization. **B. Spooner:** Writing – review & editing, Methodology, Investigation, Conceptualization. **S. Seedat:** Writing – review & editing, Methodology, Investigation, Conceptualization. **C. Garcia-Moreno:** Writing – review & editing, Methodology, Investigation, Conceptualization. **R. Jewkes:** Writing – review & editing, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization. **N. Abrahams:** Writing – review & editing, Writing – original draft, Supervision, Project administration, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Acknowledgements

We would like to thank all of the women who participated in the study and would like to acknowledge the following people for their contribution to the work: (1) Kenneth Carswell, Teresa Au and James Underhill from the WHO, who provided us with the intervention materials, guidelines and guidance on adapting and implementing the interventions; (2) Sinqobile Mngadi (SM), Mbalenhle Shabalala (MS), Sithabisile Gugulethu Gigaba (SGG), Thobeka Majola (TM), Mpumelelo Mabhinda (MM), Nwabisa Shai (NS) and Ntokozo Mntambo who translated the materials; (3) Pachomius Njolai who adapted the images used in the intervention; (4) Nokugcina Mhlope who narrated the translated audio materials and Colin Peddie who was the sound technician; (5) SM, MS, TM, MM and Zamakhoza Khoza for facilitated the interventions and collected the data; (6) SGG who supervised the intervention facilitators and supported participants in need of referral to specialized psychological support; (7) Tholsie Gounden who was the registered nurse providing HIV testing, counselling and dispensing of PrEP; (8) Prilene Stroud who provided administrative support; and (9) Kristin Dunkle, Leane Ramsoomar, Pinky Mahlangu, Mercilene Machisa, NS, Tirhani Manganyi and Yandisa Sikweyiya who formed part of the team of experts who reviewed the content of the interventions and contributed to the management and coordination of the study.The translation, field testing and publication of the findings was conducted with financial support from the South African Medical Research Council (SAMRC). The content hereof is the sole responsibility of the authors and does not necessarily represent the official views of the SAMRC.

References

Abrahams, N., Jewkes, R., 2010. Barriers to post exposure prophylaxis (PEP) completion after rape: a South African qualitative study. Cult. Health Sex. 12 (5), 471–484. https://doi.org/10.1080/13691050903556316.

Abrahams, N., Jewkes, R., Lombard, C., Mathews, S., Campbell, J., Meel, B., 2010. Impact of telephonic psycho-social support on adherence to post-exposure prophylaxis (PEP) after rape. AIDS Care 22 (10), 1173–1181. https://doi.org/10.1080/09540121003692185.

Abrahams, N., Mhlongo, S., Dunkle, K., Chirwa, E., Lombard, C., Seedat, S., Kengne, A.P., Myers, B., Peer, N., Garcia-Moreno, C., Jewkes, R., 2021. Increase in HIV incidence in women exposed to rape. AIDS 35 (4), 633–642. https://doi.org/10.1097/QAD.0000000000002779.

Bellot, A., Muñoz-Rivas, M.J., Botella, J., Montorio, I., 2024. Factors associated with revictimization in intimate partner violence: a systematic review and meta-analysis. Behav. Sci. 14 (2), 103. https://doi.org/10.3390/bs14020103.

Billingham, S.A., Whitehead, A.L., Julious, S.A., 2013. An Audit of Sample Sizes for Pilot and Feasibility Trials Being Undertaken in the United Kingdom Registered in the United Kingdom Clinical Research Network Database.

Braun, V., Clarke, V., 2006. Using thematic analysis in psychology. Qual. Res. Psychol. 3 (2), 77–101. https://doi.org/10.1191/1478088706qp063oa.

Brooks, M., Graham-Kevan, N., Lowe, M., Robinson, S., 2017. Rumination, event centrality, and perceived control as predictors of post-traumatic growth and distress: the Cognitive Growth and Stress model. Br. J. Clin. Psychol. 56 (3), 286–302. https://doi.org/10.1111/bjc.12138.

Cloitre, M., Shevlin, M., Brewin, C.R., Bisson, J.I., Roberts, N.P., Maercker, A., Karatzias, T., Hyland, P., 2018. The International Trauma Questionnaire: development of a self-report measure of ICD-11 PTSD and complex PTSD. Acta Psychiatr. Scand. 138 (6), 536–546. https://doi.org/10.1111/acps.12956.

Dawson, K.S., Bryant, R.A., Harper, M., Kuowei Tay, A., Rahman, A., Schafer, A., van Ommeren, M., 2015. Problem Management Plus (PM+): a WHO transdiagnostic psychological intervention for common mental health problems. World Psychiatry 14 (3), 354–357. https://doi.org/10.1002/wps.20255.

Department of Health, 2020. Guidelines for the Provision of Pre-exposure Prophylaxis (PrEP) to Persons at Substantial Risk of HIV Infection. Department of Health.

Dworkin, E.R., 2020. Risk for mental disorders associated with sexual assault: a meta-analysis. Trauma Violence Abuse 21 (5), 1011–1028. https://doi.org/10.1177/1524838018813198.

Eilers, R., Rimane, E., Vogel, A., Renneberg, B., Steil, R., Rosner, R., 2021. Response of young patients with probable ICD-11 complex PTSD to treatment with developmentally adapted cognitive processing therapy. Eur. J. Psychotraumatol. 12 (1), 1929024. https://doi.org/10.1080/20008198.2021.1929024.

Epping-Jordan, J.E., Harris, R., Brown, F.L., Carswell, K., Foley, C., García-Moreno, C., Kogan, C., van Ommeren, M., 2016. Self-Help Plus (SH+): a new WHO stress management package. World Psychiatry 15 (3), 295–296. https://doi.org/10.1002/wps.20355.

Furukawa, T.A., Noma, H., Caldwell, D.M., Honyashiki, M., Shinohara, K., Imai, H., Chen, P., Hunot, V., Churchill, R., 2014. Waiting list may be a nocebo condition in psychotherapy trials: a contribution from network meta-analysis. Acta Psychiatr. Scand. 130 (3), 181–192. https://doi.org/10.1111/acps.12275.

Hyland, P., Murphy, J., Shevlin, M., Vallières, F., McElroy, E., Elklit, A., Christoffersen, M., Cloitre, M., 2017. Variation in post-traumatic response: the role of trauma type in predicting ICD-11 PTSD and CPTSD symptoms. Soc. Psychiatr. Psychiatr. Epidemiol. 52 (6), 727–736. https://doi.org/10.1007/s00127-017-1350-8.

Jewkes, R., Sikweyiya, Y., Morrell, R., Dunkle, K., 2011. The relationship between intimate partner violence, rape and HIV amongst South African men: a cross-sectional study. PLoS One 6 (9), e24256. https://doi.org/10.1371/journal.pone.0024256.

Karatzias, T., Hyland, P., Bradley, A., Cloitre, M., Roberts, N.P., Bisson, J.I., Shevlin, M., 2019. Risk factors and comorbidity of ICD-11 PTSD and complex PTSD: findings from a trauma-exposed population based sample of adults in the United Kingdom. Depress. Anxiety 36 (9), 887–894. https://doi.org/10.1002/da.22934.

Karyotaki, E., Sijbrandij, M., Purgato, M., Acarturk, C., Lakin, D., Bailey, D., Peckham, E., Uygun, E., Tedeschi, F., Wancata, J., Augustinavicius, J., Carswell, K., Välimäki, M., Van Ommeren, M., Koesters, M., Popa, M., Leku, M.R., Anttila, M., Churchill, R., et al., 2023. Self-Help Plus for refugees and asylum seekers: an individual participant data meta-analysis. BMJ Mental Health 26 (1), e300672. https://doi.org/10.1136/bmjment-2023-300672.

Kessler, R.C., Aguilar-Gaxiola, S., Alonso, J., Benjet, C., Bromet, E.J., Cardoso, G., Degenhardt, L., De Girolamo, G., Dinolova, R.V., Ferry, F., Florescu, S., Gureje, O., Haro, J.M., Huang, Y., Karam, E.G., Kawakami, N., Lee, S., Lepine, J.-P., Levinson, D., et al., 2017. Trauma and PTSD in the WHO world mental health surveys. Eur. J. Psychotraumatol. 8 (Suppl. 5), 1353383. https://doi.org/10.1080/20008198.2017.1353383.

Lagdon, S., Armour, C., Stringer, M., 2014. Adult experience of mental health outcomes as a result of intimate partner violence victimisation: a systematic review. Eur. J. Psychotraumatol. 5 (1), 24794. https://doi.org/10.3402/ejpt.v5.24794.

Lomax, J., Meyrick, J., 2022. Systematic Review: effectiveness of psychosocial interventions on wellbeing outcomes for adolescent or adult victim/survivors of recent rape or sexual assault. J. Health Psychol. 27 (2), 305–331. https://doi.org/10.1177/1359105320950799.

Machisa, M., 2011. War at Home: Gender Based Violence Indicators Study : Gauteng Research Report.
Medicines Control Council, 2015. Medicines Control Council Approves Fixed-Dose Combination of Tenofovir Disoproxyl Fumarate and Emtricitabine for Pre-exposure Prophylaxis of HIV. Department of Health, South Africa.
Mwangala, P.N., Makandi, M., Kerubo, A., Nyongesa, M.K., Abubakar, A., 2024. A scoping review of the literature on the application and usefulness of the Problem Management Plus (PM+) intervention around the world. BJPsych Open 10 (3), e91. https://doi.org/10.1192/bjo.2024.55.
Nestgaard Rød, Å., Schmidt, C., 2021. Complex PTSD: what is the clinical utility of the diagnosis? Eur. J. Psychotraumatol. 12 (1), 2002028. https://doi.org/10.1080/20008198.2021.2002028.
Nöthling, J., Abrahams, N., Jewkes, R., Mhlongo, S., Lombard, C., Hemmings, S.M.J., Seedat, S., 2022. Risk and protective factors affecting the symptom trajectory of posttraumatic stress disorder post-rape. J. Affect. Disord. 309, 151–164. https://doi.org/10.1016/j.jad.2022.04.032.
Okwundu, C.I., Uthman, O.A., Okoromah, C.A., 2012. Antiretroviral pre-exposure prophylaxis (PrEP) for preventing HIV in high-risk individuals. Cochrane Database Syst. Rev. https://doi.org/10.1002/14651858.CD007189.pub3.
Park, S.-H., Yu, H.Y., 2021. How useful is the center for epidemiologic studies depression scale in screening for depression in adults? An updated systematic review and meta-analysis. Psychiatry Res. 302, 114037. https://doi.org/10.1016/j.psychres.2021.114037.
Pillay, D., Stankevitz, K., Lanham, M., Ridgeway, K., Murire, M., Briedenhann, E., Jenkins, S., Subedar, H., Hoke, T., Mullick, S., 2020. Factors influencing uptake, continuation, and discontinuation of oral PrEP among clients at sex worker and MSM facilities in South Africa. PLoS One 15 (4), e0228620. https://doi.org/10.1371/journal.pone.0228620.
Polizzi, C.P., Lynn, S.J., 2021. Regulating emotionality to manage adversity: a systematic review of the relation between emotion regulation and psychological resilience. Cognit. Ther. Res. 45 (4), 577–597. https://doi.org/10.1007/s10608-020-10186-1.
Purgato, M., Carswell, K., Tedeschi, F., Acarturk, C., Anttila, M., Au, T., Bajbouj, M., Baumgartner, J., Biondi, M., Churchill, R., Cuijpers, P., Koesters, M., Gastaldon, C., Ilkkursun, Z., Lantta, T., Nosè, M., Ostuzzi, G., Papola, D., Popa, M., et al., 2021. Effectiveness of self-help Plus in preventing mental disorders in refugees and asylum seekers in western europe: a multinational randomized controlled trial. Psychother. Psychosom. 90 (6), 403–414. https://doi.org/10.1159/000517504.
Radloff, L., 1977. The CES-D scale: a self-report depression scale for research in the general population. Appl. Psychol. Meas. 1 (3), 385–401. https://doi.org/10.1002/ardp.19552881111.
Rowe-Johnson, M.K., Browning, B., Scott, B., 2025. Effects of acceptance and commitment therapy on trauma-related symptoms: a systematic review and meta-analysis. Psychological Trauma: Theory, Research, Practice, and Policy 17 (3), 668–675. https://doi.org/10.1037/tra0001785.
Schäfer, S.K., Thomas, L.M., Lindner, S., Lieb, K., 2023. World Health Organization's low-intensity psychosocial interventions: a systematic review and meta-analysis of the effects of Problem Management Plus and Step-by-Step. World Psychiatry 22 (3), 449–462. https://doi.org/10.1002/wps.21129.
Spitzer, R.L., Kroenke, K., Williams, J.B.W., Löwe, B., 2006. A brief measure for assessing generalized anxiety disorder: the GAD-7. Arch. Intern. Med. 166 (10), 1092. https://doi.org/10.1001/archinte.166.10.1092.
Stoner, M.C.D., Rucinski, K.B., Giovenco, D., Gill, K., Morton, J.F., Bekker, L.-G., Celum, C.L., van der Straten, A., 2021. Trajectories of PrEP adherence among young women aged 16 to 25 in cape town, South Africa. AIDS Behav. 25 (7), 2046–2053. https://doi.org/10.1007/s10461-020-03134-3.
UNAIDS, 2023. Country factsheets, South Africa: HIV and AIDS estimates, 1. https://www.unaids.org/en/regionscountries/countries/southafrica.
Wainberg, M.L., Scorza, P., Shultz, J.M., Helpman, L., Mootz, J.J., Johnson, K.A., Neria, Y., Bradford, J.-M.E., Oquendo, M.A., Arbuckle, M.R., 2017. Challenges and opportunities in global mental health: a research-to-practice perspective. Curr. Psychiatry Rep. 19 (5), 28. https://doi.org/10.1007/s11920-017-0780-z.
Walker, H.E., Freud, J.S., Ellis, R.A., Fraine, S.M., Wilson, L.C., 2019. The prevalence of sexual revictimization: a meta-analytic review. Trauma Violence Abuse 20 (1), 67–80. https://doi.org/10.1177/1524838017692364.
White, S.J., Sin, J., Sweeney, A., Salisbury, T., Wahlich, C., Montesinos Guevara, C.M., Gillard, S., Brett, E., Allwright, L., Iqbal, N., Khan, A., Perot, C., Marks, J., Mantovani, N., 2024. Global prevalence and mental health outcomes of intimate partner violence among women: a systematic review and meta-analysis. Trauma Violence Abuse 25 (1), 494–511. https://doi.org/10.1177/15248380231155529.