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A Mixed-Method Study Protocol for Group-Adapted Somatic Experiencing Intervention in Indonesian Women Survivors of Sexual Assault with PTSD Symptoms

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ABSTRACT

Background: Sexual assault affects 35.6% of women globally, and in Indonesia, one in three women aged 15-64 has experienced physical and/or sexual assault, often leading to Post-Traumatic Stress Disorder (PTSD) and related symptoms. Standard PTSD treatments face cultural and resource limitations in Indonesia, highlighting the need for a culturally adapted intervention. Somatic Experiencing (SE), a body-focused therapy aimed at modifying physiological and emotional responses to trauma, has shown promise in reducing PTSD symptoms globally, though its effectiveness in Indonesia remains under-researched.

Methods: This study uses a mixed-methods approach across three phases: (1) Development, adapting and validating a group-based SE intervention for cultural relevance among Indonesian women survivors of sexual assault; (2) Feasibility, conducting pilot testing to assess acceptability and accessibility; and (3) Effectiveness, evaluating the intervention's impact through a parallel randomized controlled trial (RCT). The intervention includes structured group activities in ten SE-based modules, aimed at improving PTSD symptoms, resilience, and quality of life. Participants are assessed at multiple points using standardized measures (PCL-5, CD-RISC-25, WHOQOL-BREF), and data are analyzed with SPSS version 22.0 for quantitative analysis and thematic coding for qualitative insights.

Discussion: This study aims to establish a culturally adapted SE intervention for Indonesian women survivors of sexual assault, assessing feasibility and effectiveness. It represents the first cultural adaptation of SE for this population in Indonesia, with the potential to enhance PTSD symptom reduction, resilience, and quality of life.

Trial Registration Number: 1357/UN6.KEP/EC/2023

Keywords: sexual assault, PTSD, culturally adapted psychotherapy, somatic experiencing

Background

Globally, approximately 35.6% of women experience sexual assault (García-Moreno et al., n.d.). In Indonesia, 1 in 3 women aged 15-64 have reported physical and/or sexual assault during their lifetime, either by a partner or a non-partner (Badan Pusat Statistik, 2017). Additionally, results from an online survey conducted by Lentera Sintas Indonesia in 2016 showed that 46.7% of 25,213 participants reported experiencing sexual assault in various forms. According to Komnas Perempuan's annual report in 2021, Komnas Perempuan recorded 955 cases of sexual assault occurring in neighborhoods and public spaces throughout 2020.

Sexual assault refers to any sexual act or attempt to obtain sexual acts through assault or coercion, which, according to the WHO, includes various situations such as rape by an intimate partner, rape by strangers, and other forms of sexual assault (World Health Organization, 2012). Sexual assault is the trauma with the highest risk of developing Post Traumatic Stress Disorder (PTSD), as indicated by epidemiological studies (Kessler et al., 1995). According to Levine, trauma is an experience that triggers the activation of stress and defense mechanisms in the body and mind (P. Levine, 1998).

Women survivors of sexual assault often experience hyperarousal, constriction, dissociation, denial, and immobility accompanied by feelings of helplessness. Post-traumatic stress symptoms are regarded as expressions of stress activation and incomplete defensive reactions to traumatic events (Shershun, 2021). If unresolved, these symptoms can lead to a range of personal and social challenges, including bodily effects like hypothalamic-pituitary-adrenal (HPA) dysregulation and PTSD symptoms. Psychological effects can manifest as interpersonal trauma, demoralization, and betrayal trauma. Cognitive effects may include anxiety and detachment, while behavioral effects often involve increased healthcare use, sleep difficulties, and self-blame. Physical impacts such as somatization, emotional effects like persistent dread, and social consequences, particularly stigma, further compound the struggles faced by survivors (Sharma & Jacquin, 2022).

Recent literature shows an increase in the number of women seeking legal, medical, and psychological support for sexual trauma (Baert et al., 2021); however, many survivors with PTSD still face inadequate care and barriers to treatment access, often resulting in poor compliance (Bach et al., 2021; Ackerman, n.d.). Evidence-based therapies like EMDR, CBT, and trauma-informed PE have been shown to reduce PTSD

symptoms, but dropout rates can reach 18% due to challenges in tolerating trauma exposure and autonomic dysregulation (Watts et al., 2013; Lewis et al., 2020; Corrigan & Hull, 2015). In addition, despite receiving training in exposure-focused therapies, some practitioners are cautious with exposure therapies to avoid re-traumatization, especially as traumatic memories are often stored non-verbally, which complicates verbal recall and cognitive-based approaches (Baker et al., 2018). Impairments in cognitive function due to trauma may also limit the effectiveness of these therapies, and aggressive treatment processes often remain incomplete (van der Kolk, 1994).

Kaminer and Eagle note that while PE and CBT reduce PTSD symptoms, significant symptoms often remain post-treatment. Treatment guidelines, such as the ISTSS Expert Consensus for Complex PTSD in Adults, recommend approaches that emphasize stabilization and skill-building, especially emotional regulation (Kaminer & Eagle, 2017). In Indonesia, counseling is predominantly conducted by psychologists using cognitive and exposure methods. However, with an average education level of SMA and an intermediate intellectual level of 78.49 (borderline) (Wisevoter, 2023), integrating additional approaches may improve outcomes. Cognitive interventions are challenging as they require cognitive skills to recognize and alter intrusive thoughts, which can be difficult for survivors of sexual assault who often struggle to verbalize traumatic experiences (Ayudia, 2023). Limited resources further complicate intervention success; Indonesia, with nearly 260 million people, has only about 2,500 clinical psychologists and 600-800 psychiatrists. This translates to roughly one psychologist or psychiatrist per 300,000-400,000 patients, significantly below WHO recommendations (Ayudia, 2023). Consequently, patients receive fewer intervention sessions—research suggests an average of 12 sessions is necessary (Bryant et al., 2017). As a result, less effort is put into conducting the Intervention. Due to financial and personal considerations, this often results in reduced commitment to completing interventions.

Sexual assault survivors often develop PTSD due to incomplete stress activation and defensive responses to trauma. During such events, the Autonomic Nervous System (ANS) enters an emergency alarm state, sometimes resulting in a "freeze" response along the parasympathetic dorsal pathway, which is a primitive protective mechanism. This freeze response temporarily protects but causes unexpressed energy to accumulate in the body, contributing to chronic stress and trauma, and ultimately leading to a loss of

self-regulation capacity. This loss complicates PTSD recovery, as it suggests that traditional "top-down" interventions—commonly used in cognitive and behavioral therapies—may be less effective for women survivors of sexual violence (Van Der Kolk, 1994). Top-down methods require cognitive processing, including managing thought patterns, communication, and decision-making. However, evidence shows these approaches can leave significant symptoms unresolved, especially when intellectual capacity, language skills, and commitment to multiple sessions are factors (Corrigan & Hull, 2015; Kilmer et al., 2014a).

Recent techniques in PTSD treatment increasingly focus on physical sensations to alter physiological reactions and emotional processing in a "bottom-up" approach rather than the traditional "top-down" cognitive methods. Somatic Experiencing (SE®), a PTSD intervention developed by Levine (1998), exemplifies this bottom-up strategy as a short-term, flexible, and body-centered psychobiological therapy. SE® specifically targets the autonomic nervous system (ANS) to release the energy stored during traumatic events, reintegrating functions across the central and peripheral nervous systems. By refocusing the body's response to stress and trauma on internal sensations (such as in the musculoskeletal and internal organ systems), SE® aims to re-establish the body's self-regulatory capacity (P. A. Levine, 2010; Neslihan, 2021)

In cases of sexual assault, SE® modulates interoceptive and proprioceptive responses tied to trauma, helping survivors maintain their physiological stability, remain within their window of tolerance, and avoid extreme states of hypo- or hyper-arousal (Kuhfuß et al., 2021). This approach supports intrinsic resilience and lessens the effects of trauma through a resilience-focused method that works with survivors' innate capacities, ultimately improving both mental and physical health. By helping individuals better manage and reduce the impact of stress, SE® has been found to lessen trauma symptoms, enhance neuroendocrine processes, and lead to higher overall quality of life and functioning, particularly in those demonstrating increased resilience (Winblad et al., 2018; Mejia-Lancheros et al., 2021). While SE® has shown efficacy in individual therapy, research on its use in group therapy settings remains limited, especially in non-Western populations. This study addresses these gaps by adapting SE® specifically for Indonesian survivors of sexual assault, considering unique cultural and social factors to enhance group therapy outcomes.

While Somatic Experiencing (SE) is traditionally used in individual therapy, adapting it for group settings offers unique benefits, including social support, normalization of trauma experiences, and potentially expanded access for those with limited resources. A recent meta-analysis of 11 studies, comparing group and individual therapy across 329 cases, found group therapy to be effective for PTSD treatment (Rosendahl Jenny et al., 2021). Group therapy also helps normalize trauma symptoms and provides essential social support, which aids in self-regulation (Cook & Gold, 2017; P. A. Levine, 2010). Social support can reduce loneliness and alleviate post-traumatic stress for survivors (Kilmer et al., 2014b). In this research, an adapted, group-based SE intervention will focus on attuning participants to their autonomic nervous system responses, facilitated by psychologists who monitor both individual and collective nervous system regulation within the group (Wald et al., 2010). In Indonesia, where mental health resources are scarce, this group approach could expand survivor access and foster a supportive community.

The intervention also considers Indonesia's collectivist cultural values and high-context communication, aligning with local customs and societal norms to meet the distinct needs of Indonesian women survivors. This study aims to assess the feasibility and effectiveness of a culturally tailored, group-based SE intervention for Indonesian women survivors of sexual assault, incorporating culturally relevant adaptations and testing guidelines to ensure minimized cultural bias. We hypothesize that this intervention will reduce PTSD symptoms, improve resilience, and enhance quality of life for participants, providing an accessible, evidence-based approach that respects Indonesia's cultural context.

Methods

The present study uses a mixed-methods approach, consisting of (i) Study 1: quantitative and qualitative methods to support a group-adapted Somatic Experiencing intervention, (ii) Study 2: a mixed-methods design focusing on testing whether a group-adapted Somatic Experiencing intervention is feasible and accessible for the target population, and (iii) a randomized control design to examine the effectiveness of the group Somatic Experiencing-based intervention.

A group-adapted Somatic Experiencing-based intervention will be developed for Indonesian women (Study 1). Once the program is developed, it will be tested for feasibility through a pilot study (Study 2). If proven feasible and accessible, the intervention will be evaluated using a parallel randomized controlled trial to assess its effectiveness (Study 3).

1. Study 1: Development

    1) The development of a group Adapted Somatic Experiencing-Based Intervention uses a mixed-methods approach with a cross-sectional research design. The researcher will establish operational groups and parameters based on the Generalized Model approach by (McKenzie et al., 2013). The five main stages of this approach are: (1) Needs Assessment; (2) Setting Goals and Objectives; (3) Developing the Intervention Design; (4) Pilot Testing the Intervention Design; and (5) Evaluation of the Pilot Test. Further details on the pilot testing of the intervention design and its evaluation will be provided in Study 2.

        i) Need assessment

        Conducting a needs assessment: The researcher conducted interviews with psychologists in Indonesia who have experience in dealing with sexual violence, in order to identify priority issues and challenges in addressing sexual violence.

        There will be three categories of interviews. First, an initial interview will aim to understand (1) the characteristics of psychologists needed in handling sexual trauma and violence cases; (2) the forms of sexual assault; and (3) the problems reported. During the main interview, participants will be asked a series of questions related to handling sexual trauma and violence cases. The questions will cover various topics, including what experiences and situations will commonly occur in violence cases, and how to build rapport with clients. Other questions will include the average number of sessions needed to treat sexual trauma and violence cases, the complaints (physical and psychological) that will be reported by clients, what skills need to be taught to clients, and what methods will be used to

teach these skills. The interview will also explore indicators that will signal when an intervention session can be terminated, factors that will prevent clients from completing a series of interventions, and the profile and competencies of psychologists who will handle trauma and sexual assault cases. Additionally, the interview will seek to determine the average age of clients experiencing sexual assault, as well as any difficulties or obstacles that will usually arise when handling these cases.

ii) Setting goal and objective: The researcher engaged in discussions with Somatic Experiencing practitioners and researchers to establish clear goals. This process helped classify the focus and direction of the intervention design implementation. The setting of these goals guided the researcher in formulating specific objectives to be achieved through the Group Adapted Somatic Experiencing program. The objectives involved determining the target participants (women with varying degrees of post-traumatic stress disorder following sexual violence) and the desired outcomes, which included reducing PTSD symptoms and improving resilience and quality of life as a result of the intervention implementation

iii) Developing the intervention design: This stage focuses on developing the design of the Group Adapted Somatic Experiencing intervention, which is divided into the following components:

    a) Formation and preparation of the group: Based on discussions, the focus includes: (1) group therapy goals; (2) type and composition of the group; (3) selection criteria for participants; (4) pre-screening for safety considerations related to PTSD severity, trauma-stress-related disorders, suicidal attempts, substance use disorders, and psychotic disorders.

    b) Informational meeting for prospective participants: (1) Prospective participants are provided an opportunity to discuss the benefits and drawbacks of participating in the Group Adapted Somatic Experiencing program, as well as their rights, confidentiality policies, time commitment, and the structure and duration of the group during the

informational session; (2) Consent forms must be signed before the intervention begins.

c) Establishment of operational guidelines for the group intervention process: These guidelines, derived from discussions, focus on: (1) the roles and qualifications of group facilitators; (2) the role of the lead therapist; (3) the role of the co-therapist.

d) Development of safety protocols for both individuals and the group.

e) Determination of group activities related to Somatic Experiencing, which include: (1) psychoeducation; (2) physical involvement & proprioceptive body awareness; (3) group dynamics; (4) Somatic Experiencing components (resourcing, titration, tracking, stabilization); (5) Sensation, Image, Behavior, Affect, Meaning (SIBAM); (6) group exercises; (7) safety & boundaries; (8) activation release; (9) restoring balance & closure.

f) Creation of module structure including the title, content/activities, purpose, objectives, skills taught, homework, and necessary equipment.

g) Review and revisions of the module structure: After the module structure is completed, it will be reviewed by Somatic Experiencing Practitioners who specialize in sexual violence cases and Somatic Experiencing Researchers. The researcher will make necessary revisions based on the feedback.

h) Translation into Indonesian: Once revisions are made, the researcher will translate the module structure into Indonesian.

iv) Cultural validity assessment: The translated module will undergo a cultural validity assessment conducted by Indonesian psychologists experienced in sexual violence cases, along with the researcher (LA). Cultural validity will be evaluated for the Group Adapted Somatic Experiencing-Based Intervention using the Cultural Relevance Questionnaire (CRQ) (Salamanca-Sanabria et al., 2018).

v) Afterward, they will attend an information session with the researcher (LA) to further explain the study and collect consent documents from the

respondents. Respondents will then review the intervention and complete the CRQ after reviewing all the modules of the Group Adapted Somatic Experiencing-Based Intervention.

vi) Invitation to participate: Invitations will be sent via email or WhatsApp to clinical psychologists who meet the respondent criteria.

vii) Access and review: After signing the consent documents with the research team, they will receive access to the forms and review the Group Adapted Somatic Experiencing-Based Intervention.

2) Participant Development Study

i) Indonesian psychologists with experience in interventions for women who have experienced sexual violence and suffer from PTSD

ii) Somatic Experiencing Practitioners specializing in sexual violence cases and or group cases

iii) Researchers from the Somatic Experiencing Institute who have conducted research using Somatic Experiencing interventions.

3) Sampling technique: The sampling technique used in this study is purposive sampling (non-probability sampling), selected based on predetermined criteria.

4) Eligibility criteria:

a) Psychologists:

Inclusion Criteria: (1) Licensed psychologists holding a SIPP (Surat Izin Praktik Psikologi) or SIPPK (Surat Izin Praktik Psikologi Klinis); (b) Experience completing intervention sessions with women who are survivors of sexual violence.

b) Somatic Experiencing Practitioners:

Inclusion Criteria: (1) Expertise in handling cases of sexual violence; (2) Experience in dealing with sexual violence cases.

c) Researchers from the Somatic Experiencing Institute:

Inclusion Criteria: (1) Experience designing interventions using the Somatic Experiencing approach for individuals or groups; (2) Previous experience in conducting research involving Somatic Experiencing interventions.

5) Sample size:

   i. Indonesian Psychologists: 2 participants

   ii. Somatic Experiencing Practitioners: 4 participants

   iii. Researchers from the Somatic Experiencing Institute**:** 2 participants

   There is no minimum required number of experts needed to review the adaptation of interventions (Moore, 2021), and the sample size is based on the availability of experts within the context of this study.

6) Measures

   Cultural Relevance Questionnaire (CRQ) is a tool designed to assess the cultural appropriateness and relevance of an intervention in a specific cultural context. The CRQ would help ensure that the intervention is culturally sensitive and resonates with the participants' cultural backgrounds, values, and experiences (Salamanca-Sanabria et al., 2018).Cultural sensitivity will be determined through the 'top -down' revisions performed by the clinician-researcher (LA) and translation and customization

7) Planned analysis

   a) Descriptive statistics will be reported for the quantitative questions on the CRQ. Data collected from the five open-ended questions and the session-specific open-ended questions will be analyzed qualitatively (Dey, 2003).

   b) Feedback will be categorized based on functional, conceptual, and linguistic equivalence. This information will be color-coded to indicate positive and negative comments, as well as suggestions for program improvement. Additionally, new categories that may emerge from the data will be considered (Helms, 2015).

   c) The results collected from experts and users will be incorporated into the Culturally Adapted Somatic Experiencing-Based Intervention.

8) Research Location and Timeframe

   The research will be conducted online. The study will take place from March 2024 to April 2024.

2. Study 2: Feasibility (Randomized pilot study)

The implementation of A group somatic experiencing intervention and its evaluation among women survivors of sexual violence.

1) Sample size: A priori power analysis for the *t*-test was performed using G*Power Software, version 3.1 (Faul & Lang, 2009),setting α = 0.05, power (1-β err prob) = 0.8, and allocation ratio N1/N2 = 0.5 plus twenty percent to prepare number of drop out. A total sample of N = 50 (e.g, n = 33 subjects for the intervention group and n = 17 controls) was required to detect a medium effect size according to criteria (Jacob Cohen, 1998)
2) Participant: The population in this study were women over the age of 17 who experienced sexual assault with PTSD symptoms.
3) Eligibility criteria: Women survivors sexual assault will be selected on the following inclusion criteria: (1) women aged 17 years and above; (2) mild to moderately severe posttraumatic stress disorder symptoms (PCL-5 score > 31); (3) the disorder was not caused by psychotropic substance assault, or other psychological conditions. Exclusion Criteria (1) currently in psychological treatment for PTSD on medication for less than 1; (2) Alcohol or drug misuse; (3) Previous diagnosis of an organic mental health disorder; (4) PTSD symptom preceding or coinciding with a diagnosed medical condition.
4) User recruitment: Recruitment brochures will be distributed on various social media (Instagram, twitter, WhatsApp group, line) and directly distributed recruitment brochures at psychology bureaus, hospitals, and foundations that deal with sexual assault to attract women who experience sexual assault with PTSD symptoms.

5) Procedure

   i. The implementation process began with a short lecture on somatic approaches and research to all research team members. The study is open for both who are already a patient in one of the participating centers and new patients. Both new, chronic, and recurrent PTSD patients are included, and for all participants, the current and potential participants, the inclusion criterion is a current DSM-5 diagnosis of PTSD.

ii. The potential participant will be invited to the first eligibility check by phone/Google Meet/bureau/clinic/hospital and asked for informed consent.

iii. In the session access for eligibility, potential participants received a written consent. Next, a trained clinical examiner conducted an assessment to verify PTSD symptoms (based on DSM-V TR) using SCID, followed by confirmation of a history of psychosis, brain disorder, suicidal tendencies, psychotropic substance use, comorbidity with psychiatry or traumatic situations. This was accessed with SCID (DSM-IV). Participants were excluded from the study if, during the study evaluation, any of the following conditions emerged: history of psychosis, brain disorder, presence of suicidal tendencies, use of psychotropic substances, comorbidity with psychiatry or complex traumatic situations characterised by prolonged situations of extreme stress. If potential participants meets the inclusion criteria and none of the exclusion criteria, the participants will be invited to the next step of baseline. Participants who do not meet the criteria will be advised to receive psychological Intervention at the PPA in each city.

iv. In the allocation & baseline session, the clinical examiner will continue with the baseline assessment. Participants were then asked to complete resilience (CD-RIS 25) and quality of life (BREFF-WHOQOL) questionnaires. At the end of the session, the trained clinical examiner will examine the end with grounding exercises to help calm the nervous system into social engagement.

v. The study coordinator will immediately assign participants who meet the criteria for the study to one of the two study groups based on a pre-determined list created before the start of the study. After that, participants will be randomised based on their measurement scores through Castor data management software (www.castored.com). Participants will be randomly assigned to either the intervention group or waitlist control group in a parallel allocation design. Using block randomization with a 2:1 ratio, participants will be allocated to the

active treatment or waitlist group. The time span between T0 and the first intervention session will be approximately 10 weeks.

vi. This list of participants of each group was only accessible after participants met the criteria, accessed by the research coordinator herself, to ensure all clinical examiners were blinded to group allocation and the randomization process was not contaminated. The clinical examiners are blinded, meaning that a clinical examiner is not aware of the condition to which participants are assigned. The coordinator researcher and therapists will not be blinded to group allocation.

vii. Participants assigned to the intervention group started ten sessions over four weeks with a duration of 90 minutes.

viii. Participants assigned to the waitlist group waited an equal period without any intervention.

ix. At the end of the session, both the intervention and waitlist groups met with a clinical examiner for the second assessment (T1), which involved the same PTSD symptoms (PCL-5), resilience (CD-RIS-25), and quality of life (WHOQOL-BREFF) questionnaires. The clinical examiner conducting the assessment was blinded to the group allocation of each participant, ensuring unbiased evaluation. Additionally, the individuals providing the intervention were different from those conducting the assessments to maintain objectivity and minimize any potential bias in the evaluation process.

x. The 3rd assessment (evaluation) (T2) was conducted weeks (1 month) after the 2nd assessment (evaluation) session.

xi. The last evaluation (T3) was conducted 12 weeks (3 months) after the 3rd evaluation session.

xii. At the beginning of each session, participants will be asked to reflect on the previous session and complete the Helpful Aspects of the Intervention (HAT) Form and Session Rating Scale (SRS) at the end of the session. Furthermore, after week 10, participants will complete the Satisfaction with the Treatment (SAT). There will be two steps involved

in the follow-up assessment. Initially, each participant will receive a personal invitation to complete the follow-up assessment. If a participant declines, they will be asked to explain why, and their response will be recorded. See Table 3. The schedule of enrollment, intervention, and assessments Study Effectiveness.

6) Randomization

Randomization will be handled through Castor data management software (www.castored.com) administered by a person independent of the researchers. Recruitment and retention flowchart based on CONSORT guidelines (Brom et al., 2017),(Schulz & Altman, 2010). See Fig. 1 Recruitment and retention flowchart.

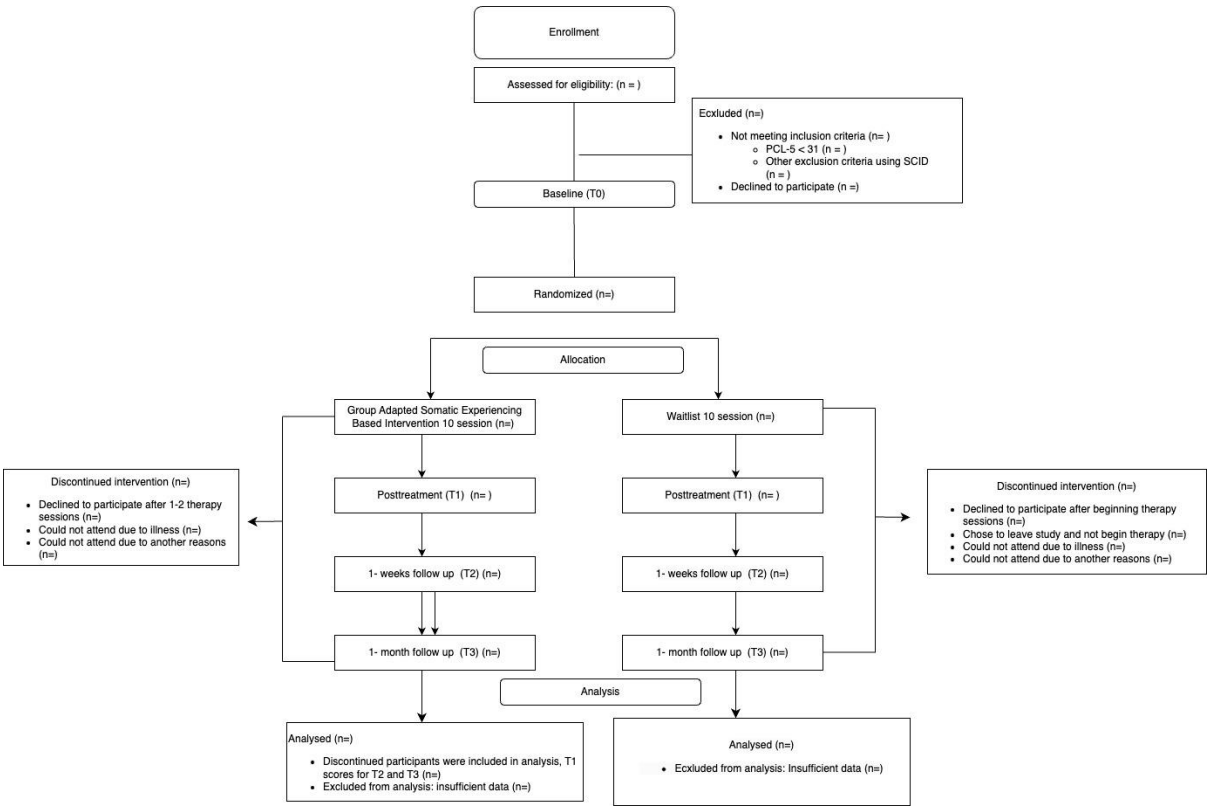

Figure. 1 Recruitment and retention flowchart

7) Measures

a) PCL-5 (of Veterans Affairs et al., n.d.).

The PCL-5 consists of 20 question points created by the VA National Center for PTSD. The participants used a scale of 0 to 4 ["*not at all* (0)" to "*extremely* (4)"] to score their symptoms of PTSD. Higher scores indicate more severe symptoms. The overall severity score is calculated by adding together all the items. The total score can vary from 0 to 80. Good psychometric qualities were demonstrated by the PCL-5 (Blevins et al., 2015). It has been established that the PCL-5 in Indonesian is a valid and trustworthy questionnaire. For the entire PCL-5 scale, the internal consistency coefficient, or Cronbach's alpha, was 0.93. For several subscales, Cronbach's alpha varied from 0.75 to 0.85 (G, 2015).

b) The Connor-Davidson Resilience Scale (CD-RISC-25) (Davidson, 2022).

   The Connor-Davidson Resilience Scale (CD-RISC-25) is a self-administered scale comprising 25 items. The CD-RISC 25 is designed to assess resilience. Higher scores indicate individuals have high resilience. Each item is rated on a 5-point scale ranging from not true or zero to true most of the time or four. The Indonesian version of the CD-RIS-25 has proven to be a valid and reliable questionnaire. Internal consistency coefficient (Cronbach's alpha). Content validity results obtained I-CVI of 0.75 to 1 and S-CVI/Ave of 0.96. Convergent validity obtained a value of $r = 0.539$; $p < 0.001$. The Cronbach's Alpha value for internal consistency reliability was 0.917. Test-retest reliability showed an intraclass correlation of 0.732, and most statements had an r value > 0.3 (Almasyhur & Nasrun, 2021).

c) World Health Organization Quality of Life (WHOQOL)-BREF (WHO, 2004). The WHOQOL-BREF was developed to provide quality assessment. This questionnaire consists of a total of 26 questions based on four domain structures: physical health, psychological, social relationships, and environment. The domain scores are ranked from 1 = not at all, 2 = not much, 3 = moderately, 4 = a great lot, and 5 = entirely) on a positive scale. Poorer scores indicate poorer levels of

quality of life. The results are converted into a linear scale between 0 and 100. Appropriate psychometric qualities Between 0.41 and 0.77 were the range of Cronbach's alpha for the various subscales (Ch Salim et al., 2007).

d) Sociodemographic Data

Demographic data will consist of background variables such as age, marital status, education level, occupation, and other relevant data obtained from the client's medical records.

e) Structured Clinical Interview Disorder (SCID) (First et al., 2015)

The SCID is a well-respected structured clinical interview used to diagnose all DSM-5 Axis I disorders, including PTSD. We have been using SCID-5 in Bahasa Indonesian (Arjadi et al., 2018). During screening, we used three modules from the Indonesian version of the SCID-5 (Arjadi et al., 2018). The Modules on Substance Use Disorders, Psychotic and Associated Symptoms, and Trauma and Stressor-Related Disorders.

8) Assessment

The pilot feasibility participants will be assessed at baseline, post-treatment. Participants will be assessed at baseline through Posttraumatic Stress Disorder Symptoms (PCL-5), Resiliency (CD-RIS-25), and Quality of Life (WHOQOL-BREF-25). Participants will be asked to reflect on their previous session at the beginning of each session. Participants will complete the Helpful Aspects of Treatment Form (HAT) and Session Rating Scale (SRS) at the end of each session. PCL-5, CD-RIS-25, and WHOQoL-BREF-25 will be completed at week four. In addition, Satisfaction with Treatment (SAT) will be administered at week 1.

9) Intervention A group-adapted Somatic Experience based Intervention

This Intervention consists of ten modules with ten sessions of A group Adapted Somatic Experience-based Intervention (table 2. A Group Adapted Somatic Experienced Based Intervention).

10) Planned analysis: feasibilities and Pilot study

All data will be prepared and reviewed in SPSS.

(1) This study will use a superiority framework to evaluate whether the group-adapted Somatic Experiencing intervention demonstrates greater effectiveness compared to waitlist controls in reducing PTSD symptoms and enhancing resilience

(2) Descriptive statistics will be used to analyze sociodemographic variables (e.g., gender, age, education, work, marital status, trauma type). Chi-squared and t-tests will be used to test for differences in demographic and clinical characteristics within groups. Effects will be tested at the 0.05 level.

(3) We also constrasted the baseline clinical and demographic traits of clients who did not drop out with those who did at T1,T2, and T3. We used logistic regression analysis to evaluate dropout at T1,T2, and T3 based on the characteristics and treatments given in the experiments.

(4) To assess significant changes over time, ANOVA tests will be used to assess PTSD symptoms (PCL-5), resilience (CD-RIS-25), and quality of life (WHOQOL-BREFF-25).

(5) Analyses will be conducted on participants who have clinically significant changes at the end of the Intervention. Assessment will be conducted using pre-intervention scores, and these will be compared to post-intervention scores on PTSD symptom scores (PCL-5), resilience (CD-RIS-25), and quality of life (WHOQOL-BREFF-25). The analysis will be based on the Jacobson & Truax method, where reliable change equals the difference between pre-test and post-test, divided by the standard error of the difference (Jacobson & Truax, 1991).

(6) Participants' responses in the HAT, identifying helpful and unhelpful events in therapy and their impact, will be analyzed qualitatively (Dey, n.d.). Initially, individual units of text will be analyzed and identified from context. Next, these units of meaning will be organized into helpful and unhelpful events and their impact. Finally, these will be grouped into categories, which will be given appropriate names and definitions.

(7) Descriptive analysis will be used to analyze the quantitative data from the SRS, SAT and their qualitative responses analyzed using thematic analysis.

3. Study 3: Effectiveness trial

The implementation of the group adapted program and its evaluation among women survivors sexual assault using a parallel randomized controlled trial methodology.

1) Sample size: Sample size: A priori power analysis for the *t*-test was performed using G*Power Software, version 3.1 (Faul & Lang, 2009),setting α = 0.05, power (1-β err prob) = 0.8, and allocation ratio N1/N2 = 0.5 plus twenty percent to prepare number of drop out. A total sample of N = 50 (i.e., n = 33 subjects for the intervention group and n = 17 controls) was required to detect a medium effect size according to criteria (Jacob Cohen, 1998)
2) Participant: The population in this study were women over the age of 17 who experienced sexual assault with PTSD symptoms.
3) Eligibility criteria: Women survivors sexual assault will be selected on the following inclusion criteria: (1) women aged 17 years and above; (2) mild to moderately severe posttraumatic stress disorder symptoms (PCL-5 score > 31); (3) the disorder was not caused by psychotropic substance assault, or other psychological conditions. Exclusion Criteria (1) currently in psychological treatment for PTSD on medication for less than 1; (2) Alcohol or drug misuse; (3) Previous diagnosis of an organic mental health disorder; (4) PTSD symptom preceding or coinciding with a diagnosed medical condition.
4) User recruitment: Recruitment brochures will be distributed on various social media (Instagram, twitter, WhatsApp group, line) and directly distributed recruitment brochures at psychology bureaus, hospitals, and foundations that deal with sexual assault to attract women who experience sexual assault with PTSD symptoms.
5) Procedures:

(1) Recruitment brochures will be distributed on various social media (Instagram, Twitter, WhatsApp group, line) and directly distributed

recruitment brochures at psychology bureaus, hospitals, and foundations that deal with sexual assault in Bandung area.

(2) The implementation process began with a short lecture on somatic approaches and research to all research team members. The study is open for both who are already a patient in one of the participating centers and new patients. Both new, chronic, and recurrent PTSD patients are included, and for all participants, the current and potential participants, the inclusion criterion is a current DSM-5 diagnosis of PTSD.

(3) The potential participant will be invited to the first eligibility check by phone/ Google Meet/bureau/clinic/hospital and asked for informed consent.

(4) In the session access for eligibility, potential participants received a written consent. Next, a trained clinical examiner conducted an assessment to verify PTSD symptoms (based on DSM-V TR) using SCID, followed by confirmation of a history of psychosis, brain disorder, suicidal tendencies, psychotropic substance use, comorbidity with psychiatry or traumatic situations. This was accessed with SCID (DSM-IV). Participants were excluded from the study if, during the study evaluation, any of the following conditions emerged: history of psychosis, brain disorder, presence of suicidal tendencies, use of psychotropic substances, comorbidity with psychiatry or complex traumatic situations characterized by prolonged situations of extreme stress. If potential participants meets the inclusion criteria and none of the exclusion criteria, the participants will be invited to the next step of baseline. Participants who do not meet the criteria will be advised to receive psychological Intervention at the PPA in each city.

(5) In the allocation & baseline session, the clinical examiner will continue with the baseline assessment. Participants were then asked to complete resilience (CD-RIS 25) and quality of life (BREFF-WHOQOL) questionnaires. At the end of the session, the trained clinical examiner will examine the end with grounding exercises to help calm the nervous system into social engagement.

(6) The study coordinator will immediately assign participants who meet the criteria for the study to one of the two study groups based on a pre-

determined list created before the start of the study. After that, participants will be randomized based on their measurement scores through Castor data management software (www.castored.com). Participants will be allocated in a 2:1 using block randomisation into the active treatment group and the treatment as usual (TAU) group. The time span between T0 and the first intervention session will be approximately 10 week.

(7) This list of participants of each group was only accessible after participants met the criteria, accessed by the research coordinator herself, to ensure all clinical examiners were blinded to group allocation and the randomization process was not contaminated. The clinical examiners are blinded, meaning that a clinical examiner is not aware of the condition to which participants are assigned. The coordinator researcher and therapists will not be blinded to group allocation.

(8) Participants assigned to the intervention group started ten sessions over ten weeks with a duration of 90 minutes.

(9) Participants assigned to the waitlist group will wait an equal period of time without any intervention.

(10) At the end of the session, A group Adapted Somatic Experience Based Intervention and waitlist groups met with the clinical examiner for the 2nd assessment (evaluation) (T1) using the same questionnaires of PTSD symptoms (PCL-5), resilience (CD-RIS-25) and quality of life (WHOQOL-BREFF).

(11) The 3rd assessment (evaluation) (T2) was conducted 4 weeks (1 month) after the 2nd assessment (evaluation) session.

(12) The last evaluation (T3) was conducted 12 weeks (3 months) after the 3rd evaluation session.

(13) At the beginning of each session, participants will be asked to reflect on the previous session and complete the Helpful Aspects of the Intervention (HAT) Form and Session Rating Scale (SRS) at the end of the session. Furthermore, after week 10, participants will complete the Satisfaction with the Treatment (SAT). There will be two steps involved in the follow-up assessment. Initially, each participant will receive a personal invitation to complete the follow-up

assessment. If a participant declines, they will be asked to explain why, and their response will be recorded. See Table 3. The schedule of enrollment, intervention, and assessments Study Effectiveness.

6) Randomization

Randomization will be handled through Castor data management software (www.castored.com) administered by a person independent of the researchers. Recruitment and retention flowchart based on CONSORT guidelines (Brom et al., 2017),(Schulz & Altman, 2010). See Fig. 1 Recruitment and retention flowchart.

7) Measures

(1) PCL-5 (of Veterans Affairs et al., n.d.).

The PCL-5 consists of 20 question points created by the VA National Center for PTSD. The participants used a scale of 0 to 4 ["*not at all* (0)" to "*extremely* (4)"] to score their symptoms of PTSD. Higher scores indicate more severe symptoms. The overall severity score is calculated by adding together all the items. The total score can vary from 0 to 80. Good psychometric qualities were demonstrated by the PCL-5 (Blevins et al., 2015). It has been established that the PCL-5 in Indonesian is a valid and trustworthy questionnaire. For the entire PCL-5 scale, the internal consistency coefficient, or Cronbach's alpha, was 0.93. For several subscales, Cronbach's alpha varied from 0.75 to 0.85 (G, 2015).

(2) The Connor-Davidson Resilience Scale (CD-RISC-25) (Davidson, 2022).

The Connor-Davidson Resilience Scale (CD-RISC-25) is a self-administered scale comprising 25 items. The CD-RISC 25 is designed to assess resilience. Higher scores indicate individuals have high resilience. Each item is rated on a 5-point scale ranging from not true or zero to true most of the time or four. The Indonesian version of the CD-RIS-25 has proven to be a valid and reliable questionnaire. Internal consistency coefficient (Cronbach's alpha). Content validity results obtained I-CVI of 0.75 to 1 and S-CVI/Ave of 0.96. Convergent validity obtained a value of $r = 0.539$; $p < 0.001$. The Cronbach's Alpha value for internal consistency reliability was 0.917. Test-retest reliability showed an intraclass correlation of 0.732, and most statements had an r value > 0.3 (Almasyhur & Nasrun, 2021).

(3) World Health Organization Quality of Life (WHOQOL)-BREF (WHO, 2004).

The WHOQOL-BREF was developed to provide quality assessment. This questionnaire consists of a total of 26 questions based on four domain structures: physical health, psychological, social relationships, and environment.

The domain scores are ranked from 1 = not at all, 2 = not much, 3 = moderately, 4 = a great lot, and 5 = entirely) on a positive scale. Poorer scores indicate poorer levels of quality of life. The results are converted into a linear scale between 0 and 100. Appropriate psychometric qualities Between 0.41 and 0.77 were the range of Cronbach's alpha for the various subscales (Ch Salim et al., 2007)

(4) Sociodemographic Data

Demographic data will consist of background variables such as age, marital status, education level, occupation, and other relevant data obtained from the client's medical records.

(5) Structured Clinical Interview Disorder (SCID) (First et al., 2015)

The SCID is a well-respected structured clinical interview used to diagnose all DSM-5 Axis I disorders, including PTSD. We have been using SCID-5 in Bahasa Indonesian (Arjadi et al., 2018). During screening, we used three modules from the Indonesian version of the SCID-5 (Arjadi et al., 2018). The Modules on Substance Use Disorders, Psychotic and Associated Symptoms, and Trauma and Stressor-Related Disorders.

8) Assessment

The effectiveness of study participants will be assessed at baseline, post-treatment, and at 1-month follow-up. Participants will be assessed at baseline through Posttraumatic Stress Disorder Symptoms (PCL-5), Resiliency (CD-RIS-25), and Quality of life (WHOQOL-BREF-25). At the beginning of each session, participants will be asked to reflect on their previous session. PCL-5, CD-RIS-25, and WHOQOL-BREF-25 will be completed at week four and followed up (week 4 / 1 month).

9) Intervention A group Adapted Somatic Experience based Intervention

This Intervention consists of ten modules with ten sessions of A group Somatic Experience-based Intervention (table 2. A Group Adapted Somatic Experienced Based Intervention).

10) Planned Analysis: Study Effectiveness

All data will be prepared and reviewed in SPSS.

a) Descriptive statistics will analyze sociodemographic variables (e.g., gender, age, education, work, marital status, trauma type). Chi-squared and t-tests will be used to test for differences in demographic and clinical characteristics within groups. Effects will be tested at the 0.05 level.

b) We also contrasted the baseline clinical and demographic traits of patients who did not drop out with those who did at T1, T2, T3. We used logistic regression analysis to evaluate dropout at T1, T2, and T3 based on the characteristics and treatments given in the experiment.

c) To assess significant changes over time, ANOVA tests will be used to assess PTSD symptoms (PCL-5), resilience (CD-RIS-25), and quality of life (WHOQOL-BREFF-25). The magnitude of the effect within and between the two groups will be determined by Cohen's d statistic (Field, 2009). This will determine the magnitude of the impact. As small effect ($d \geq 0.2$), medium effect ($d \geq 0.5$) and significant effect ($d \geq 0.8$) (Cohen, n.d.).

d) Analyses will be conducted on participants with clinically significant changes at the end of the Intervention and follow-up. Assessment will be conducted using pre-intervention scores, and these will be compared to post-intervention scores and follow-up scores on PTSD symptom scores (PCL-5), resilience (CD-RIS-25), and quality of life (WHOQOL-BREFF-25). The analysis will be based on the Jacobson & Truax method, where reliable change equals the difference between pre-test and post-test, divided by the standard error of the difference (Jacobson & Truax, 1991).

e) We analyzed the effect of A group Adapted Somatic Experience Based Intervention vs *waitlist* on symptoms of PTSD, Resiliency, and quality of life using the linear mixed model in R, with a random effects model. We include time, condition (A Group Adapted Somatic Experiencing Based Intervention vs waitlist), and time by condition. In all analyses, a treatment x time interaction term represented the effect of A Group Adapted Somatic Experience-based Based Intervention vs waitlist on the outcome variables over time. These

outcomes included the measurements of PTSD (PCL-5), resilience (CD-RIS-25), and quality of life (WHOQOL-BREFF-25)

f) We use a post-hoc test by applying Bonferroni correction to correct for multiple tests within our trial. Intention to treat (ITT) analysis was conducted using the data of all randomized participants, with missing data imputed using the regression method for participants who did not complete the T2 and/ or the T3.

Discussion

Delivering A group adapted Somatic Experiencing Based Intervention in women survivors of sexual assault to reduce PTSD and increase Resiliency and quality of life may be an effective way to offer psychotherapy. Therefore, this study has been designed to evaluate the effectiveness of a group adapted somatic experience-based Intervention. A group adapted Somatic Experience Based Intervention will be evaluated and implemented in diverse settings (Bureau psychologist, PPA, and NGO specifically for women survivors of sexual assault).

Declarations

Ethics approval and consent to participate

This trial has obtained ethical approval from the Padjadjaran University committee under registration number 1357/UN6.KEP/EC/2023. Consent will be taken from each participant before the experiment's commencement.

Consent for publication

Consent will be taken along with consent for publication

Availability of data and materials

None declared

Competing Interests

The authors declared no conflict of interest.

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Authors' Contributions

Ligina Ayudia had a role in conceptualization, methodology, software, validation, formal analysis, investigation, resources, data curation, original draft preparation, visualization, and project administration. Aulia Iskandarsyah had a role in conceptualization, draft review and editing, supervision, and funding acquisition. Lastly, Annemarie Samuels had a role in draft review and editing, along with supervision.

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Table 2. A group Adapted Somatic Experiencing Based Intervention

No	Module Title	Content /Activities	Intention	Target Issues	Skill Taught	Homework	Supplies
1	Arriving (welcome)	• Meeting and group cohesion • Arriving the place to adapt to environment • Arriving into themselves and finding resources to adapt in here and now • Determining group rules and purpose	• Have participant Share why they are here. • Intention setting • grounding	• Safety/Trust • Grounding • Self-Expression	• Group sharing • Learning to make agreements with each other • Working collectively	Read card name of sensation & emotion	• Board • White board
2	Physical Engagement Propioceptive body awareness 1	• Resourcing: Grounding & Centering • Finding resources in to adapt in here and now	• Deepening connection, cohesion, trust	• Collective resilience amidst challenges, coping, surviving • Building positive personal	• Resourcing • Reflecting and sharing		•

3	Physical Engagement Propioceptive body awareness 2	• Describing and tracking sensation • Felt sense • Reflection Tracking Activation	• Deepening connection, cohesion, trust	• Introduction of tracking/paying attention to the body	• Felt Sense • Tracking		• Aromatherapy • Card name of sensation & emotion
4	Psychoeducation: Nervous system, PTSD,Resilience, Somatic experiencing, overview	• Resourcing: Grounding (sensing inside & outside) • Understanding what is trauma • Understanding trauma symptom • Understanding How do we know if we are safe?	Teach about nervous system, PTSD, resilience, and Somatic Experiencing	Regulation/dis-regulation Orienting Understanding and self-awareness	How to track the treat response cycle and complete it		SE skill visuals SE PowerPoint
5	Safety & Boundaries.	• Resourcing: Grounding • Psychoeducation type of boundaries • String Boundary • Projecting voice • Yes, No, and Maybe Body Map • Reflection	Explore and understand embodied safety Collectively define the different types of safety and boundaries in different parts of life	promoting a sense of internal & external safety, and recognize and respect their own and others' physical space.	Experience of personal space Experience of tracking where personal boundaries are Boundary setting	Read card name of shame. Fawning, aggression, resentment	SE skill visuals SE PowerPoint
6	Pendulation & containment	• Pendulation & containment	To help participants develop the ability to oscillate between	by providing tools to manage , contain emotional	learn to consciously shift their attention between areas of	Read card name of shame. Fawning,	

		• Stabilization: pelvic breath	states of stress and relaxation, enhancing their capacity to manage emotional responses and foster resilience.	overwhelm, and enhancing the mind-body connection.	tension and relaxation in the body, Skills to create a sense of safety and containment within oneself, and calm the nervous system	aggression, resentment	
7	Tracking	• Resourcing • Psychoeducation (shame, fawning, aggression, resentment) • The body's wisdom exercises • stabilization • Reflection	learn the language of inner bodily experiences & sense what parts of the body have too much or not enough energy and begin to create conduits for stuck energy to flow.	• Felt Sense • Tracking • Resourcing • Reflecting and sharing	• Felt Sense • Tracking • How to listen emotion		Ball
8	Discharging activation one	• Resourcing: Hearth centered breathing • Natural aggression vs violence (shifting the anger whoosh) • Shame & guilt (somatically exploring shame,	Create new channels for this compressed and collapsed energy to complete its movement and course action	• Accomplish, self-agency • Build strength and resilience	• Felt Sense • Tracking •		

		sending back the shame)					
9	Discharging activation	• work with the basic survival responses, • Build strength and resilience • Uncoupling fear • Reflection	Create new channels for this compressed and collapsed energy to complete its movement and course action	• Accomplish, • Build strength and resilience	• Felt Sense • Tracking	Belly breaths Soothing touch	
10	Returning to equilibrium & Appreciation Post Test	• Orientation: Moving from Internal to External Environment and Social Engagement • Settle into body • Identify learnings from the past weeks • Mark what has changed over past 8 weeks • Farewell		Completion Strong and healty ending	Reflection sharing		SE skill visuals SE PowerPoint

Table 3. The schedule of enrollment, intervention, and assessments Study Effectiveness.[40]

							STUDY PERIOD								
TIMEPOINT	Enrollment		Allocation And Baseline	Intervention Weekly									Follow-up		
	7 days		7 days	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	T1	T2	T3
Eligibility assessment																
Informed consent for eligibility assessment	X															
Sociodemographic	X															
SCID	X															
PCL-5	X												X	X	X	X
Informed consent For trial			X													
Randomization			X													
Interventions																
A Group Adapted Somatic Experiencing				X	X	X	X	X	X	X	X	X	X			

Waitlist			X	X	X	X	X	X	X	X	X	X			
Assessments															
Traumatic history Interview		X													
CD-RIS-25		X											X	X	X
WHOQoL-BREF		X											X	X	X

SCID (Structured Clinical Interview for the DSM-5); TAU (Treatment As Usual (Counselling with Cognitive approach)); PCL-5 (Posttraumatic Stress Disorder Checklist for DSM-5Checklist); CD-RIS-25 (The Connor-Davidson Resilience Scale); WHOQoL-BREF (The brief version of World Health Organization Quality of Life); HAT (Helpful Aspects of therapy form); SAT (Satisfaction Aspects of therapy); SRS (Session Rating Scale)

*Note: HAT, Simple binary outcome, simple count ratio, and SRS forms are only given for feasibility (randomized pilot studies) in each session, and SAT in the final session intervention for two group intervention in feasibility (randomized pilot studies).

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References

Abbott, J. H. (2014). The Distinction between Randomized Clinical Trials (RCTs) and Preliminary Feasibility and Pilot Studies: What They Are and Are Not. In *Journal of Orthopaedic and Sports Physical Therapy* (Vol. 44, Issue 8, pp. 555–558). Movement Science Media. https://doi.org/10.2519/jospt.2014.0110

Ackerman, D. (n.d.). Sexual Assault Victims: Factors Associated With Follow-Up Care. *American Journal Of Obstetrics and Gynecology*, 1653.

Almasyhur, A. F., & Nasrun, M. W. (2021). Uji Validitas Instrumen Connor-Davidson Resilience Scale 25 (CD-RISC 25) versi Bahasa Indonesia The Validation Study of Connor-Davidson Resilience Scale 25 (CD-RISC 25) in Indonesia. *Unpublished Master's Thesis. Indonesian: University of Indonesia*.

Arjadi, R., Nauta, M. H., Scholte, W. F., Hollon, S. D., Chowdhary, N., Suryani, A. O., Uiterwaal, C. S. P. M., & Bockting, C. L. H. (2018). Internet-based behavioural activation with lay counsellor support versus online minimal psychoeducation without support for treatment of depression: a randomised controlled trial in Indonesia. *The Lancet Psychiatry*, *5*(9), 707–716. https://doi.org/10.1016/S2215-0366(18)30223-2

Ayudia, L. (2023). Psychological Intervention Approach and Structure In Women Survivors of Sexual Assault With PTSD Symptoms: A Qualitative Study Among Indonesian Psychologist. In *In press* (pp. 1–13).

Bach, M. H., Beck Hansen, N., Ahrens, C., Nielsen, C. R., Walshe, C., & Hansen, M. (2021). Underserved survivors of sexual assault: a systematic scoping review. In *European Journal of Psychotraumatology* (Vol. 12, Issue 1). Taylor and Francis Ltd. https://doi.org/10.1080/20008198.2021.1895516

Badan Pusat Statistik. (2017). Statistik Indonesia 2017. *CV. Dharmaputra*, 1–750.

Baert, S., Gilles, C., Van Belle, S., Bicanic, I., Roelens, K., & Keygnaert, I. (2021). Piloting sexual assault care centres in Belgium: who do they reach and what care is offered? *European Journal of Psychotraumatology*, *12*(1). https://doi.org/10.1080/20008198.2021.1935592

Baker, F. A., Metcalf, O., Varker, T., & O'Donnell, M. (2018). A systematic review of the efficacy of creative arts therapies in the treatment of adults with PTSD. *Psychological Trauma: Theory, Research, Practice, and Policy*, *10*(6), 643–651. https://doi.org/10.1037/tra0000353

Blevins, C. A., Weathers, F. W., Davis, M. T., Witte, T. K., & Domino, J. L. (2015). The Posttraumatic Stress Disorder Checklist for DSM-5 (PCL-5): Development and Initial Psychometric Evaluation. *Journal of Traumatic Stress*, *28*(6), 489–498. https://doi.org/10.1002/jts.22059

Brom, D., Stokar, Y., Lawi, C., Nuriel-Porat, V., Ziv, Y., Lerner, K., & Ross, G. (2017). Somatic Experiencing for Posttraumatic Stress Disorder: A Randomized Controlled Outcome Study. *Journal of Traumatic Stress*, *30*(3), 304–312. https://doi.org/10.1002/jts.22189

Bryant, R. A., Schafer, A., Dawson, K. S., Anjuri, D., Mulili, C., Ndogoni, L., Koyiet, P., Sijbrandij, M., Ulate, J., Harper Shehadeh, M., Hadzi-Pavlovic, D., & van Ommeren, M. (2017). Effectiveness of a brief behavioural intervention on psychological distress among women with a history of gender-based violence in urban Kenya: A randomised clinical trial. *PLoS Medicine*, *14*(8). https://doi.org/10.1371/journal.pmed.1002371

Ch Salim, O., Sudharma, N. I., Kusumaratna, R. K., & Hidayat, A. (2007). Validity and reliability of World Health Organization Quality of Life-BREF to assess the quality of life in the elderly. *Universa Medicina*.

Cohen, J. (n.d.). *Statistical Power Analysis for the Behavioral Sciences Second Edition*.

Cook, J. M., & Gold, S. N. (2017). Trauma-focused group therapy. In APA handbook of trauma psychology (Ed.), *American Psychology Association*. Trauma practice American Psychological Association.

Corrigan, F. M., & Hull, A. M. (2015). Neglect of the complex: why psychotherapy for post-traumatic clinical presentations is often ineffective. *BJPsych Bulletin*, *39*(2), 86–89. https://doi.org/10.1192/pb.bp.114.046995

Davidson, C. (2022). Connor-Davidson Resilience Scale (CD-RISC) © Manual. *Connor-Davidson Resilience Scale (CD- RISC) Manual. Unpublished. 01-01-22*, 1–245. https://doi.org/10.1016/j.jpsychires.2009.01.013

Dey, I. (n.d.). *Qualitative Data Analysis: A User-Friendly Guide for Social Scientists*.

Faul, A., & Lang. (2009). Statistical power analyses using G*Power 3.1: Tests for correlation and regression analyses. *Behavior Research Methods*, *41*(4), 1149–1160.

Field, A. P. (2009). Discovering statistics using SPSS : (and sex and drugs and rock "n" roll). *SAGE Publications Ltd*, 821.

First, M. B., Williams, J. B. W., Karg, R. S., & Spitzer, R. L. (2015). Structured Clinical Interview For DSM-5 ® DISORDERS SCID-5-RV (Research Version). *American Psychiatric Publishing*, 1–223. http://www.scid5.org

G, A. (2015). De Psychometrische Eigenschappen van de Indonesische Versie van de PTSD Checklist for DSM-5 (PCL-5-Ind) in Javaanse Populatie. *Unpublished Master's Thesis. Nijmegen: Radboud Universiteit Nijmegen*.

García-Moreno, C., World Health Organization, London School of Hygiene and Tropical Medicine, & South African Medical Research Council. (n.d.). *Global and regional estimates of violence against women : prevalence and health effects of intimate partner violence and non-partner sexual violence*.

Gay, L. R., & Diehl, P. L. (1992). Research Methods for Business and Management. *Macmillan Publishing Company*, 1–679.

Jacob Cohen. (1998). *Statistical Power Analysis for the Behavior Science* (Hillsdale NJ, Ed.; Second Edi). LAWRENCE ERLBAUM ASSOCIATES.

Jacobson, N. S., & Truax, P. (1991). *Clinical Significance: A Statistical Approach to Defining Meaningful Change in Psychotherapy Research* (Vol. 59, Issue 1).

Kaminer, D., & Eagle, G. T. (2017). Interventions for posttraumatic stress disorder: A review of the evidence base. In *South African Journal of Psychology* (Vol. 47, Issue 1, pp. 7–22). SAGE Publications Inc. https://doi.org/10.1177/0081246316646950

Kessler, R. C., Sonnega, A., Bromet, E., Hughes, M., & Nelson, C. B. (1995). Posttraumatic Stress Disorder in the National Comorbidity Survey. *Arch Gen Psychiatry*, *52*, 1–13.

Kilmer, R. P., Gil-Rivas, V., Griese, B., Hardy, S. J., Hafstad, G. S. ofie, & Alisic, E. (2014a). Posttraumatic growth in children and youth: clinical implications of an emerging research literature. In *The American journal of orthopsychiatry* (Vol. 84, Issue 5, pp. 506–518). https://doi.org/10.1037/ort0000016

Kilmer, R. P., Gil-Rivas, V., Griese, B., Hardy, S. J., Hafstad, G. S. ofie, & Alisic, E. (2014b). Posttraumatic growth in children and youth: clinical implications of an emerging research literature. In *The American journal of orthopsychiatry* (Vol. 84, Issue 5, pp. 506–518). https://doi.org/10.1037/ort0000016

Kuhfuß, M., Maldei, T., Hetmanek, A., & Baumann, N. (2021). Somatic experiencing–effectiveness and key factors of a body-oriented trauma therapy: a scoping literature review. *European Journal of Psychotraumatology*, *12*(1). https://doi.org/10.1080/20008198.2021.1929023

Levine, P. (1998). Waking the Tiger, Healing Trauma. In *Psychosomatic Medicine* (Vol. 60, Issue 2). https://doi.org/10.1097/00006842-199803000-00022

Levine, P. A. (2010). In an Unspoken Voice: How the Body Releases Trauma. *North Atlantic Books*, 1–373.

Lewis, C., Roberts, N. P., Gibson, S., & Bisson, J. I. (2020). Dropout from psychological therapies for post-traumatic stress disorder (PTSD) in adults: systematic review and meta-analysis. *European Journal of Psychotraumatology*, *11*(1). https://doi.org/10.1080/20008198.2019.1709709

McKenzie, J. F., State Hershey Brad Neiger, P. L., Thackeray, R., & Francisco Boston New York Cape Town Hong Kong London Madrid Mexico City Montreal Munich Paris Singapore Sydney Tokyo Toronto, S. (2013). Planning, Implementing, and Evaluating Health Promotion Programs A Primer S i x t h E d i t i o n. *PEARSON*, *6*.

Mejia-Lancheros, C., Woodhall-Melnik, J., Wang, R., Hwang, S. W., Stergiopoulos, V., & Durbin, A. (2021). Associations of resilience with quality of life levels in adults experiencing homelessness and mental illness: a longitudinal study. *Health and Quality of Life Outcomes*, *19*(1). https://doi.org/10.1186/s12955-021-01713-z

Neslihan, A. Ö. (2021). THE EFFECTIVENESS OF SOMATIC EXPERIENCE BASED STABILIZATION PROGRAM FOR REFUGEE WOMEN'S POST-TRAUMATIC STRESS, MINDFULNESS AND SOCIAL SUPPORT LEVEL. In *Psycho-Educational Research Reviews* | (Vol. 10, Issue 1).

of Veterans Affairs, D., Health Administration, V., Health Strategic Healthcare Group, M., & Center for Posttraumatic Stress Disorder, N. (n.d.). *PTSD Checklist for DSM-5 (PCL-5) - Fillable Form*. https://www.ptsd.va.gov/professional/

Rosendahl Jenny, Alldredge, C. T., Burlingame, G. M., & Strauss, B. (2021). Recents Developments in Group Psychotherapy Research. *The American Journal Of Psychotherapy*.

Salamanca-Sanabria, A., Richards, D., Timulak, L., Castro-Camacho, L., Mojica-Perilla, M., & Parra-Villa, Y. (2018). Assessing the efficacy of a culturally adapted cognitive behavioural internet-delivered treatment for depression: Protocol for a randomised controlled trial. *BMC Psychiatry*, *18*(1). https://doi.org/10.1186/s12888-018-1634-x

Schulz, K. F., & Altman, D. G. (2010). CONSORT-2010 Statement: Updated Guidlines For Reporting Parallel Group Randomised Trials. *BMC Medicine*.

Sharma, S., & Jacquin, K. (2022). Somatic Experiencing May Mitigate Retraumatization in Sexual Harassment Victims with PTSD during Litigation. *American College of Forensic Psychology*. https://doi.org/10.13140/RG.2.2.29810.58562

Shershun, E. (2021). Healing Sexual Trauma Workbook Somatic Skills to Help You Feel Safe in Your Body, Create Boundaries, and Live with Resilience. *New Harbinger Publications*.

van der Kolk, B. A. (1994). The body keeps the score: Memory and the evolving psychobiology of posttraumatic stress. *Harvard Review of Psychiatry*, *1*(5), 253–265. https://doi.org/10.3109/10673229409017088

Van Der Kolk, B. A. (1994). The Body Keeps the Score: Memory and the Evolving Psychobiology of Posttraumatic Stress. *Harvard Rev Psychiatry*, *1*, 253–265.

Wald, J., Taylor, S., Chiri, L. R., & Sica, C. (2010). Posttraumatic stress disorder and chronic pain arising from motor vehicle accidents: Efficacy of interoceptive exposure plus trauma-related exposure therapy. *Cognitive Behaviour Therapy*, *39*(2), 104–113. https://doi.org/10.1080/16506070903183570

Watts, B. V, Schnurr, P. P., Mayo, L., Young-Xu, Y., Weeks, W. B., & Friedman, M. J. (2013). Meta-analysis of the efficacy of treatments for posttraumatic stress disorder. *The Journal of Clinical Psychiatry*, *74*(6), e541-50. https://doi.org/10.4088/JCP.12r08225

WHO. (2004). *The World Health Organization Quality Of Life (WHOQOL)-BREF*.

Winblad, N. E., Changaris, M., & Stein, P. K. (2018). Effect of Somatic Experiencing resiliency-based trauma treatment training on quality of life and psychological health as potential markers of resilience in treating professionals. *Frontiers in Neuroscience*, *12*(FEB). https://doi.org/10.3389/fnins.2018.00070

Wisevoter. (2023). *Average IQ by Country*. Average IQ by Country.

World Health Organization. (2012). Understanding and Addressing Violence Against Women. *Pan American Health Organization*, 1–12.