Research

Peer Support Groups Integrated with Trauma-Sensitive Yoga for Women Survivors of Sexual Violence: A Feasibility Study and Qualitative Examination

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Abstract

Trauma Center Trauma-Sensitive Yoga (TCTSY) is an evidence-based yoga protocol and approach used for somatic trauma care. Seven women participated in a 12-week TCTSY-integrated peer support group for sexual violence survivors at a community rape crisis center. Three semi-structured interviews were conducted: interview 1 at 1–2 months post-group, interview 2 at 8–9 months post-group, and interview 3 at 24–33 months post-group. Thematic analysis was conducted following Clandinin and Connelly's three-dimensional space approach. Participants described themes related to improvements in trauma symptoms, mind-body connection, present-centered awareness, self-regulation, and relationships with self and others. Changes were sustained at the final interview. TCTSY-integrated peer support groups appeared feasible and acceptable to women victim-survivors of sexual violence. *Wehrmann et al. Int J Yoga Therapy 2024(34). doi: 10.17761/2024-D-23-00026.*

Keywords: yoga, adjunctive treatment, support groups, sexual abuse, qualitative methods

Abbreviations Used

PTSD= posttraumatic stress disorder

TCTSY= Trauma Center Trauma-Sensitive Yoga

Introduction

Approximately half of women in the United States have endured some form of sexual violence, with approximately one in four women having been raped in their lifetime.[1] More than a third of women victim-survivors of rape develop posttraumatic stress disorder (PTSD) within 6 months,[2] and survivors of sexual assaults and other interpersonal violence have the highest lifetime prevalence of developing PTSD among all directly experienced criterion A events ("exposure to actual or threatened death, serious injury, or sexual violence") listed in the *Diagnostic and Statistical Manual of Mental Disorders.*[3,4]

Neuroscience research has documented that PTSD can elicit chronic symptoms of hyperarousal and dissociation.[5] The psychophysiological effects of PTSD symptoms warrant the inclusion of opportunities to regulate the autonomic nervous system in interventions to promote optimal cognitive processing.[6] Although meta-analytic findings suggest a strong relationship between PTSD and somatic symptoms,[7] few PTSD treatments focus on somatic approaches[8]; nevertheless, studies included suggest a large effect size, with Cohen's *d* values > 1.[9] Given the need for improved interventions for sexual assault–related PTSD,[10] mixed results on whether treatments need to be specifically trauma-focused or bona fide to be effective,[11,12] and relatively high dropout in current cognitive approaches,[12] somatic treatments for posttraumatic stress symptoms are important to consider to increase the accessibility of healing options.

Trauma Treatment and Yoga

Growing evidence suggests that traumatic experiences, memories of the trauma, and posttraumatic stress symptoms are held in the body[7]; thus, somatic changes relate to mental state changes. For instance, traumatic experiences and posttraumatic stress symptoms have been linked with low levels of interoception, the ability to interpret and regulate signals from the body,[13] such as the connections among mind, body, emotions, and self-awareness.[14–16] Deficits in these areas are thought to coincide with challenges in the capacity for self-regulation and other psychological sequelae following trauma. Yoga is one approach that heightens mindfulness and interoceptive capacity, thus decreasing posttraumatic stress symptoms and increasing emotional awareness and regulation.[16–20]

Yoga is an ancient system of practices oriented to support individuals toward integration and harmony in mental, physical,and spiritual domains.[21,22] More than 36 million people are estimated to practice yoga in the United States, with numbers increasing.[23] One form of commonly practiced yoga is *hatha,* which emphasizes the way physical movement and awareness of movement can contribute to the cultivation of physical and mental health. Hatha yoga comprises particular sequences of physical movements and sustained positions *(asana),* breathing exercises that affect the nervous system *(pranayama),* and mindfulness practices *(dharana),* such as concentration (focused attention) and meditation *(dhyana),* which can be characterized by broad awareness or open monitoring.[21,22,24]

Systematic reviews and meta-analyses have deemed yoga to be effective in reducing mental health symptoms such as depression[25] and anxiety.[26] Yoga is increasingly being offered as a form of trauma care,[27–29] especially for survivors of sexual violence.[30–32] However, testing the effectiveness of yoga for posttraumatic stress symptoms has been difficult given the relatively small number of studies and relatively low rigor despite promising effect sizes (Cohen's *d* values of approximately 1.06).[33,34] The limited rigor and testability of studies examining whether yoga improves posttraumatic stress are due in part to non-systematic approaches to yoga intervention; that is, the field lacks clarity around how to offer yoga as a protocolized, adjunctive treatment for trauma survivors.

Trauma Center Trauma-Sensitive Yoga

Trauma Center Trauma-Sensitive Yoga (TCTSY) addresses these limitations of yoga in trauma research, with growing empirical support.[35,36] This protocolized yoga intervention approach provides a standardized framework and principles for offering trauma-sensitive yoga to trauma victim-survivors. Developed by the Center for Trauma and Embodiment at the Justice Resource Institute in Brookline, Massachusetts, TCTSY is an evidence-based, adjunct modality in clinical treatment for complex trauma and PTSD that can be offered as stand-alone sessions (i.e., yoga only) or integrated with mental health services (e.g., psychotherapy, peer support groups). TCTSY differs from typical Westernized yoga, as it follows a theoretical framework that includes trauma theory, contemporary neuroscience, and attachment theory.[35–37] TCTSY adapts the presentation and practice of hatha yoga to support participants with trauma histories to experience self-efficacy in relation to their embodied experiences. Yoga facilitators and mental health clinicians can be trained in TCTSY, indicating that this intervention may be an available resource across contexts.[37]

Foundational elements of TCTSY practice include foci on increasing the capacity for mindfulness, nonjudgmental awareness of the present moment and sensory experiences, interoception, decision-making, and taking effective action based on interoceptive awareness.[35–37] Modifications to typical Westernized yoga practices include

- omission and replacement of suggestive language that may be triggering to trauma survivors, such as by referencing anatomical muscle areas rather than using colloquial slang to describe body parts;
- elimination of hands-on assists;
- diminishing emphasis on physical posture intensity and its external form, instead emphasizing connection to internal states; and
- consistent presentation of options to foster choice and autonomy rather than conformity.

Research suggests that TCTSY is feasible and acceptable in community mental health settings for women victim-survivors of abuse.[38] Furthermore, a randomized clinical trial—the only National Institutes of Health–funded study on yoga for trauma to date—of women with complex PTSD demonstrated that a 10-week TCTSY practice was more efficacious in reducing PTSD symptoms than psychoeducation only,[39] with differential effects depending on baseline trauma.[40] Other trials of mindfulness-based interventions for PTSD (e.g., Mindfulness-Based Stress Reduction) have documented similar outcomes.[41] Although literature has suggested the importance of being attuned to one's body during treatment,[37] the aforementioned studies were conducted without a TCTSY facilitator present during the supportive psychotherapy group portion. To the authors' knowledge, no studies have examined the feasibility of integrating TCTSY facilitator support alongside a psychotherapist in a group setting, despite the potential for a TCTSY facilitator to support interoceptive experiences during group processing.

To the authors' knowledge, few qualitative studies on TCTSY exist. Two of these studies interviewed TCTSY facilitators at either a domestic violence services community provider or a community mental health agency serving co-occurring PTSD and substance use disorders.[42,43] Both studies discussed facilitators' perceived changes among TCTSY participants, although they did not interview the participants themselves. One qualitative study did interview participants, albeit at a single time point.[44] Nevertheless, the predominant theme found in the client-focused qualitative study was that TCTSY supported the process of claiming peaceful embodiment for healing.

The qualitative research on TCTSY provides in-depth information on facilitators' and participants' experiences, which is particularly helpful given the nascent literature on trauma-sensitive yoga. However, only one study to date has qualitatively examined TCTSY's perceived effects on participants,[44] with none employing longitudinal methodology. Having a more comprehensive understanding of participants' perceptions of their TCTSY practice and its long-term effects is imperative to better understand the role of trauma-sensitive yoga as an adjunctive treatment among women victim-survivors of sexual violence. Similarly, the literature about the impact of peer support groups for victim-survivors of sexual violence is limited. A systematic

review indicated that peer support groups have psychological and interpersonal benefits for participants, with notable effects because of the factor of shared victim-survivor identity among peers.[45] Therefore, documenting participants' perceived feasibility and acceptability of a TCTSY facilitator synchronously present with a group psychotherapist would also provide a different context to examine how trauma-sensitive yoga may serve as a complementary approach to trauma treatment (i.e., TCTSY-integrated peer support groups at a rape crisis center).

Research Questions

The present study employed narrative methodology by conducting TCTSY participant-focused, semi-structured interviews over time, with interview 1 at 1–2 months post-group, interview 2 at 9–11 months post-group, and interview 3 at 24–33 months post-group. We explored the experiences and perspectives of women who participated in TCTSY-integrated peer support groups as part of clinical treatment at a rape crisis center. The purpose of this study was to understand how participants characterized their experiences related to engagement *inside* the TCTSY practice (integrated into a peer support group), as well as the effect on trauma symptoms and the development of effective coping strategies *outside* the TCTSY support space over time. From these qualitative data, we hoped to determine the feasibility and acceptability of a peer support group for women sexual violence victim-survivors in which both a TCTSY facilitator and group psychotherapist were present. Beyond the qualitative reports, feasibility was also assessed by participant attendance and monitoring of adverse events. Thus, the investigation addressed the following questions:

1. How do women victim-survivors of sexual violence perceive their experiences inside the TCTSY-integrated peer support group space over time?
2. How do women victim-survivors of sexual violence perceive effects of TCTSY-integrated peer support on their lives outside the group over time?
3. How feasible and acceptable are TCTSY-integrated peer support groups over time for women who have experienced sexual violence?

Methods

Participants

Participants were recruited from TCTSY-integrated peer support groups conducted at an urban midwestern U.S. rape crisis center in 2016. Groups were open to any women-identifying adult victim-survivors of sexual violence. TCTSY-integrated peer support group members were self-referred or referred by therapists at the rape crisis center. Self-referred individuals reported learning about the group from the center's website or word of mouth. All group members were required to have completed or be currently completing individual psychotherapy treatment for PTSD, either with therapists from the rape crisis center who had various theoretical orientations (predominantly feminist person-centered, cognitive behavioral, acceptance and commitment) or with therapists in the local community. Individuals interested in the group were required to complete a mental health screener, which included a psychosocial assessment to diagnose mental health disorders; self-report screeners such as the Patient Checklist–5, Generalized Anxiety Disorder–7, and Dissociative Experiences Scale; and neuropsychological tests to assess language abilities, motor functioning, and cognitive patterns. Afterward, interested individuals met with both co-facilitators (group psychotherapist and TCTSY facilitator). If all parties agreed on the suitability of the group for the potential member's needs (e.g., coping skills, ability to engage in conversation), then the individual was invited to join the group. Individuals who endorsed recent suicidal ideation or psychiatric hospitalization, or for whom the group was deemed not useful at that point in time, were referred to psychotherapy or other support groups.

Of all possible group members contacted (n = 12; 5 in one group, 7 in another group), 10 consented to participate; 3 dropped out (2 with undisclosed reasons, 1 because of relocation), and 7 completed the interviews. This sample size represented slightly more than half of all group members. All participants had self-reported a current PTSD diagnosis at group intake. Five of the study participants reported that they joined the group because of an interest in learning body-based coping strategies for addressing PTSD symptoms; 4 participants had previously taken part in present-centered women's support groups at the agency and wished to continue in any available group at the agency; and 2 group members reported no concrete conceptualization of how a yoga support group may look. Participants identified as women (n = 7); 6 identified as White and 1 as Black. All reported having experienced sexual violence from 2–40 years before attending the group.

Every participant completed both the first and second follow-up interviews. Participation was voluntary, with no compensation provided; participants reported interest in using the interviews to reflect on their experiences and contribute to research. Participant names and identifying factors have been removed or anonymized. This study was approved by Saybrook University's institutional review board.

Materials

Interview questions (Supplement A) were developed based on the protocol of the qualitative study on women trauma victim-survivors' perceived healing and posttraumatic growth following TCTSY.[43] The original semi-structured interview guide was developed in consultation with content experts in phenomenological research, yoga, trauma-sensitive yoga, psychology, and mind-body medicine.[43] These questions were adapted to form the guide used for interview 1. The guide for interviews 2 and 3 was developed with consideration that participants would be able to see the narrative summaries of their responses to the preceding interviews. The guides were semi-

structured rather than structured, following episodic interview approaches.[46] Because interview questions across the timepoints were semi-structured, probing and follow-up questions were permitted as needed to ensure that the interviewer more fully understood the participants' responses and that questions had been clearly and thoroughly answered. Participants were asked all of the questions from each guide at corresponding interview timepoints.

Procedure

Participants completed TCTSY-integrated peer support groups for 12 consecutive weeks. Each 90-minute session was co-led by a licensed psychotherapist and a certified TCTSY facilitator. To titrate the yoga exposure, the yoga practice started at 10 minutes for the first session, then gradually increased to 20 minutes by the fourth week and to 45 minutes for the remainder of the group.

Each group yoga practice began by inviting participants to notice where their bodies were contacting the ground, either visually or kinesthetically, if that type of sensory information was available. Following TCTSY protocolized approaches, the group then proceeded to practice in seated (head-to-knee, butterfly, seated forward bend, seated spinal twist) and standing forms (mountain, warrior I, warrior II, side angle, triangle, chair, eagle, tree). In the sessions with extended duration, other yoga forms were introduced that began on knees and palms or supine (cat, cow, gate, child, bridge). Additional choices were always offered for participants who did not want to initiate movement from those forms. All sessions concluded with a period of 1–3 minutes, called "rest form," during which participants could choose what form(s) to be in and the facilitator paused speaking.

The adverse events protocol followed that of the crisis center, and TCTSY added additional body-based techniques for grounding. Participants had the option to talk about triggers during the yoga practice or afterward with the group and could choose to leave the practice setting at any time with the support of a co-facilitator. Group guidelines were co-created and followed. This TCTSY protocol can be referenced in published works[35–37] and requested via email to the corresponding author. See Table 1 for an overview of sessions.

Table 1. TCTSY-Integrated Peer Support Group Session Outline

Section	Description	Approximate Duration (min)
Set-up	Group members were invited to choose yoga mats, blankets, and chairs available at the crisis center for their practice. Members chose how to set up their practice spaces.	5
Check-in	Group members took turns lighting a candle and ringing chimes to signify the start of group. Each member had the option to share how they were feeling.	5–10
Psychoeducation	Information about (1) common trauma symptoms; (2) hyperarousal, hypoarousal, and self-regulation; and (3) potentially effective coping strategies was shared by the psychotherapist (sessions 1–4 only).	15–25
TCTSY	Embodied practice opportunities were offered by the TCTSY facilitator. Options for practicing movement and interoceptive awareness were presented. Participants were empowered to make choices that served them in the present moment. Forms were offered seated (head to knee, butterfly, seated forward bend, seated spinal twist), standing (mountain, warriors I and II, side angle, triangle, chair, eagle, and tree), and prone (cat, cow, gate, child, and bridge). At times, awareness of moving breath was offered as an option.	10–20 for sessions 1–4; 30–45 for sessions 5–12
Rest form	Group members chose how to rest their bodies (forms in motion or stillness) and eyes (open, half-closed, or closed) according to their preference. They were invited to adjust as they wanted. The TCTSY facilitator was silent at this time.	1–3
Closing of TCTSY	The TCTSY facilitator rang a bell to signify the end of rest form. Group members were invited to stretch and notice any changes in how they felt after the TCTSY practice. Option for participants to end their practice by placing hands over their hearts, bowing, and saying the word "peace" together.	1–2
Reflection	Participants were invited to reorient to the group and notice their surroundings. The psychotherapist opened discussion about the members' experiences during TCTSY and how the practice affected members' lives outside the group setting.	10–20
Conclusion	Group members could choose to share how they were feeling at the end of the session. The bell was rung and the candle extinguished. During the final session, members reflected on their experience of the series as a whole, and several group members decided to exchange contact information with one another.	5

TCTSY = Trauma Center Trauma-Sensitive Yoga.

Following the conclusion of the 12-week group, data were collected over the course of three interviews. The episodic interview,[46] which elicits in-depth narrative accounts of an individual's experience of a particular topic, was used as a method of inquiry in this study. All interviews were conducted by the lead author. Interview 1 was conducted 1–2 months post-group, interview 2 at 9–11 months post-group, and interview 3 at 24–33 months post-group. Interviews were approximately 90 minutes (maximum 120 min) and were conducted in person at the rape crisis center, audiorecorded, and transcribed verbatim.

Data Analysis

Thematic analyses were based on the three-dimensional space approach.[47] Grounded in the belief that experience is constructed of three primary elements, the three-dimensional space approach focuses on interaction, continuity, and situation in narrative analysis.[48,49] *Interaction* is defined as the dimension of human experience that is at once personal and social; *continuity* refers to the temporal dimension of human experience; and *situation* highlights the way experience unfolds in particular spatial locations. The three-dimensional space approach strives to illuminate internal (e.g., values, intentions, emotions, thoughts) and external (e.g., social, environmental contextual elements) aspects of participants' experiences that occur within the boundaries of time and space.[47,49] Interview questions aimed to elicit details of events and interactions in the external world as well as participants' subjective experiences of those events and interactions; this approach enabled us to reinterpret narratives that describe not only events in temporal sequence, but also the significance of those events to the participants.[49]

By focusing on the three dimensions foundational to verbal narrative construction, we rendered a second-order analysis.[50] This second-order analysis was organized according to common themes within the domains of the three-dimensional space approach (i.e., internal and external experience, time, and place), yet also aspired to honor the multi-layered nature of experiences. In a similar manner, we created first-order narratives as coherent, orienting structures to organize life events without oversimplification.[46] Categories of analysis were based on thematic domains outlined by the three-dimensional space approach.[47] Thematic analysis based on this approach used the analytical tools of condensation and categorization of meaning.[51] Meaning condensation included distillation of data into more succinct formulations to summarize the core of each respondent's experience and perspective. Meaning categorization was used to facilitate the classification of concepts and themes, enabling us to recognize patterns and organize the data into broader and more specific categories. These processes facilitated construction of a provisional coding frame, which illuminated emergent themes.[51,52]

Although particular components were highlighted in individual narratives, each narrative was considered as a unique, integrated whole.[53] Themes were tracked and organized via Microsoft Office Suite to prevent drifts in codes over time. Results include in vivo and condensed quotes. The lead author, trained in the three-dimensional space approach for coding, was the primary coder, alongside both academic (from Saybrook University) and clinical (from community site) consultants. The senior author (V. N.-F.) served as auditor to review data analysis. De-identified data are available upon reasonable request from qualified researchers and subject to approval from the community partner site.

Results

Research Question 1: How Do Women Victim-Survivors of Sexual Violence Perceive Their Experiences Inside the TCTSY-Integrated Peer Support Group Space over Time?

Three predominant themes emerged from qualitative analysis of participants' reported experiences inside the group space: (1) ability to make choices and take effective action; (2) trust in their internal compass; and (3) self-regulation in the moment. All of these themes mirror core TCTSY principles. Themes were present across timepoints: Interview 1 indicated gains primarily in the first theme, and interviews 2 and 3 indicated increased gains in the latter two themes.

Ability to Make Choices and Take Effective Action

Participants described how they approached making decisions and taking effective action based on awareness gleaned from their embodied experiences. Early on and consistently throughout the 12 weeks, all seven participants observed growth within the domain of being able to identify available options and make choices. They noted leaning into certain cues that provided a positive invitation to explore choice-making (e.g., "There's no right or wrong in relation to this choice. You're welcome to explore and see what is useful for you"). Participants clearly articulated noticing a change in behavior as a result of choice-making, such as articulated in this quote:

> *Fight, flight, or freeze . . . I freeze. Definitely, I recognize it, first of all. Before, I never even recognized it. I'd be talking with my therapist, and she'd say, "Did you feel like you could get up and walk away?" and I'd be like, "No! It never even crossed my mind that I could do that!" So, first, I became more aware of when I was feeling that, and then I began to make choices to change it. I think that was the biggest place that I saw a shift in me. That was a big difference for me, and that has made a huge impact on my life.*

Trust in Their Internal Compass

Participants reported many opportunities to attune to their preferences based on their embodied experiences during the TCTSY practice. Over time, each participant reported eventually

developing an internal sense of what was useful for them instead of prioritizing an external standard of judgment. All seven participants stated that their experiences in the group ultimately, by interview 3, enabled them to define their preferences and boundaries ("yes or no") with greater clarity and self-efficacy. Awareness that there was no objective standard regarding the correct or incorrect way to approach assessing options and determining a course of action during the yoga practice afforded participants the chance to identify their own subjective standards for making decisions. The absence of an external compass enabled the group members to attend to their internal compasses to weigh options, as exemplified by one participant's quote:

> *I didn't know if I was doing things right, but then I realized there was no "right" and there was no "wrong." Because there was no right or wrong, I could do the same movements in ways that felt good for me . . . it helped to know that no matter how I did it, it was okay.*

Self-Regulation in the Moment

All participants described how familiarity with specific body-based skills that supported self-regulation enabled them to influence their physical, mental, and emotional states during the group itself, with continual progress in the subsequent months. Participants reported learning self-regulatory skills that were helpful in the moment (e.g., breathing in slower, more intentional ways; performing a body scan to become more aware of how they were feeling in specific areas of their bodies, allowing them to subsequently make useful choices; and moving in ways that helped them to become more "grounded," "relaxed," "confident," and "present") throughout group and during the interviews. This shift in self-regulation is illustrated by this quote:

> *If I find myself in a situation where I can sense that I might be uncomfortable, where I might be triggered, I can take myself sometimes to a place where I'm like, "Okay, what is your heart rate doing, what are you feeling in your head, what are you feeling in your shoulders?" I start to take that inventory and it helps me calm down if I am starting to get upset.*

Research Question 2: How Did Victim-Survivors of Sexual Violence Perceive Effects of TCTSY-Integrated Peer Support on Their Lives Outside the Group over Time?

Four predominant themes emerged from qualitative analysis of participants' reported experiences outside the group space: (1) decreased distress; (2) increased distress tolerance; (3) increased interoceptive awareness; and (4) improved interpersonal relationships. Themes were present across timepoints: Interview 1 indicated gains primarily in the first theme, and interviews 2 and 3 indicated increased gains in the latter two themes.

Overall, participants reported retention of skills learned in group to maintain improvements in distress tolerance, interoception, and interpersonal relationships. Following the group's conclusion, two participants continued to practice yoga intermittently at all interview timepoints, whereas the remaining five stated that they did not maintain a yoga practice. However, all participants discussed ways in which they retained the ability to attend to their embodied experiences and make choices to take effective action in their daily lives. Awareness of this capacity appeared to wax and wane over time; nevertheless, even up to 33 months post-group, all participants reported prolonged post-TCTSY positive changes in the aforementioned thematic areas. In particular, all participants reported that the group continued to influence the way they related to themselves and others.

Decreased Distress

Participants often described the benefits of group on reducing their feelings of distress. Trauma symptoms reported by more than half of the participants during their pre-group screening included avoidance, emotional numbing, and difficulty dealing with intense emotions (n = 5); feeling distant or cut off from others, a pervasive sense of isolation (n = 5); dissociation or sense of disconnection between mind and body (n = 4); and chronic anxiety, hyperarousal, or hypervigilance (n = 4). At interview 1, respondents described shifts in their experiences of trauma symptoms. All participants discussed the following changes: (1) increased ability to self-regulate, (2) increased ability to sustain present-moment awareness and heightened ability to tolerate difficult emotions, (3) heightened body awareness and sense of mind-body connection, and (4) increased sense of agency and empowerment, even in everyday scenarios, as one participant noted:

> *Nobody really even notices that I'm doing that [stretching to relieve activation], but it helps me. It breaks that feeling of, "Oh, that person's too close, they're looking at me," or whatever . . . and if I'm in the grocery store, I can stretch way out and grab that melon and roll it over [laughs] . . . I use it in that way . . . It still works, you know?*

The group reportedly helped participants recognize emotional states and attend to them in useful ways to decrease distress. For all participants, the ability to self-regulate began with awareness and acceptance. By "letting go" of "fighting" with what was happening in the moment, participants were able to make skillful choices about how they interacted with their own emotional states. The phrase, "It is what it is," suggested by one participant, became a mantra for others. The image of ducks riding on waves, suggested by another participant, was a useful metaphor that helped others ride the waves of their internal, emotional sea. All commented on ways in which the group contributed to the development of self-regulation and decision-making skills across interview timepoints.

Increased Distress Tolerance

Participants also described diminished avoidance and increased tolerance for discomfort. All participants reported heightened levels of tolerance for challenging emotional states over the course of time. Avoidant coping strategies were gradually replaced by (1) awareness and acceptance of embodied experience on physical and emotional levels, (2) recognition that options were available, and (3) decision-making processes based on information provided by their embodied experiences. Participants' increased tolerance for emotional discomfort seemed to be supported by nonjudgmental acceptance of present-moment experience and a growing recognition that difficult emotional states would not last forever. These internally oriented strategies increased alongside interoceptive awareness.

Increased Interoceptive Awareness

Participants reported diverse types of disconnection between body and mind prior to joining the support group, including experiences of detachment from somatic experience, dissociation, numbness, and the sense that mental activity was separate from the domain of physical existence. All seven group members described ways in which their experiences in the TCTSY support group positively affected their sense of connection between body and mind. Participation in the support group helped them recognize and experience shifts in relation to (1) tendencies to disregard the importance of attending to their embodied sensations, and (2) obstacles to somatic awareness.

Over time, all participants reported developing keener awareness of embodied experiences that occurred during the yoga practice. The TCTSY practice, coupled with time devoted to self-reflection and sharing, enabled participants to affirm the legitimacy and value of their own experiences and perceptions. According to all participants, the consistent reminder that there was no "right" or "wrong" way to engage with the yoga practice gradually enabled them to attune to their own embodied experiences more consistently. Participants also reported experiencing increased feelings of agency and empowerment over interview timepoints in relation to how they engaged their bodies and minds to navigate challenges. More than half of participants articulated that these self-beliefs shifts stemmed from mind-body engagement as "I" statements at some point: "I am confident, and I trust myself" (n = 5); "I no longer feel that the trauma I experienced defines me as a person" (n = 3); "I am strong" (n = 4); and "I have choices" (n = 4). All responses to this question reflected ways in which the group embodiment experience restored participants' connection to personal strengths and integrity.

Furthermore, all participants reported a growing ability to pay attention to and be more accepting of their embodied experiences over time. Awareness of interoceptive experiences stimulated participants to be more cognizant of their emotions. As they became more attuned to their embodied experiences, over the interview course all participants recognized that physical and emotional aspects of experience are intimately connected. All respondents asserted that their experiences in the group enabled them to sustain higher levels of present-moment awareness. Enhanced ability to attune to embodied experience, physically and emotionally, enabled group members to attend to their needs and preferences with greater self-acceptance and kindness.

In relation to how they navigated their own changing emotional states, most of the participants described ways in which group participation was impactful: increased awareness of emotional experiences and the relationship between physical and emotional states (n = 7); increased ability to attune to emotions and subsequently assert boundaries (n = 7); increased acceptance of emotions, including heightened tolerance for discomfort associated with emotional experiences (n = 6); increased ability to use skills learned in the support group to self-regulate in relation to emotions (n = 6); decreased avoidance and emotional numbing (n = 4); and increased self-care in relation to emotions (n = 4). For all participants, externally defined standards regarding what one "should" feel or how one "should" move gradually became less figural through interview 3. As fewer attentional resources were devoted to making decisions based on a perceived external standard, self-defined viewpoints based on interoceptive experience became clearer. Group members were subsequently able to attend to what they actually felt in the moment in a fuller and more focused way, on both physical and emotional levels, such as exemplified by one participant:

> *I have a relationship with my body that was created in that group. And that's not going away. There's no way that that's going away. Whether I do yoga or not . . . I have an awareness and a relationship with my body, whereas before it was just this uncomfortable thing that I was wearing, that I did not like. It makes all the difference in quality of life, you know? It was like I was wearing this uncomfortable frame . . . it was an uncomfortable relationship that my self had with the body that it was living in. Now, it's like, "Well, what's going on, body?"*

Improved Interpersonal Relationships

As the TCTSY practice was integrated into a peer support group setting, all participants reported that the safe group context had a profoundly positive influence on the way they engaged with themselves intrapersonally and then interpersonally, particularly with an internally focused yoga practice. Each participant felt that establishing safety within the group enabled them to decrease distress, mainly in the areas of self-acceptance, empathy, and a sense of connection with themselves and each other. Awareness of the shared embodied experience of sexual violence diminished the pervasive sense of isolation, negative self-appraisal, and shame that they initially felt. A growing sense of safety within the group enabled participants to expand their sense of trust in themselves and vice versa. That is, the power of connection to self had ripple effects on healthy interpersonal relationships formed inside and outside the group. One participant's description of attending their perpetrator's sentencing trial embodies that experience:

I felt . . . personally empowered, and then also [empowered] by other people . . . I don't think I would have felt that way had I not been in the group. I felt like I had a million people in my corner. In reality, it was like six more people that I gained, but it felt like a million people backing me. It felt like a million people walking into that courtroom with me, it felt like a million people with me afterwards. I felt way more supported and purposeful and energized.

Although only two group members initially mentioned that the desire to decrease isolation was a specific source of motivation for joining the group, all respondents stated that sharing the support group experience with other survivors of sexual violence was vital to their mental health improvements. Participants discussed the importance of feeling validated and understood within the group context, which diminished the pervasive sense of isolation initially described by group members and fostered empathy, encouragement, and mutual understanding. By interview 3, more than half of the participants observed an increased ability to assert boundaries (n = 5) and a heightened sense of closeness and connection with others (n = 4). Practicing boundaries was an essential part of the yoga practice; participants felt inspired by one another as they observed how others reflected on their experiences and experimented with making choices during yoga, which also increased their awareness of options.

Research Question 3: How Feasible and Acceptable Are TCTSY-Integrated Peer Support Groups over Time for Women Who Have Experienced Sexual Violence?

Extracting and modifying approaches from prior preliminary studies,[20,38] feasibility was operationalized as having at least 50% of participants attend at least 50% of sessions, with limited adverse events and overall positive qualitative feedback. Based on these criteria, the TCTSY-integrated peer support group offered at this rape crisis center was feasible. All 12 planned group sessions were carried out. Five out of seven members attended all sessions of the group series, and the remaining two attended all but one session. No extreme adverse events occurred (one participant experienced an in-session flashback early on and was able to re-ground herself). Along with improved interpersonal relations, participants reported increased acceptability of the program, as seen through a growing sense of safety within the group, including with both the group therapist and the TCTSY facilitator present. For example, one participant shared:

After the yoga practice, I was more physically relaxed and more mentally relaxed, just much more centered. Because I felt that feeling of being centered, I think it made it easier for me to participate in the discussion, to actually open up and talk. And I think doing it the opposite way . . . if we had done the discussion and sharing portion and then did the yoga practice, I think that certain topics that had come up during the sharing portion would have probably distracted me from the yoga practice.

Within a safe relational context, each participant stated that they were more able to resonate with the idea of attending to their own embodied experiences rather than paying attention to externally defined standards. All participants appeared to appreciate the feasibility, acceptability, and usability of the group at all interview timepoints, as they acknowledged the beneficial aspects of being part of a group and feeling a sense of social connection while growing in the ability to discover their own unique ways of belonging. Ultimately, this shift of attentional focus—from perceived external judgments to a self-defined viewpoint—enabled group members to make choices based on an internal compass rather than on the perceived preferences of others, which mirrors core themes of TCTSY and exemplifies the feasibility of translating the TCTSY protocol into this setting.

Please see Table 2 for example participant quotes on core themes.

Table 2. Example Participant (n = 7) Quotes on Core Themes

Theme	Example Quotes[a]
Ability to make choices and take effective action	1. *It evolved each time to where I became more comfortable . . . and more secure, to the point where [I inwardly experienced] . . . "No! This is what I want to do. This is how I feel."* 2. *You don't always come in with the same type of feeling. It was very useful to be offered an option. When it was, "No," this week, it could have been, "Yes," the next week. Maybe I worked through it a little bit and felt a little more comfortable with [the sense that] nobody's really watching me. Nobody's really judging me . . . nobody's forcing me.*
Trust in their internal compass	1. *I didn't know if I was doing things right, but then I realized there was no "right" and there was no "wrong." Because there was no right or wrong, I could do the same movements in ways that felt good for me.* 2. *In the beginning . . . I didn't not have a choice [in relation to the yoga practice] . . . but at the end, I was conscious that I do have a choice.*

(continued on next page)

Table 2. *continued*

Theme	Example Quotes[a]
Self-regulation in the moment	1. *When you're mentally trying to stop what you're feeling, your stress level is rising, moving towards a [posttraumatic stress disorder] episode . . . it gets exhausting. Adding physical [movement] to what's already going on mentally is calming. It kind of flattens [the stress] out and makes it easier to make changes on a mental level. Being in the group brought what I was going through mentally . . . down to a physical [level], so it was more reachable to work on, instead of just totally going with the trigger and falling into an episode. It worked.* 2. *I think I gained a better understanding of the physical responses of my body, and that probably helped me to be able to counteract them as well. If you can isolate each one of the different reactions you're having, then you can address them, rather than having a giant ball of reactions . . . then you can't deal with them as easily.*
Increased distress tolerance and decreased distress	1. *I do feel like I have a little bit more control of my body . . . I'm not so afraid of it. Because even if I do feel bad, I know I can deal with it. It's not going to last forever; I can make choices about how I'm going to deal with it. It's not controlling me.* 2. *I felt more openness. And knowing that sometimes you can get through that uncomfortable feeling gives you a sense of . . . power.*
Increased interoceptive awareness	1. *I have a relationship with my body that was created in that group. And that's* not *going away. There's* no way *that that's going away. Whether I do yoga or not . . . I have an awareness and a relationship with my body, whereas before it was just this uncomfortable thing that I was wearing that I did not like. It makes all the difference in quality of life, you know?* 2. *Because I'm more in tune, more allowing. I'm allowing the world in. I have a right to be here, I have a right to take care of myself . . .*
Improved interpersonal relationships	1. *[B]eing in the group has made me more empathetic and less quick to judge. You can't tell by looking at someone what they're going through or what they're dealing with. So, I think I'm willing to give a little more grace in relationships and realize that people have good and bad days, and I might not know the whole story on something . . . so it just doesn't bother me like it used to.* 2. *It helped me in my personal interactions . . . listening, caring, being more respectful, that's probably the best way to explain it. Because I got that from six other people for 3 months straight, and that was very beneficial for me.*
Feasibility and acceptability	1. *You're in this room with other survivors of sexual abuse or trauma and you're all practicing yoga, but in a totally different way, where you get to decide, you get to find your own path. And throughout the weeks, you build a foundation for yourself and with the group, and you grow together and heal together.* 2. *Being in that setting where everyone was committed to the same thing made me trust myself. If they could trust themselves enough to be there . . . I found a lot of strength and power in that, which translated to trust for me. I felt respected by them, and so I felt like returning the favor.*

[a]The first and second quotes in each set reflect core themes in how participants perceived experiences within and outside the group space, respectively.

Discussion

Regarding the first research question examining how participants perceived their experiences inside the TCTSY-integrated peer support group space, participants reported the following observations during the course of the 12 weeks: (1) ability to make choices and take effective action; (2) trust in their internal compass; and (3) self-regulation in the moment. Regarding the second research question of how participants applied knowledge gained from the TCTSY-integrated peer support group to their lives outside the group space, participants reported the following effects that continually changed over the interview period: (1) increased distress tolerance and decreased distress; (2) increased interoceptive awareness; and (3) improved interpersonal relationships.

The participants shared examples of recognizing how physical awareness connected to emotional awareness, as well as how they opted to feel then regulate their emotions rather than continue avoidant coping strategies. There were also notable shared examples of participants practicing de-prioritization of perceived external judgments and increased self-trust, which fostered self-understanding. Core TCTSY principles were also described by participants, including increased ability to make choices and take effective action based on each participant's embodied experience and self-defined viewpoint. Participants also appreciated shared aspects of their personal experience, which diminished feelings of isolation. Overall, addressing the third and final research question, the TCTSY-integrated peer support group for victim-survivors of sexual violence (in which both group therapist and TCTSY facilitator were present) appeared feasible and acceptable for the rape crisis center and the participants in this study, as qualitative feedback was generally positive, completion rates were high, and no adverse events occurred.

These findings align with the two other TCTSY qualitative studies that focused on women victim-survivors of sexual violence, although slight differences emerged. The cross-sectional study suggested three themes.[44]

1. Supporting the process of claiming peaceful embodiment: new, present-oriented, positive embodied experiences; interoceptive exposure, desensitization, and taking effective action; and yoga as a tool to cope with stress and trauma triggers
2. New capacities enabled by claiming peaceful embodiment: practicing pausing and grounding responses; hope initiating change; priority and capacity for self-care; and capacity for emotional and physical intimacy
3. Facilitators and barriers

The present study themes were similar across domains, with the exception of a heightened sense of "peaceful" embodiment. Participants experienced greater self-acceptance and sense of connections between physical and emotional experience; however, sometimes this awareness, which manifested as diminished avoidant coping strategies, stimulated challenging emotional states that were not characterized as peaceful. The present study findings were fairly similar to descriptions by the providers (i.e., TCTSY facilitators, group psychotherapists) interviewed in the second TCTSY qualitative study.[40] Although not empirically compared, the fairly congruent perceptions of client change reported by participants and observed by providers are promising.

Our study examined participants' perceptions of a TCTSY-integrated support group at a rape crisis center. This design is novel in that it combined TCTSY and a peer support group co-facilitated by a TCTSY facilitator and psychotherapist. Separately, TCTSY[54] and peer support groups[45] have yielded improvements in PTSD symptoms for victim-survivors of sexual violence. Our findings support the integration of these two resources as a useful combination for victim-survivors of sexual violence to practice trauma-sensitive yoga and connect with peers to process their experiences. Creating a healing space where both a TCTSY facilitator and psychotherapist are present appears to increase the type of support available for victim-survivors, where embodiment techniques (to foster interoception, mindfulness, and self-regulation) and cognitive techniques (to foster processing and meaning-making) may be available to offer a whole-person approach to trauma care.

Limitations

Limitations are inherent in all qualitative research, and this study is no exception. As the sample size for this study was small and convenience sampling was used, findings are likely not generalizable to the entire population of women victim-survivors of sexual violence and may be representative only of the individual participants at this location. A much broader range of experiences is likely among women who participate in other support groups for sexual violence as opposed to those who were recruited from this midwestern urban rape crisis center. The majority of respondents were White women; future replications should extend the study invitation to a broader sample and collect more robust sociodemographics (e.g., sexual orientation, religion/spirituality) to document the intersectionality of identities and perspectives of participants and increase generalizability of TCTSY-integrated peer support groups beyond the present feasibility study. Although the participants were required to be in concurrent psychotherapy, details about the type or duration of concurrent therapy attended throughout the study were not documented and could have influenced results. Selection bias is also likely, as participants who had positive experiences in the group may have been more likely to be interested in contributing to the present research. However, most of the group members (10 out of 12) did consent to participate, with 7 members following through and 2 maintaining their own yoga practices. Furthermore, although the three-dimensional space approach focused on collecting vivid and complex narrative data from participants, other methods could have uncovered a different set of findings that, albeit equally valid, differ from the present interpretations. Lastly, this study did not assess the financial feasibility of creating a TCTSY-integrated peer support group, which is important given that centers may need to collaborate with TCTSY facilitators to offer this type of service and that such services may be unavailable to individuals who are under-resourced.

Research Implications

Importantly, the findings from the present study lay a foundation for further research on TCTSY-integrated peer support groups. We examined the perceived benefits of a women victim-survivor support group in which a TCTSY facilitator was present alongside a group therapist for the duration of group, which differs from the initial TCTSY feasibility study.[38] In the initial feasibility study, participants found TCTSY to be acceptable after the psychotherapy portion of the group led by a therapist alone. Research has not examined whether two providers together for the duration of the group session would be more effective than a group therapist alone; this examination would be helpful in determining whether client gains outweigh the time and financial costs of having a TCTSY facilitator present for the psychotherapy portion of the group. As this structure appeared beneficial to study participants, there may be utility in exploring options for collaboration among yoga facilitators, group therapists, and clients to develop treatment approaches that address each client's support needs.

Additional research is needed to assess the relative merits of TCTSY as a stand-alone practice or as individual sessions in comparison to the TCTSY-integrated support group format. Randomized controlled trials would be necessary to make strong between-group comparisons; moderator research may also provide insight into the relative merits of the TCTSY-integrated peer support group intervention for individuals with various identities (e.g., ability status, gender diverse), trauma type and timeframe, and the intersectionality among these factors.

Likewise, mixed-methods research designs could offer additional information about the usefulness of this support. Finally, research about the delivery format (e.g., online synchronous group) is warranted to increase accessibility of TCTSY-integrated support groups for rural participants or in locations that lack yoga facilitators.

Clinical Implications

The current study suggests that a TCTSY-integrated support group intervention can be beneficial as an adjunct modality in clinical treatment for women victim-survivors of sexual violence. TCTSY appeared well-integrated into the group space and complemented therapeutic goals. For instance, participants discussed psychotherapeutic goals of increasing self-acceptance of their present symptoms and coping strategies, as well as feeling connected in a group of similar victim-survivors. Most importantly, changes in self-acceptance, present-moment awareness, and connectedness associated with TCTSY appeared to occur in tandem with these psychotherapeutic goals and methods. Parallel to these changes, the cohesiveness formed in the psychotherapy space enabled the creation of a safe context in which participants were able to experiment with body-based methods of coping and determine what was useful for them during the TCTSY practice. If clinics do not find it feasible to have concurrent group therapists and TCTSY facilitators, components of this approach (e.g., regulation of attention and breath without movement, other TCTSY principles) can likely be translated into usual clinical practice.

Conclusions

Study findings indicated potential benefits of teaching TCTSY principles in clinical settings for women victim-survivors of sexual violence, in whom perceived effects occurred during and after the yoga practice. Specifically, participants generally reported reductions in trauma symptoms, increased sense of self and self-trust, heightened capacity for self-regulation, increased tolerance for present-centered awareness, enhanced connection between mind and body, and improved relationships with self and others. Clients described many of these effects even up to 33 months post-group. Overall, a TCTSY-integrated peer support group at a rape crisis center appeared quite feasible and acceptable to clients, demonstrating possible clinical utility of having a TCTSY facilitator continually present alongside a group therapist.

Positionality Statement

Mindful that our identities can influence our approach to science,[55] the authors wish to provide the reader with information about our backgrounds. When the manuscript was drafted, all authors self-identified as women, were Registered Yoga Teachers, and had completed 300-hour TCTSY facilitator training. R. W. identifies as White, Jewish, and bisexual. She is a survivor of childhood sexual abuse and grew up in the lands of the Lenape, Oneida, Ottawa, and Wyandot, also known as Cleveland, Ohio; K. M. D. identifies as White, heterosexual, and grew up in the lands of the Erie and Myaamiais, also known as Port Clinton, Ohio. K. M. D. is a graduate research assistant in the Mind-Body Trauma Care Lab; V. N.-F. identifies as Southeast Asian/Vietnamese American, bisexual, and a survivor of childhood sexual abuse. V. N.-F. grew up in the lands of the Piscataway and the Manahoac, also known as Alexandria, Virginia, and directs the Mind-Body Trauma Care Lab.

Citation Diversity Statement

Recent work in several fields of science has identified a bias in citation practices such that papers from women and additional minorities are under-cited relative to the number of such papers in the field.[56–58] Using available citation diversity templates, we sought to proactively consider choosing references that reflect the diversity of the field in thought, form of contribution, gender, and additional factors. We obtained predicted gender of the first and last author of each reference by using databases that store the probability of a name being carried by a woman.[58] By this measure (and excluding self-citations to the first and last authors' current paper), our references contain 39% woman (first)/woman (last), 11% man/woman, 9% woman/man, 41% man/man, and 2% unknown works. This method is limited in that names, pronouns, and social media profiles used to construct the databases may not in every case indicate gender identity; and it cannot account for intersex, nonbinary, transgender, and/or gender-diverse peoples.

Conflict-of-Interest Statement

The authors state that they have no known conflicts of interest to disclose.

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Supplement A. Semi-Structured Interview Guides

Initial Interview (1)

1. When you decided to join the yoga support group, what were you looking for? What motivated you to participate in this group?
2. How would you describe a yoga support group for survivors to someone who had no idea of it?
3. Can you describe how your experience of yoga or your practice of yoga might have changed over time, from the beginning to the end of the 12-week support group?
4. Please describe any way your experiences in the yoga support group have had an impact on your own process of healing from trauma—either positive or negative.
    a. ***Follow-up:*** Would you be willing to say a little more about that experience (or experiences)? What was that like for you? Can you give an example of when that happened?
5. Can you say something about your experience of safety in the group? What contributed to or detracted from your sense of safety? How did the yoga practice impact your sense of safety? Please describe how your sense of safety in the group may have evolved over time.
6. Please describe any way that your participation in the group might have impacted your experience of trauma symptoms or the way you manage your trauma symptoms in your day-to-day life.
7. Please reflect for a moment on your experiences over time of being connected to or disconnected from your body, the way you have felt or feel now about your body, and any influences your yoga practice may have had on this dimension of your life. Please describe how your yoga experiences have shaped your relationship with your body or your experiences in your body. What stands out about these experiences in relation to your healing process?
    a. ***Follow-up:*** Can you describe that experience further? Are there additional experiences you had where yoga influenced your experiences of your body? Has this changed over time?
8. Can you describe a time when your yoga practice influenced the way you feel, express, tolerate, or have control over your emotions? What was that (or those) experience(s) like for you? What stands out about the experience(s) in relation to your healing?
    a. ***Follow-up:*** Can you describe that experience further? Are there additional experiences you had where yoga influenced your experience of your emotions? Has this changed over time?
9. Please describe the experience when you reflect on your experiences of yourself as a person and the influence the yoga intervention (and/or your practice of yoga) has had on your notion of who you are or your sense of self. What does this mean for you in terms of your healing?
10. Can you describe any experiences where your yoga practice influenced your relationships with others or your feelings of being connected to or disconnected from others? Please describe how your yoga experiences have impacted this dimension of your life. What do these experiences mean for you in terms of your healing?
11. Has your practice of yoga influenced your ability to make meaning from the struggles you have faced related to your trauma history? If so, please describe this experience further.
12. Has your practice of yoga influenced your priorities or outlook more generally in any way? If so, please describe this impact. What does this mean for you in terms of your healing?
13. Has your yoga practice impacted your spirituality, your sense of meaning in life, or your sense of feeling connected to something greater than yourself? If so, please describe that experience. What does that experience mean to you in terms of your healing?
14. Are (were) there particular components of a yoga practice that you felt were more helpful than others to the changes you mentioned above (e.g., breathing exercises, meditation, physical postures, specific postures, group class format, teaching style), or [was it] everything together?

(continued on next page)

Supplement A. *continued*

a. ***Follow-up:*** If the participant did not attribute positive/negative changes to yoga but continues to practice nevertheless, interviewer should inquire: Given that you have not seen changes in the areas we've discussed above, why do you continue to practice yoga?
b. ***Follow-up:*** If the participant has not practiced yoga post-intervention, interviewer should inquire: Can you tell me more about your experiences within the yoga intervention and/or factors in your life outside of the intervention that led you to not continue to practice yoga?

15. Is there anything I have not asked you that you think would be important for me to know? Any areas of difficulty or sources of strength that we haven't talked about? Anything you'd like to ask?
16. Have there been any significant developments in your life (e.g., other mind-body practices, life challenges, therapeutic treatment, medication adjustments) that may have contributed to some of the changes you described in this interview?

First Follow-up Interview Guide (2)

1. As you look back to your experiences with the trauma-sensitive yoga support group, can you describe what stands out as having been useful or important for you?
2. From your perspective, is there anything you would have liked to have been different about the support group?

Follow-up questions were based on the participants' responses.

Final Follow-up Interview Guide (3)

1. As you hear this summary draft, is there anything that you would like to change?
2. Is there anything you would like me to omit?
3. Is there anything you would like to say about the process of participating in this research project?
4. Are there any questions you would like to ask me?