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TRAUMA INFORMED BRIEF MINDFULNESS TRAINING:
A NEW ADAPTATION FOR HOMELESS WOMEN WITH PTSD

Submitted to the Faculty
Yale University School of Nursing

In Partial Fulfillment
of the Requirements for the Degree
Doctor of Nursing Practice

Brigid Gannon

May 20, 2018

Joan Kearney

Date _____

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Brighid Gannon

Trauma Informed Brief Mindfulness Training: A New Adaptation for Homeless Women with
PTSD

Brigid Gannon

Yale University

March 31st 2018

Abstract

Women and children are the fastest growing segment of the homeless population and the United States has more homeless women than any other Industrialized nation (Committee on Health Care for Underserved Women, 2013). Many homeless women experience lifelong trauma and are increasingly at risk for Post Traumatic Stress Disorder (PTSD) (Goodman et al, 1995). Although Cognitive Behavioral Therapy (CBT) is a gold standard treatment for PTSD, homeless women face a variety of barriers when trying to access this type of care including cost, stigma, and geographic inaccessibility (Dutton et al, 2013). Mindfulness may be a good treatment alternative because once learned it can be used in a variety of circumstances regardless of whether homeless women have access to housing, health insurance, mental health treatment, or income. The overall goal of this capstone was to develop a brief trauma-informed mindfulness intervention for PTSD that is tailored specifically for homeless women who have been and continue to be exposed to trauma. The development of the intervention was based on a comprehensive review of the literature, validated by a professional expert panel and a group of homeless women and piloted at the Tillary Street Women's Shelter. In addition, a brief interview developed by the author and Dr. Joan Kearney was used with all shelter residents to further inform and refine the intervention.

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Capstone Title: Trauma Informed Brief Mindfulness Training: A New Adaptation for Homeless Women with PTSD

Chapter 1

Introduction

Considering increasing inequality and the lack of affordable housing, it is not surprising there is a homelessness crisis in the United States. According to the Coalition for the Homeless (2016), homelessness in New York City has reached its highest level since the Great Depression of the 1930s. In July 2016, there were 60,456 New Yorkers living in shelters, one of the highest numbers ever recorded (Coalition for the Homeless, 2016). In fact, the number of homeless New Yorkers living in city-funded shelters is now 87% higher than it was ten years ago (Coalition for the Homeless, 2016). Black and Hispanic people are disproportionately affected by homelessness. Approximately 85% of New York City single adults in shelters are non-white (Department of Homeless Services, 2016). Of the nearly 61,000 mostly black homeless New Yorkers, the Department of Homeless Services was successful in placing only 1,000 single adults in permanent or supportive housing (Department of Homeless Services, 2016).

Since implementation of a nationwide policy of deinstitutionalization, the relationship between mental illness and homelessness has been well established in the literature. Multiple high-quality studies on homeless individuals have shown that a large number of homeless people, between 20 and 25%, suffer from a serious mental illness, specifically schizophrenia, schizoaffective disorder, bipolar disorder or major depressive disorder (National Coalition for the Homeless, 2009). Only 6% of non-homeless Americans suffer from severe mental illness (National Coalition for the Homeless, 2009).

Women and families are the fastest growing segment of the homeless population, and the United States has the largest number of homeless women of all industrialized nations (Committee on Health Care for Underserved Women, 2013). Domestic and sexual violence is the leading cause of homelessness for women and families, with between 20 and 50 % of all homeless women and children becoming homeless in the US as a direct result of escaping domestic violence (Committee on Health Care for Underserved Women, 2013).

Trauma and Homeless Women

The high prevalence of violence against women in the United States has been well established in the literature. Rigorous and community-based representative studies estimate that nearly 1 in 5 (18.3%) of women reported experiencing rape at some time in their lives (CDC, 2012). Nearly half of women who have reported being sexually assaulted in their lifetime were first raped before age 18. Only a very small percentage of perpetrators (13.8%) are strangers (CDC, 2012). In addition to experiencing sexual violence, women are also at risk for physical assault. The Center of Disease Control found that nearly 1 in 4 women who were interviewed reported a history of severe physical violence from an intimate partner (CDC, 2014).

Even more alarming are the rates of victimization among homeless women, especially women with a history of mental illness. Without good internal and external resources, homeless women with mental illness are at very high risk of experiencing violence and other forms of trauma. In a study by Goodman et. al (1995), of the 99 predominantly black and mentally ill urban homeless women who were interviewed, 92 % reported a history of both childhood and adult physical and sexual abuse. Moreover, a large majority (over 50 %) of these participants reported that the abuse they experienced was severe and from multiple perpetrators, usually beginning in childhood and continuing throughout their adult lives (Goodman et al,

1995). Severe violence in this study included beating, burning, biting, threats with a knife or gun, and forced intercourse, among other horrific acts (Goodman et al, 1995). As Goodman et al (1995) concludes, violent victimization for these women “is so high that rape and physical battery are normative experiences” (p. 477) and trauma becomes “inextricably woven into the fabric of their daily life” (p. 477).

Other high quality large studies have illustrated that sexual and physical assault are common experiences for homeless women. In a study of 436 homeless and poorly housed women, approximately 66% reported a history of severe physical violence by a childhood caretaker (Browne et al, 1996). Of these homeless women, nearly half reported childhood sexual abuse and 61% reported severe violence from a male partner during adulthood. Similar to Goodman et. al (1995), Browne et. al (1996) found that a history of childhood abuse put homeless women at risk for experiencing intimate partner violence during adulthood. The research has also shown that homeless women are more at risk than housed women for experiencing very violent forms of sexual assault including multiple forced sexual acts (Stermac & Paradis, 2001). Kushel et al (2003) found that approximately one-third of the homeless women interviewed had been sexually assaulted within the last year.

Homeless mentally ill women are clearly some of the most vulnerable people in our communities. Without the stabilizing effect of a home and consistent psychiatric treatment, homeless women struggle to cope with chronic traumas, and post-traumatic stress disorder (PTSD) is a frequent outcome. According to North & Smith (1992), 98 % of their sample of 300 homeless women who had experienced a lifetime trauma reported at least one symptom of PTSD, and 34 % met full DSM criteria for PTSD. This is in stark contrast to the low-income comparison group in the study, which had much lower rates of PTSD (3.1 %). Rape was the

most likely of all traumas to be reported in association with symptoms of PTSD (North & Smith, 1992). Lastly, the homeless women in this study who had a history of mental illness were much more likely to develop PTSD than homeless women with no behavioral health history (North & Smith, 1992). In addition to developing PTSD, homeless women who reported a history of rape were found to be in worse general health and were more likely to have used illegal drugs (Wenzel, 2000).

PTSD and Complex Trauma in Homeless Women

Homeless women carry high rates of PTSD diagnosis (36.2%) (Bassuk et al, 1999). Characteristic symptoms include; 1) re-experiencing; 2) avoidance; 3) negative thoughts or feelings; and 4) hyper arousal and reactivity. (Diagnostic and Statistical Manual of Mental Disorders (DSM-5), 2013). Repeated, relationally based trauma is called “complex trauma” (Courtois, 2004) and can fundamentally change psychological development in young people and create negative belief systems about the world and others (Briere & Jordan,2004).

Early chronic, complex trauma is characteristic of homeless women and creates cumulative toxic stress with a distinct clinical profile, also referred to as complex PTSD (Courtois & Ford, 2013; Van Der Kolk, 2014). Complex PTSD includes some PTSD symptoms as well as a number of additional symptoms related to emotional regulation, interpersonal relationships and self- mechanisms (Van Der Kolk, 2014).

What happens to women who have been chronically traumatized?

As Judith Herman (1992) describes in her groundbreaking book *Trauma and Recovery*: “People subjected to prolonged, repeated trauma develop an insidious, progressive form of posttraumatic stress disorder that invades and erodes the personality. While the victim of a single acute trauma may feel after the event that she is ‘not herself,’ the victim of

chronic trauma may feel herself to be changed irrevocably, or she may lose the sense that she has any self at all” (p.86).

Women who have suffered multiple deeply disturbing or distressing events, are continually hypervigilant, anxious and agitated, and live in constant fear that their past traumas will occur again (Herman, 1992). The limbic system’s fight or flight response becomes dysregulated. Victims are on constant alert for danger and struggle with distinguishing between potential danger and safety. In this way, events that are even remotely related to violence, such as thunder, a siren, or screaming, bring out an intense and disproportionate fear response (Herman, 1992). Chronically traumatized people “no longer have a baseline sense of physical calm or comfort and may over time even perceive their bodies as turning against them” (Herman, p.86, 1992). In other words “trauma robs you of the feeling that you are in charge of yourself, and the challenge of recovery is to reestablish ownership of your body and your mind and your self.” (Van Der Kolk, p.205).

Gaps in Current Treatment for PTSD

Current gold standard treatments for PTSD include exposure therapy and cognitive behavioral therapy (CBT). Unfortunately, homeless women may encounter multiple barriers while trying to access these treatments, including cost, lack of health insurance, and geographic inaccessibility (Dutton et al, 2013). Also, there may be high levels of stigma associated with these types of more traditional mental health treatments, implemented as they are by psychiatric clinicians in behavioral health settings. We know that stigma has been shown to decrease treatment compliance and treatment seeking, especially in minority populations (Dutton et al, 2013). Exposure therapy and cognitive behavioral therapy require that patients directly confront

the trauma narrative multiple times. Homeless women who have poor self-soothing skills and limited outside supports may not be able tolerate these experiences (Dutton et al, 2013).

Although cognitive behavioral therapy and exposure therapy are considered gold standards of care, the literature has pointed out various problems in their treatment for PTSD. In a recent large randomized clinical trial examining prolonged exposure therapy for women with PTSD, 38% of the participants dropped out (Schnurr, 2007). In addition, 59% of the subjects still had trauma related symptoms after 12 weeks of treatment and 78% remained symptomatic at the 6-month follow-up (Schnurr, 2007). During the course of this study there were five serious adverse events, including one suicide attempt that was noted as possibly related to the participant receiving exposure therapy (Schnurr, 2007). In addition, a multidimensional meta-analysis of psychotherapy for PTSD found that approximately only half of patients who had completed CBT showed clinically meaningful improvement (Bradley et al, 2005). Similarly, the Institute of Medicine committee on the treatment of PTSD found that the scientific evidence on the treatment modalities for PTSD do not reach the level of certainty that would be desired for such a common and serious medical condition (IOM, 2007).

Rationale for Mindfulness as an Alternative Treatment for PTSD in Homeless Women

Mindfulness “is a process of learning to be present in the moment and observing internal experience (e.g., thoughts, bodily sensations) and external experiences (e.g., interactions with others) in a non judgmental way” (SAMSHA, p.19, 2015). There are different techniques that can be used to increase mindfulness skills including guided imagery, meditation and deep breathing. Although an emerging intervention, mindfulness may be a useful strategy to address traumatic symptoms experienced by homeless women.

Trauma specialist Bessel Van Der Kolk (2015) has identified multiple possible benefits from mindfulness in regards to traumatic symptoms. Mindfulness may help trauma survivors reestablish a sense of ownership by increasing emotional regulation and maintaining calm in response to intrusive sensations or memories that remind them of their past traumas (Van Der Kolk, 2015). Mindfulness may also assist women in not feeling overwhelmed by seemingly unbearable sensations by helping them to learn that these feelings are transient and that they will pass (Van Der Kolk, 2015). Also, mindfulness may help to reset the fight or flight response that has become dysregulated during post-traumatic stress disorder (Van Der Kolk, 2015). Lastly and perhaps most importantly, mindfulness may help women stay fully alive in the present moment and connected with people around them (Van Der Kolk, 2015). Mindfulness may also be a good alternative treatment because it is cost effective and can be implemented by non-psychiatric staff in a community setting, which may decrease stigma and increase usage (Dutton et al, 2014). It may be especially helpful for homeless women because once it is learned it can be used anywhere in a variety of circumstances at essentially no cost regardless of whether they have health insurance or access to mental health treatment.

Chapter 2

Literature Review: Evidence for Mindfulness as an Intervention to Treat PTSD

Still emerging, there is ongoing research into whether mindfulness is an effective or appropriate intervention for PTSD. Interestingly, most of this research has been published in the last six years, suggesting that this is a new and exciting area of research still in its infancy. What follows is a summary of the best and most appropriate available research found during the author's literature review.

Systemic Review Evaluating Mindfulness-Based Approaches for PTSD

Banks et al (2015) wrote the first and only available systematic review aimed at examining and evaluating the existing research for the use of mindfulness-based approaches to treat PTSD. The 12 studies included in the review featured four RCTs, one non-randomized control trial, three uncontrolled trials and four pilot studies, all of which used adult samples and employed reliable and valid outcome measures of mindfulness and PTSD (Banks et al, 2015). The studies included a wide range of samples with PTSD, including combat veterans, cancer patients, and women who had survived domestic violence. The studies were also heterogeneous in regard to PTSD severity and trauma type. With such heterogeneity, meta-analysis of the results was not possible and a narrative summary was used to evaluate the evidence.

Banks et al (2015) conclude that the majority of the studies reported improvements in PTSD symptoms post-intervention and that these improvements were often sustained in studies that featured long-term follow up. The authors also concluded that there were minimal adverse effects from the mindfulness interventions. Overall, the results of this systematic review are promising for clinicians interested in mindfulness as an alternative treatment for PTSD. The authors, however, do caution readers that a large majority of the studies lack methodological rigor, and more high-quality research with blinding, randomization, and larger samples are needed.

Evidence to Support Yoga for Women With Chronic PTSD

In 2014 van der Kolk and his team published the results from a randomized control trial looking at yoga as an adjunctive treatment for Posttraumatic Stress Disorder in women with

chronic and treatment resistant PTSD. Although cited extensively in the trauma literature, this trial not included in the Banks et al (2015) systemic review. Yoga is a mindfulness-based practice which asks participants to maintain a non-judgmental focus on their bodily sensations through breathing exercises in hopes that this habit may eventually reduce the fear response, which has become dysregulated from chronic trauma exposures. The authors of the trial state that “the heightened body awareness fostered by yoga can help to detect physiological aspects of physical sensations (e.g., body tension, rapid heartbeat, and short, shallow breath) and provide information about the internal milieu, a prerequisite for accurate identification of the triggered emotional response (e.g., fear)” (van de Kolk et. al, p. 2, 2016). Moreover, they propose that yoga might be more helpful than traditional meditation for chronic trauma survivors because it is more structured and offers frequent guidance.

Eighty three women with chronic trauma histories were included in the van der Kolk study. The participants were considered treatment resistant because they all had at least 3 years of prior psychotherapy treatment with little symptom relief. The yoga intervention offered 10 weeks of a trauma informed yoga class, while the control treatment offered 10 weeks of an hour-long women’s education class. At the end of the study about half of the participants in the yoga group no longer met criteria for PTSD compared to only 21% of the control group (Van der Kolk, 2014). Although, both groups displayed a statistically significant decrease in PTSD symptoms, these improvements were only maintained in the yoga group, as opposed to the control group whose PTSD symptoms eventually returned (Van Der Kolk, 2014).

Approximately 18 months after this RCT was completed, the study participants were invited to participate in a long term follow up study to assess whether continued yoga practice affected PTSD symptoms (Rhodes et al, 2016). The researchers found that a large majority of

the women originally assigned to the yoga group (23 out of 26) were still practicing yoga and that the women who practiced more frequently were more likely to have recovered from PTSD (Rhodes et al, 2016). This study further supports yoga as a mindfulness-based intervention for women who have extensive trauma histories and who have not benefited from traditional trauma treatments such as individual psychotherapy. As the author of this second study states, “given the low cost of yoga, its wide popularity, and relative ease of access to community-based classes, exploring opportunities with trauma survivors to add yoga to their overall arsenal of healing and wellness practices would seem to be a compelling avenue for therapeutic attention” (Rhodes, p. 195, 2016).

Evidence to Support Mindfulness as an Intervention for Homeless Women With PTSD

Mindfulness-based interventions may be a good and effective alternative to treating PTSD in homeless women. However, after an extensive search, only two studies specified the inclusion of homeless women. These studies were not included in the systematic review described above.

A pilot study by Dutton et al (2013) considered whether the use of Mindfulness-Based Stress Reduction (MBSR) is both a feasible and acceptable intervention for trauma in a population of low-income and mostly black women with PTSD and a history of intimate partner violence. To assess feasibility and acceptability, the authors conducted focus groups and individual interviews with residents and directors of domestic violence and homeless shelters. These interviews revealed multiple concerns, including that the standard MBSR may be too long, that closing one’s eyes may be difficult, and that body scans that focus on the pelvic region might be distressing. To address these concerns, the authors made modifications to standard MBSR, including providing childcare, holding individual pre-orientation sessions with

participants, reducing the length of sessions, and allowing participants to keep their eyes open during meditations.

With these modifications, Dutton et al (2013) concluded that MBSR was both a feasible and acceptable intervention. Of the 206 women screened, 77% were eligible and 97% expressed interest in participating in the study. Approximately 70% of the participants completed at least 5 sessions. Lastly, participants in the study reported that the mindfulness practices were relevant and useful in that they promoted healing and reduced their everyday stress, in addition to increasing their awareness, self-empowerment, and self-care.

A qualitative analysis by Bermudez et al (2013) looked at how beginning mindfulness training is experienced for homeless women with PTSD and a history of intimate partner violence. Of the 10 women in the study, nine were black, seven had children, and all had experienced lifelong chronic trauma, including recent intimate partner violence. The participants reported a variety of benefits from mindfulness training, including increased serenity, awareness, emotional regulation, socialization and self-empowerment, and decreased fear. It was reported that the emotions of trauma were processed and regulated by some participants and that some were better able to address victim /abuser processes. (Bermudez et al, p. 107, 2013).

Systematic Review Examining Mindfulness Meditation for Substance Use Disorders

Theoretically mindfulness meditation may help addicts better tolerate the unwanted thoughts, emotions and sensations typically experienced during drug and alcohol cravings (Zgierska, 2009). Drug abuse is common among traumatized homeless women, presenting another challenge regarding treatment (Wenzel et al, 2009). Mindfulness meditation may help these individuals decrease their preoccupation with how and when they are going to get their next alcohol or drug dose and instead focus on the present moment (Zgierska, 2009). Although

clinicians have been using mindfulness meditation in chemical addiction treatment for some time now, only 1 systematic review exists examining its efficacy. Zgierska et. al's (2009) systematic review included 22 published studies, 7 of which were randomized control trials and 6 of which were controlled non-randomized trials. The majority showed positive outcomes. The systematic review also suggests that the best therapeutic effects are achieved when the mindfulness intervention is tailored to accommodate the specific needs of the targeted population (Zgierska et. al, 2009). Lastly, there is also some evidence to suggest that mindfulness meditation is especially helpful in treating substance use disorders when the target population also suffers from a mental illness (Zgierska et. al, 2009).

Goals and Aims of this Capstone Project

According to recommendations from the Committee on Health Care for Underserved Women (2013) and based on the results of the studies reviewed here, providers working with homeless women should provide individualized and trauma-informed care that meet this population's special needs. There is no mindfulness intervention designed specifically for homeless women with post-traumatic stress disorder and a history of mental illness. The overall goal of this capstone was to develop a brief trauma-informed mindfulness intervention for PTSD that is tailored specifically for homeless women and based on the evidence. Specific goals for this project include:

1. To review the literature on psycho-behavioral intervention needs in vulnerable populations with PTSD, especially homeless women who have suffered chronic trauma.
2. To engage a group of homeless traumatized women in informing the development of a specific trauma focused mindfulness intervention

3. To develop a brief mindfulness intervention for the treatment of PTSD tailored for homeless women who have experienced trauma, based on the evidence and the input of this community of women.
4. To validate the intervention.
5. To implement and evaluate the intervention in a group of homeless women with PTSD and mental illness.

Chapter 3

Methods

This scholarly project included a review of the literature pertaining to interventions with chronically traumatized homeless women and then proposed, validated and piloted a tailored mindfulness intervention with this group.

Specifically, the goal of this scholarly project was to develop an evidenced based mindfulness intervention tailored for homeless women who have been and continue to be exposed to trauma. In addition to the literature review described above, triangulated data sources and methods of collection were used to inform and refine the intervention. The multiphase, triangulated design of the project provided a robust foundation for the exploration of mindfulness meditation as a feasible, acceptable treatment in this highly vulnerable and growing group of women. These phasic, triangulated procedures included: initial brief interviews with a large group of women living in a New York City shelter for homeless women; a second round of focus groups with a subsample of these women; and the use of an expert professional panel to examine and refine the proposed intervention in two review cycles. From the literature and the initial brief interviews, the author identified key components of mindfulness that have the potential to be helpful for treating chronic trauma symptoms. In an iterative approach, an expert panel then

rated the validity of these components. The method of using an expert panel to rate the validity of the intervention was based on the process described by Lazenby et al (2014). Focus groups comprising shelter residents were conducted after the first expert panel review to further gather targeted, participant-centered information on the proposed intervention, followed by a second cycle of expert review. This thorough, iterative process supported the validity and feasibility of the intervention. Following these development phases, the mindfulness intervention for trauma in homeless women was piloted and feasibility tested at the Tillary Street Shelter in Brooklyn New York. The specific aims of this project were as follows:

Specific Aim 1: To review the literature on psycho-behavioral intervention needs in vulnerable populations with PTSD with a specific focus on the needs of homeless women who have suffered chronic trauma.

The purpose of the literature review was to examine if mindfulness-based interventions have been found to be helpful in treating trauma symptoms. Unfortunately, there was very little research on this topic in homeless women. Therefore, the preliminary search was expanded to include other underserved and trauma exposed female populations.

An initial Boolean search was conducted on October 7th, 2015 using the following terms and their synonyms: women, adult, homelessness, mindfulness, and underserved. In total 26 search terms were used. A full list of the search terms used can be found in Appendix 1. The following databases were utilized: the Cochrane Library, PubMed, OVID, CINAHL, and PsychInfo. Articles not written in English were excluded from the search. Only articles written in the last 15 years were included.

After review, pertinent articles were summarized in a research matrix to assist the author in organizing and synthesizing the evidence. Of the 329 articles reviewed 17 articles were

included in the research matrix. A PRISMA flow chart outlining the search process can be found in Appendix 2. The research matrix can be found in Table 1. Ongoing systematic literature searches were conducted every 3 months until the completion of the capstone to update the research matrix with new evidence. This process was carried out in consultation with Drs. Joan Kearney and Ruth McCorkle, and librarian Ms. Janene Batten.

Specific Aim 2: To include this community of homeless women in a community engaged approach to gathering critical information from the women themselves as stakeholders in the project, core informants and recipients of the intervention.

In keeping with the SAMHSA standards of trauma informed care the author engaged the community and interviewed all interested residents living at the Tillary Street Shelter. The author adapted a brief, qualitative interview originally created by Dr. Joan Kearney for research with mothers of pediatric cancer survivors who also experience a form of traumatic stress. The interview was modified for this population with respect to their specific trauma-involved symptoms and expressed needs for symptom management and treatment. In addition, this interview allowed the community to express their opinions about a specific mind-body intervention aimed at the tolerance of uncomfortable feelings and stressful emotions (e.g., mindfulness). Following IRB approval, all residents were invited to participate in this one-on-one interview. The interview can be found in Appendix 3.

Six shelter staff members received specialized training and approval from the IRB to participate as affiliated researchers in this project. They assisted the primary researcher with interviewing the clients and recording their answers. Prior to this phase of data collection, the author met with each case manager individually for 30 minutes to review procedures for the interview thus ensuring uniformity in administration. Once the affiliated researchers received the

qualitative interview, they had 1 month to engage residents. The interview was voluntary and confidential. Findings from the brief qualitative interview were analyzed by Brigid Gannon and Dr. Joan Kearney using directed content analysis (Hsieh&Shannon, 2005). Results were quantified in percentages and frequency counts and summarized (See Table 2 and Table 3). Additionally, question 3 of the interview was used to inform the development of the specific features and procedures with respect to the mindfulness intervention.

Upon completion of the above procedures related to specific aims 1 and 2, information gathered from the literature review and the qualitative interviews were used to develop components of the proposed intervention.

Specific Aim 3: To propose a brief mindfulness intervention for the treatment of PTSD tailored for homeless women who have experienced trauma, based on the evidence.

The proposed mindfulness intervention was based on the current best evidence and the SAMHSA standards of trauma informed care (SAMHSA, 2015). In keeping with these standards, the intervention was designed to recognize the need for trauma survivors to feel respected and connected, the interrelation between trauma and symptoms of trauma, and the importance of nurses working in collaboration with trauma survivors and their communities (SAMHSA, 2015). The intervention was based on identified components extracted from the evidence that are essential for mindfulness meditation. The author also identified components from the literature that have been found to be helpful in treating trauma symptoms in women, as well as extracted components from the literature that are essential to the SAMHSA standards of trauma informed care. Supporting literature on chronic, complex trauma in women was examined in the development of this targeted intervention. Specifically, the author looked closely at the work of Judith Herman (1992), Christine Courtois (2012), John Briere (2006) and

Marylene Cloitre (2006). Information from the qualitative interviews, particularly the responses related to mindfulness meditation, were used to inform the development of the intervention in this particular group of women, thus bolstering internal validity and support for feasibility of implementation in this setting. These modifications (components) are listed in table 4.

Specific Aim 4: To validate the proposed intervention based on consensus by a panel of experts while also using a community engaged approach to support and inform the final validation.

Using the intervention components identified in specific aim 3, the author constructed an Expert Panel Rating Tool (see Appendix 4). This tool was used to validate the intervention in two phases. The first phase included validation by an expert panel and the second phase included validation by the shelter residents themselves in the form of two focus groups.

Phase 1: The Professional Expert Panel

Five individuals from a variety of professional mental health disciplines served as expert panel members and evaluated the validity of the proposed intervention components identified by the author in specific aim 3. These experts were chosen and recruited based on their knowledge related to trauma, trauma interventions, and mindfulness approaches. Information on the expert panel is found in Appendix 5.

Using the guidance provided by Lazenby et al (2014) the author constructed an Expert Panel Rating Tool. The Expert Panel Rating Tool included the intervention components identified in specific aim 2 (see Appendix 4). This tool was used individually by each expert to consider the validity of the intervention characteristics. Experts were given clear written instructions concerning the purpose of this validation, how to rate the intervention components and the due date. Experts were given four weeks to complete their Expert Panel Rating Tool.

A scoring system and decision criteria was used to determine the level of validation of the content. Components with more than 78% agreement were considered validated by the expert panel. Validated components remained in the intervention. Components with less than 78% agreement were not considered validated by the expert panel. These components were either removed entirely from the intervention or adjusted and brought back to the panel for a second review.

Phase 2: The Homeless Women Focus Group

The second phase of validation included two focus groups made up of shelter residents with histories of chronic, complex trauma. Two smaller groups were conducted rather than one larger one to accommodate the women, provide ample opportunity for participation, and allow for any challenges they may have in large group participation given their vulnerabilities. The focus groups discussed the intervention components that were validated by the expert panel. Inclusionary and exclusionary criteria for participation in the focus groups are provided below in the explanation of recruitment procedures. Data from these groups were used to further refine the intervention.

Focus Group Recruitment Process: The principal investigator and the unaffiliated researchers referred only English-speaking residents to the focus group for this limited project. Members of the group were selected based on their willingness to participate, their trauma histories and their psychiatric stability. Homeless women who were experiencing significant psychiatric symptoms were not referred to the group due to the significant challenges they often face in a structured group situation. The principal investigator and unaffiliated researchers used three scales to determine whether residents are appropriate for referral.

The recruitment process occurred in two phases. In the first phase of the referral process the research team used the Abbreviated Post Traumatic Check List (PCL-C) to assess for symptoms of PTSD (Lang, 2005). An individual is considered to have screened positive for trauma symptoms if they score 14 or greater on the Abbreviated PCL. Phase two of the recruitment process started once this trauma group was identified. In phase two of the recruitment process the research team assessed for suicidality and level of psychosocial functioning in this group using the Global Assessment of Functioning Scale (GAF) (DSM-IV, 2000) and the Columbia Suicide-Severity Rating Scale (C-SSRS) (New York State Psychiatric Institute, 2008). Shelter residents who answered yes to one or more of questions 2 to 6 in the C-SSRS were not referred to the focus group due to an indication of suicidality and concomitant higher levels of vulnerability. Shelter residents who scored 30 or less on the GAF were also not be referred to the group. A GAF cutoff score of 30 was chosen because it indicates that an individual is unable to function in almost all areas and that their behavior is considerably influenced by psychosis resulting in serious impairment in communication and/or judgment. In addition to using these two scales, the research team also explored with the participants whether they believed that participation in the focus group may be beneficial to them. Residents who did not see a benefit to participating were not referred. Throughout this project participation in any phase or activity was entirely voluntary.

The Focus Group Procedure: Each of the two groups consisted of 5 homeless women residing at Tillary Shelter in Brooklyn New York. The discussions were moderated by the author and each lasted approximately 1 hour. The author transcribed the discussion verbatim using a tape recorder, which was kept locked in a cabinet in the author's locked office at the shelter. The discussion was analyzed for important themes and relevance. Only the author had

access to focus group interview tapes. If the discussion revealed disagreement between the focus group results and the results from the expert panel, these findings were sent back to the expert panel for additional review and comment. Similarly, if the focus group discussion revealed any major new content, these themes were also sent back to the expert panel for additional review.

The final intervention components which are validated through this process were kept in the tailored intervention and are described in table 4.

Specific aim 5: To pilot the tailored mindfulness intervention and determine its feasibility.

Referral Process to the Pilot

Ten homeless women residing at Tillary shelter were invited to participate in the pilot. Homeless women who participated in the focus groups from specific aim 4, phase 2 were not referred to the pilot study. This will be done to broaden participation and increase engagement with the shelter community.

The Intervention Process

The tailored mindfulness sessions were designed to be conducted in group sessions over a two-week period for a total of four sessions. There were two pilot groups each with 5 women, lead by the PI. Each group was designed to last from 20 – 30 minutes. The length of each mindfulness session was determined after receiving feedback from the expert panel and community focus groups as well as real time factors. In addition to participating in the group sessions, the shelter participants were also given an mp3 player with guided recordings of the mindfulness intervention so they could listen to the pre-recorded guided mindfulness sessions as frequently as they would like and keep the mp3 player upon completion of the pilot.

A post intervention questionnaire was also designed (see Appendix 6). The questionnaire included questions about the ease and helpfulness of the intervention, as well as questions related to a participant's sense of confidence in practicing mindfulness on her own.

Evaluation

The tailored mindfulness intervention for homeless women with chronic trauma histories underwent three stages of evaluation:

1. The first stage of evaluation was the validation of the intervention components by a five-member expert panel. As described above, the author developed an Expert Panel Rating Tool, which was used by each individual expert to evaluate the content of the proposed intervention. The purpose of this first stage of evaluation was to ensure that the intervention components were evidence based and align with the expert clinical knowledge in this area.
2. The second stage of evaluation was the validation of the intervention components by the women themselves using focus groups. The purpose of the second stage of evaluation was to ensure that the intervention components align with consumer values, preferences, and goals.
3. The third stage of evaluation was to pilot the intervention at the Tillary Street Shelter in New York to assess feasibility and preliminary indications of efficacy. The purpose of the third stage of evaluation was to identify successful components, weaknesses, and areas that need further exploration. Throughout the evaluation process there were multiple opportunities for the author to adjust and further tailor the intervention based on the feedback that was provided by the experts and the shelter residents.

Statement Related to Human Subjects

This scholarly project involved content with human subjects and required IRB approval.

Emergency mental health services were available to participants on-site if they became distressed at any point during the study. The project did not involve any psychological risk greater than the shelter residents experience on a day-to-day basis living in the shelter, during the admissions process, or in their individual clinical sessions with shelter providers. The entire shelter administration and clinical staff are informed about this study and will provide support.

Capstone and Leadership Immersion

The capstone was piloted and tested for feasibility at the Tillary Street Women's Shelter in Brooklyn New York. The Tillary Street Women's shelter is the largest city funded shelter for homeless women with chronic mental illness and substance abuse. Tillary shelter has 200 beds and has been at capacity since 2008. Tillary Shelter is run by the Institute for Community Living (ICL) a non-profit organization specializing in providing housing and transitional services to homeless New Yorkers. Jeanine Costly, the Vice President of Transitional Services, is in charge of ICL's shelters. She worked in partnership with the author during the implementation phase of this scholarly project.

Chapter 4**Results****Qualitative Interview Results**

In total, 100 homeless women participated in the brief individual interviews. Of the 100 women, 51% identified as black, 18% as hispanic, 14% as white, and 13% as biracial (see Figure 1). The participants were between the ages of 18 and 76 with 43% of the women between age 30 to 49, and 36% of the women between age 50 to 64 (see Figure 2). Most of the women were

either newly homeless (homeless less than 2 years, n=45) or chronically homeless (homeless for more than 8 years, n=24) (see Figure 3). A large majority of the participants (n=75) reported at least some history of childhood or adulthood sexual, physical and/or emotional abuse (see Figure 4). Nearly half of the women (n=46) reported that they had experienced both childhood and adulthood abuse (See Figure 4). The women who reported a history of foster care were much more likely to report a history of at least some abuse (90%) and more likely to report lifelong, chronic abuse (53%) (see Figure 5).

Of the 100 women interviewed, 93 women reported that their past negative experiences had affected their emotional and/or physical health (see Table 2). Across these 93 women, 287 symptoms were reported with an average of 3 symptoms per woman in the following categories (in order): PTSD (148/52%), mood symptoms (76/26%), other psychiatric symptoms (30/10%), physical problems (25/9%), social/financial problems (5/2%), and growth focused coping (3/1%). Of the behavioral health symptoms reported, hypervigilant symptoms were the most frequently reported PTSD symptoms (e.g., nervousness, problems with sleep, fear); depression and anxiety were the most frequently reported mood symptoms; and substance use, psychosis and self-harm were the most frequently “other” reported psychiatric symptoms. Of the 25 women who reported that their negative life experiences had affected their physical health, 17 of those women reported pain. Only 5 women reported that their negative life experiences had resulted in financial problems (e.g., loss of children, lack of income/employment, and homelessness). Interestingly, 3 women reported that living through negative life experiences benefiting them in that they learned forgiveness (n=1) or how to cope (n=2).

The researchers also asked the participants to talk about different self-care management strategies (see Table 3). Of the 100 women, 99 reported things that they do to manage their health problems or things that they think might be helpful in managing them. One woman said she does nothing to help with her health problems. Three hundred and ten self-help activities were reported across the 99 women with an average of 3 per women in the following categories in order of frequency: self-care (169/54%), professional help (57/18%), social interpersonal (36/12%), spiritual (22/7%), self-destructive behaviors (13/4%), avoidance (9/3%), and social economic (4/1%). The top 3 self-care strategies reported were self-soothing behaviors (e.g., listening to music, reading, watching tv), exercise (e.g., walking, going to the gym) and meditation and deep breathing exercises. Fifty seven women (18%) reported that they sought professional help to help them cope, including going to individual and group therapy, taking medication and trying alternative treatments. Two women reported that having access to a regular provider would be helpful to them in managing their health problems. Of the spiritual strategies utilized (n=22), prayer, attending church and learning forgiveness were commonly reported. Only 13 women reported that they used self-destructive behaviors (e.g., substance use, self-harm) to cope. Nine women reported avoidance type strategies (e.g., sleeping, self-isolation, eating and doing nothing). Of the 100 women, only 4 reported that housing or employment would help them in managing their emotional and physical health.

The large majority (n=83) of the women interviewed said a class that helped them tolerate stressful or uncomfortable feelings would be helpful to them. Of those 83 women, 45% said they would want to do the class in a group, 37% said they would want to do the class individually and 17% said they would want to do both (individually and in a group).

Although not a separate question on the interview, 27 women gave specific reasons why they preferred a group vs individual, which the interviewers wrote down. Of those 27 women, 78% reported that they preferred a group so that they could share their experiences and learn from others and 22% reported that they preferred groups so that they could build a community and know they are not alone. Similarly, 22 women gave specific reasons why they preferred individual classes. Of those 22 women, 13 reported that they preferred individual classes for privacy/safety reasons. The other 9 women reported that they preferred individual classes because they wanted the extra one on one attention or could not tolerate hearing other people's trauma stories.

Although not a separate question on the interview, 11 women gave specific reasons why they did not think a class would be helpful which the interviewers noted. Of those 11 women, 6 women reported that a class would not be helpful because things were hopeless and nothing would help, 3 women reported that any class in the shelter would not help because they did not trust the staff or other residents, 1 woman said her concentration was too poor for a class and 1 woman said a class would not help because the cause of her distress is related to not having her children. Only 6% of the women said they would not be willing to go to more than one class.

Of the 83 women who said a class would be helpful to them, 6 were not sure how the class would help. Seventy seven women gave 111 reasons for why a class would be helpful with an average of 1.5 reasons each in the following categories (in order): symptom reduction (76/68%), support coping (21/18%), and address isolation (14/12%). The top two reasons the participants gave for why a class would be helpful was to reduce their PTSD symptoms (47) and reduce stress (22).

Most of the women (80%) reported that it would be helpful if they could listen to someone talking about how to tolerate stressful feelings on an mp3 player in addition to the in-person classes. Seventy six women reported specific reasons why they think listening to an mp3 person could be helpful. One woman said she thought the mp3 player could be helpful but she was not sure how. Of the women who thought the mp3 player would be helpful, 33% reported it would be helpful because they could practice and repeat what they learned outside of class. Another 33% of women reported that the mp3 player would be helpful as opposed to in-person because it would increase their accessibility to the class and they could use it anytime and anywhere. Twenty percent of the women reported that the mp3 player would be helpful to them because they would have an easier time learning the class alone and on their own time. Two of the women reported that the mp3 player would be helpful to them because they could use it to teach the class to others.

Expert panel Results:

Using a comprehensive analysis and qualitative assessment of the pertinent literature, the authors identified 12 trauma informed mindfulness meditation (MM) modifications. Of these 12 MM modifications 6 were deemed significantly important by both a nationally known, 5 member expert professional panel and a focus group of ten homeless women. These 6 validated MM modifications were used to tailor the intervention (Table 4).

Pilot Results

In February 2018 the PI piloted the MM intervention at the Tillary Street Women's Shelter in Brooklyn New York. The pilot took place over a two week period with two groups of five women in each group. Group MM was found to be a feasible, well tolerated

intervention with high acceptability for traumatized homeless women. The time frame for the pilot (two weeks) was feasible. All the groups were conducted as planned and 90% of the enrollees completed all four sessions. About 50% of the sample utilized the 10-minute individual check-ins. The intervention was well tolerated by participants with no adverse events reported. According to responses on the post-intervention questionnaire, all participants who completed the pilot (n=9) found the intervention helpful. Also, all those who completed the pilot (n=9) reported that they had practiced the mindfulness exercises on their own outside of groups and that they planned on continuing the practice after the pilot ended. Almost all the women (n=8) reported that they liked the mp3 player but only as an adjunct to in-person groups. Please see table 5 for post intervention questionnaire responses.

The following is an account of activities in order from beginning to end of each session:

- Individual “check in” with participants if requested (10 minutes)
- Group “check in” with participants (5 minutes)
- Structured breathing and stretching exercises (5 minutes)
- Structured mindfulness meditation exercises (10 minutes)
- Structured group discussion facilitated by PI (10 minutes)

We found that multiple adaptations were necessary and desired to support MM success in this population. The group facilitator sent regular reminders to clients in order to boost recruitment and retention. Also, the groups were scheduled at convenient times in the evenings after dinner when the participants were back in the shelter after attending outpatient rehab programs and outside appointments. We found that it was important that the facilitator be well known to the participants in order to have a baseline level of trust.

Light refreshments were provided to the residents to allow for easier engagement. After receiving feedback from the first group that the shelter's florescent lighting was harsh, the facilitator utilized night lights and a small lamp for the following groups in order to enhance relaxation. Also, the facilitator made a change in the language of one of the MM exercises; change "future" to "other self." This change was made after the facilitator received feedback from the women that they wanted the option in this particular MM exercise to imagine their self before homelessness and other traumas and that they had a hard time imagining themselves in the future. In addition, as the participants became more comfortable some of them asked to lead the group exercises themselves. Lastly, in response to participants wanting to share their accomplishment of the program with their family and case managers, "Certificates of Completion" were created and given to the participants after the last group.

Chapter 5

Discussion and conclusions

Discussion

This project used a robust community engaged approach by involving the shelter residents as stakeholders and core informants. This approach was designed to include multiple opportunities for the authors to integrate community feedback and further refine and tailor the intervention specifically for the special needs of homeless women with chronic and complex trauma. As such, we expected that a community engagement model (CeNR) would be helpful in increasing the likelihood of a successful intervention and were not surprised that the pilot was so well tolerated, feasible and acceptable. Also, we were not surprised that a majority of the homeless participants reported at least some trauma history and that PTSD symptoms were the

most frequently reported symptoms. This outcome supports previous research with this population (Bassuk et al, 199).

There were some unexpected outcomes in this project. To begin, we were pleasantly surprised that three women reported that their negative life experiences resulted in growth-focused coping. Also, we were pleasantly surprised that some of the participants in the pilot gained a sense of mastery of the intervention very quickly as evidenced by their request to lead the MM sessions themselves. In addition, we did not anticipate that the expert panel would disagree on so many of the trauma informed MM modifications. Interestingly, the community focus groups agreed that all twelve MM modifications would be significantly important to them in an intervention as opposed to the panel of experts that agreed on only six.

Nevertheless, as evidenced by the pilot findings, MM appears to be a highly suitable self-care approach for homeless women who typically evidence a high incidence of complex trauma. More high quality research in this area, including randomized and longitudinal trials, are needed to further support this work. Going forward, we recommend that researchers use a community engaged approach when working with this population, and make the following major adaptations to MM; 1) small groups and the option of individual sessions, 2) soft lighting, 3) providing a certificate of completion 4) using a facilitator who is well known to community and trained in trauma informed care and 5) schedule at convenient times.

Conclusion

Health disparities in the homeless population have been well established in the literature. Compared to housed women, homeless women have higher mortality rates, poorer health status, poorer mental health status, higher rates of substance abuse, and poorer birth outcomes (Teruya et al, 2010). In New York City homeless people have an age adjusted mortality rate that is two

to three times higher than the general population (Plumb, 2000). Researchers have also found that homeless women who have a history of intimate partner violence are at an even higher risk for experiencing poorer physical and mental health (Vijayaraghavan, 2011).

Homeless women with chronic mental illness face a multitude of barriers when trying to receive consistent and quality mental health care. These barriers include gaps in health coverage, drug and alcohol addiction, fragmented health care services, prejudice from health care providers, and limited social and financial supports (Plumb, 2000). In addition, homeless women frequently have to choose between accessing healthcare and meeting other competing but equally important human needs such as obtaining food, clothing, shelter and safety (Plumb, 2000).

This scholarly project is innovative and can uniquely inform mental health care for homeless women. To begin, the mindfulness intervention was tailored specifically for sheltered homeless women's unique needs, thus, increasing the likelihood of utilization and benefit. In addition, mindfulness may be a good alternative to traditional trauma treatments because it can be implemented by community health workers in a non-psychiatric setting, which has the potential to decrease stigma and increase usage (Dutton et al, 2014). Lastly, mindfulness may be especially helpful for homeless women because once learned it can be used anywhere in a variety of circumstances at essentially no cost. Homeless women can use mindfulness to cope and self-soothe regardless of whether or not they have health insurance, access to mental health treatment, social supports, adequate finances or housing. Lastly, by involving the community and the shelter staff in the development and testing of this scholarly project, this innovative project provided the authors with a unique opportunity to create a true trauma informed system

of care in this largest NYC women's shelter, thus significantly impacting clinical practice with this population

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Table 1: Research Matrix

Author/Year	Purpose Intervention	Sample	Selected Results	Strengths Limitations	Notes
Courtois (2004)	Article to examine the criteria contained in the diagnostic conceptualization of complex PTSD.	n/a	Complex PTSD consists of 7 different problem areas. Reframing BPD as a posttraumatic adaption may reduce treatment stigma. Complex PTSD is not yet in the DSM-5.		Foundational work.
Grossman (2004)	A meta-analysis to assess	64 studies were retrieved but	Mindfulness based stress	Did not look include	The only meta-analysis

	mindfulness based stress reduction and its health benefits.	only 20 met inclusion criteria. Inclusion criteria	reduction is a useful intervention for a broad range of chronic disorders including depression and anxiety.	studies specifically treating PTSD.	of its kind.
Shannahoff-Khalsa (2004)	Article that describes Kundalini Yoga meditation techniques for treatment of psychiatric disorders.	Men and women with a variety of psychiatric illnesses.	Participants in a RCT and a pilot control study showed less psychiatric symptoms with yoga but no more than with conventional care.	Yoga was helpful but no more than conventional care.	Article describes a detailed breathing based intervention for grief and depression.
Bowen et	To evaluate the	Incarcerated	Participants	Case control	Vipassana

al (2006)	effectiveness of a Vipassana Meditation (VM) course on substance use and psychosocial outcomes in an incarcerated population.	men and women with a history of chemical addiction.	in the meditation course, as opposed with those in usual treatment, showed significant reductions in drug and alcohol use.	study. No randomization.	Meditation is a Buddhist mindfulness-based practice
Cloitre (2009)	A developmental approach to complex PTSD: childhood and adult cumulative trauma as predictors of symptom complexity.	849 women with history of trauma were assessed as part of a series of four trauma treatment studies over a period of approximately 12 years.	Exposure to sustained trauma, especially in the childhood years, disrupts normal development and attachment and	Strengths: The childhood cumulative index included both sexual/physical abuse and neglect and emotional abuse.	Treatment for PTSD should include interventions that help to heal attachment-related injuries. Foundational work.

			frequently results in a complex trauma symptom presentation distinct from PTSD.		
Brewer et al (2009)	An RCT to compare the effectiveness of mindfulness training vs CBT in the treatment of substance addiction and stress.	36 men and women with chemical addiction.	No differences in treatment satisfaction or drug use between groups. Mindfulness training was more effective in reducing stress.	Randomization was used but the sample was small and only 14 participants completed the training.	Pilot study illustrated that mindfulness training is a feasible intervention.
Chiesa (2010)	A systemic review of the	Includes 3 clinical studies	Meditation was shown to	Systemic review	

	current evidence for Vipassana Meditation.	of interest with prisoners with a history of substance addiction.	be helpful in reducing substance use but not post-traumatic symptoms.		
Kimbrough (2010)	A pilot study to assess if mindfulness is helpful in treating PTSD in child abuse survivors.	27 adult survivors of childhood sexual abuse. Nearly 90% of the participants were female.	Mindfulness as a PTSD intervention helped reduce symptoms of depression, anxiety, avoidance, and numbing. Improvements were largely sustained until 24 weeks.	Limitations: exclusion criteria included major psychiatric illness such as schizophrenia and active drug or alcohol dependency. Lack of a randomized control group.	No study related adverse events. Of all the PTSD symptoms, avoidance was most the reduced.

Grabbe et al (2012)	A feasibility pilot study for mindfulness meditation as an intervention for homeless youth.	39 homeless young women and men living in shelters.	Mindfulness meditation programs are feasible for this population.	RCT trials are needed.	Spirituality development was incorporated into the mindfulness intervention.
Bermudez et al (2013)	Qualitative analysis of early mindfulness experiences for women with post-traumatic stress disorder and a history of intimate partner violence.	10 low-income women with a history of chronic trauma. 9/10 participants were black.	Mindfulness practice was helpful in increasing self-compassion and decreasing feelings of avoidance.	Sample population very similar to my patient population.	The mindfulness training was provided in a group setting.
Dutton et al (2013)	A feasibility and acceptability pilot for Mindfulness-	53 mostly black and low income homeless women with	With some adaptation Mindfulness-Based Stress Reduction	Sample population is very similar to my patient population.	Awaiting published RCT results from this author.

	Based Stress Reduction as an intervention for low-income, mostly black women, with a history of violence and PTSD.	PTSD and a history of intimate partner violence.	(MBSR) is both an acceptable and feasible intervention for this population.		
Hinton et al (2013)	Article to describe how the authors utilized acceptance and mindfulness techniques for traumatized refugees and ethnic minority populations.	Refugees and ethnic minority populations with a history of trauma.	With cultural adaptation acceptance and commitment therapy (ACT) can be successfully used with this population.	Interesting case studies included in article. Wide definition of mindfulness utilized.	Does not require repeated exposure to traumatic memories, which may not be tolerated by minority populations.
Winkler (2013)	Qualitative study to assess dance	Structured interviews with 6 dance	Very few dance therapists	Qualitative study	Some the therapists noted that the

	<p>movement therapy in the treatment of male and female sexual trauma.</p>	<p>movement therapists who have worked with survivors of sexual trauma.</p>	<p>participated in the study. This might suggest that dance therapists may not be comfortable in treating sexual trauma survivors.</p>		<p>movement triggered strong visceral trauma memories in their patients.</p>
<p>Seppala et al (2014)</p>	<p>RCT longitudinal study looking at breathing based meditation in the treatment of PTSD in U.S. Veterans.</p>	<p>21 male U.S. veterans with PTSD</p>	<p>The breathing based meditation intervention reduced PTSD and anxiety symptoms. The control group had no change.</p>	<p>RCT</p>	<p>Breathing based-mindfulness, as opposed to traditional meditation, may be more appropriate for patients who cannot tolerate sitting still in</p>

					silence.
Van Der Kolk (2014)	A RCT to explore the efficacy of yoga as an adjunctive treatment for chronic PTSD in women.	64 women with chronic and resistant PTSD were randomly assigned to either 10 weeks of 1 hour a week yoga or 10 weeks of 1 hour a week psychoeducation	Both groups experienced statistically significant improvements, however the improvements were only maintained in the yoga group.	Limitations: Over half of the participants had full employment and were relatively well educated. This is very different from the homeless population.	The authors conclude that yoga and body awareness may be particularly helpful in teaching patients how to tolerate uncomfortable physical and emotional sensations (distress tolerance). Yoga is more affordable than individual

					psychotherapy.
Levine (2015)	Qualitative study to examine dance/movement therapy as a treatment for PTSD in women.	Semi structured phone interviews with 15 female dance/movement therapists. Participants were mostly white and middle aged.	86% of the therapists emphasized the power of providing dance therapy in groups. The therapists viewed movement as an honest form of communication and all emphasized that movement therapy was not the same as dance.	Limitations: Qualitative study. Little empirical evidence to support dance movement therapy as an intervention for PTSD. Interviewer had a background in dance (potential bias).	Dance movement therapy for PTSD needs to be manualized and tested as a potential evidence based-practice.

Rhodes et al (2016)	A long term follow up to a RCT to assess whether continued yoga practice helped with chronic PTSD.	26 women ages 18-58 with chronic and treatment resistant PTSD.	Continued yoga practice significantly predicted greater decreases in PTSD and depressive symptoms. Continued yoga practice also resulted in a greater likelihood of a loss of the PTSD diagnosis.	Limitations: only 26 women from the original study were included. Frequency of yoga practice was based on self report (potential bias).	Participants had been in intensive trauma focused psychotherapy for at least 3 years before starting yoga. Had not found this treatment helpful. Yoga did not seem to help with dissociative symptoms. Not clear how much yoga is needed.
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Table 2: Reported Physical and Mental Health Symptoms from Negative Life Experiences (categorized and in order of frequency)

PTSD (52%)	Mood Sx. (26%)	Other Psychiatric Sx (10%)	Physical Sx (9%)	Social financial Problems (2%)	Growth Focused Coping (1%)
Nervousness (27)*	Depression (45) Anxiety (27)	Substance use (19)	Pain (17)	Loss of children (2)	Increased strength/coping (2)
Problems with sleep (27)		Psychosis (3)	GI sx (2)	Lack of income/employment (2)	Learned forgiveness (1)
Fear (20)		Self-Harm (2)		Homelessness (1)	
Distrust of others (13)					
Re-experiencing; nightmares, flashbacks, intrusive memories (10)					
Low self esteem/shame/guilt (5)					
Anger (5)					

*Number of participants reporting this problem or experience

Table 3: Reported Coping Strategies (categorized and in order of frequency)

<p><u>Self-Care (55%):</u> Self-soothing and regulatory/dosing behaviors (84)* Exercise (56) Meditation/Deep breathing exercises (18) Cognitive reframing (7)</p>
<p><u>Professional help (18%):</u> Individual and group therapy (21) Medication (19) Alternative treatments (7) Continuity of care (2)</p>
<p><u>Social interpersonal (12%):</u> Spend time with friends and family (30)</p>
<p><u>Spiritual (7%):</u> Prayer (11) Attend church (3) Learn forgiveness (3) Read bible (2)</p>
<p><u>Self-destructive behaviors (4%):</u> Substance use (10) Self-harm/risky activities (3)</p>
<p><u>Avoidance (3%):</u> Sleep (4) Self-isolate (2) Eat (2) Nothing (1)</p>
<p><u>Social-Economic (1%):</u> Housing (2) Work (2)</p>

*Number of participants reporting this strategy

Table 4: Final Intervention Components (Trauma Informed MM Modifications)

<ul style="list-style-type: none">• Group sessions
<ul style="list-style-type: none">• Offering option of keeping eyes open
<ul style="list-style-type: none">• Including movement
<ul style="list-style-type: none">• Emphasis on self-compassion (ex: “self-love”)
<ul style="list-style-type: none">• Emphasis on non-judgment
<ul style="list-style-type: none">• Meeting with participants first individually to identify potential triggers

Table 5: Post intervention Questionnaire Responses

<i>Response Category</i>	<i>Response Number*</i>	<i>Total Sample #*</i>
Completed all sessions	9*	10
Intervention helpful	9	9
Used MM outside of groups	9	9
Would continue using MM post-pilot	9	9
Liked using MP3 player Only as an adjunct	8	9

*Participants

Figure 1. Race and ethnicity of participants

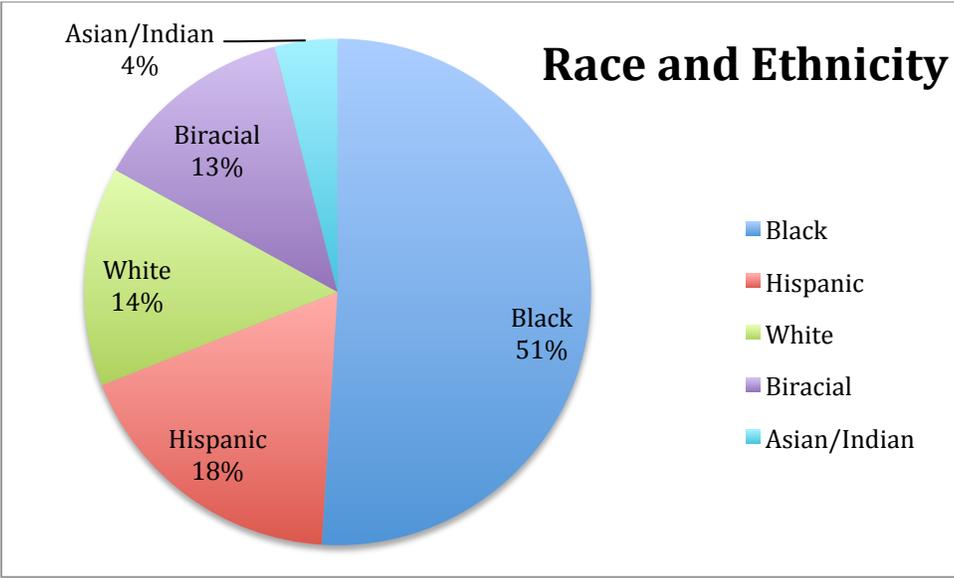


Figure 2. Age of participants

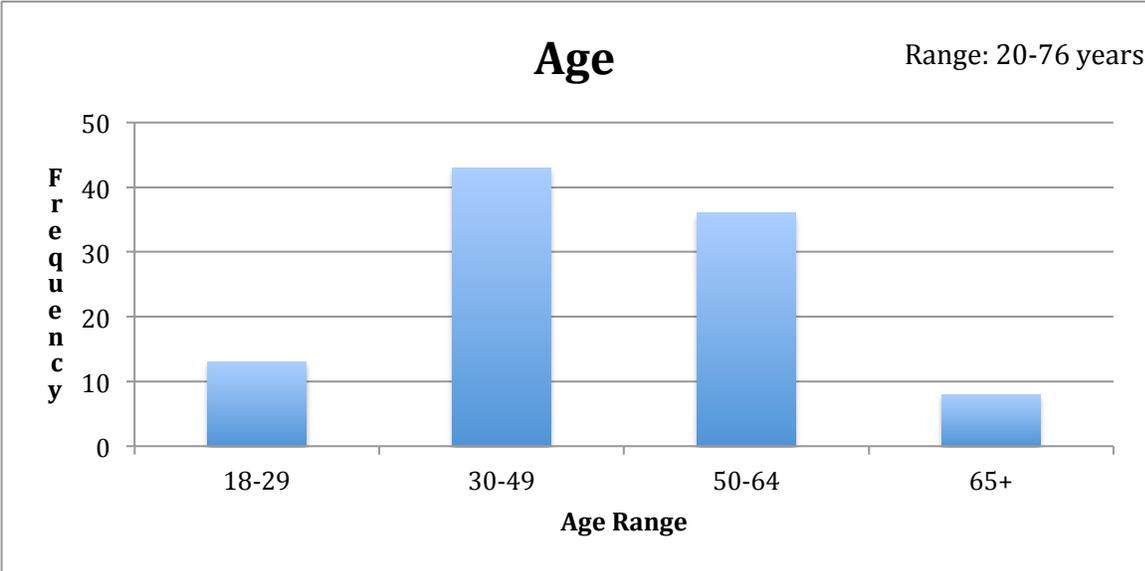


Figure 3: Length of Homelessness Episode

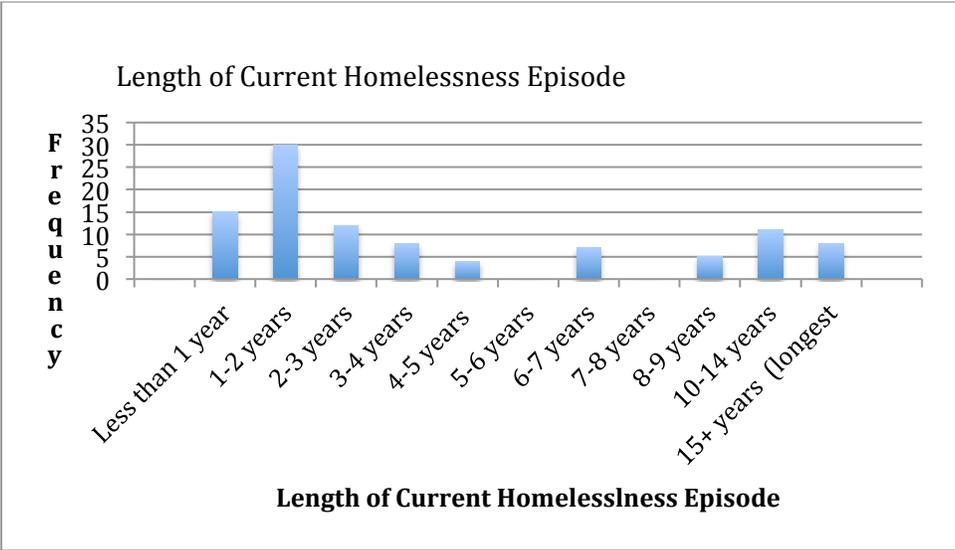


Figure 4: Reported History of Abuse

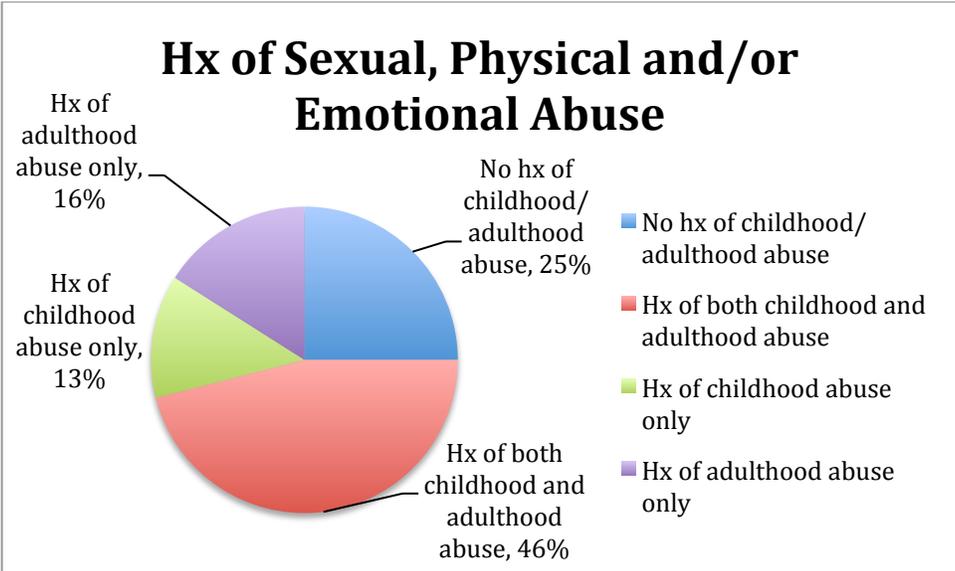
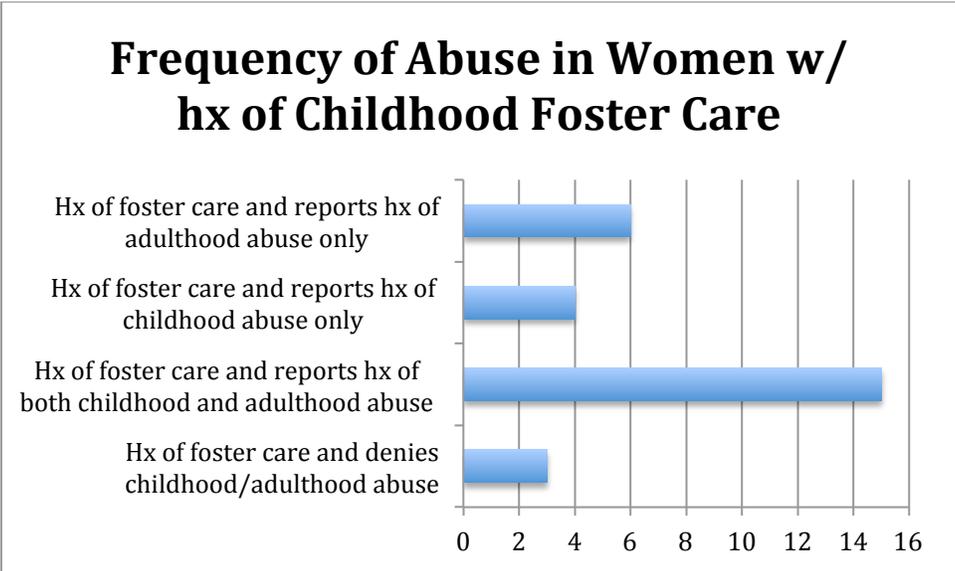


Figure 5: Reported history of abuse in women with history of foster care

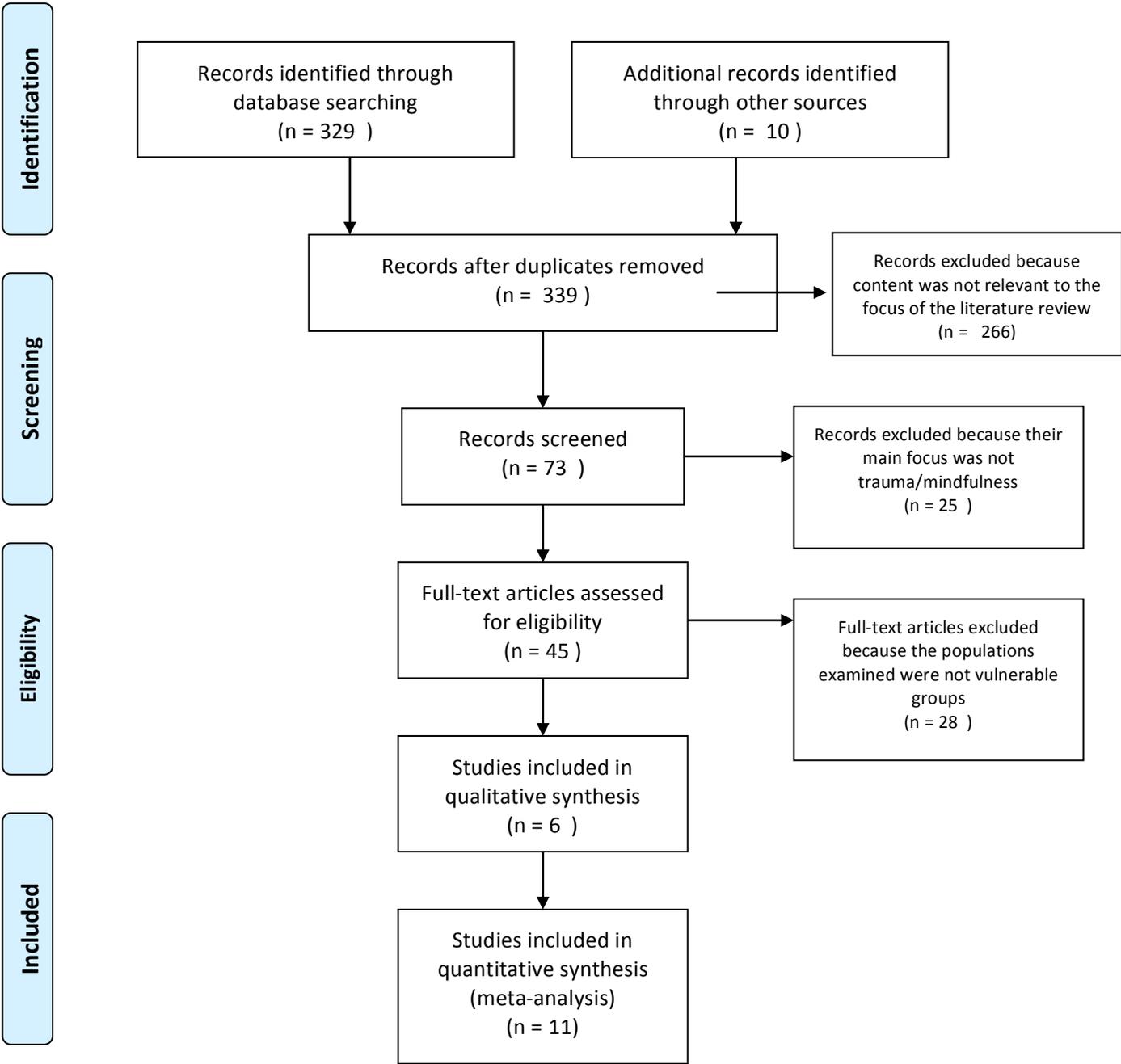


APPENDICES

Appendix 1: Searched Terms

Women	Adult	Trauma	Homelessness	Mindfulness	Underserved
Female		Abuse	Homeless	Meditation	Poor
		Violence		Mindful	Low-income
		Violent		Guided Imagery	Poverty
		Neglect		Self Actualization	Destitute
		PTSD		Acceptance and Commitment Therapy	Impoverished
		Post Traumatic Stress Disorder			Underprivileged
		Torture			

Appendix 2: Prisma Flow Chart



(Prisma, 2009)

Appendix 3: Qualitative Interview

ID # _____ Age _____ Length of current homelessness episode _____

Race _____

Total episodes of lifetime homelessness _____

Hx of Foster Care in Childhood (Yes or No?) _____

Hx of physical, emotional or sexual abuse in childhood? (Yes or No?) _____

Hx of physical, emotional or sexual abuse in adulthood (Yes or No?) _____

1. Can you tell me if you think your past negative experiences have impacted your emotional or physical health-or both?
2. Can you tell me what you've done or things you've tried to manage these health problems and what you think might be helpful to you in managing them?
3. Do you think a class that helped you tolerate stressful or uncomfortable feelings would be helpful to you?

Would you want to do individually or in a group? Would you be willing to go to more than one class?

Do you think it would be helpful if you could listen to someone talking about how to tolerate stressful feelings on an mp3 player?

Appendix 4: Expert Panel Rating Tool

Trauma Informed Brief Mindfulness Training: A New Adaptation for Homeless Women with Chronic PTSD

Background: Existing literature suggests that mindfulness meditation (MM) is an effective treatment for Post Traumatic Stress Disorder (PTSD). MM, once learned, can be used in a variety of circumstances and regardless of resources (e.g., access to housing, health insurance, mental health treatment, or income). As such, this cost effective, self-care approach may be highly suitable for homeless women who typically evidence a high incidence of complex trauma.

Instructions: We believe that certain modifications to MM may be helpful in order to better tailor MM for homeless women with chronic and complex trauma. Please rate the following trauma informed modifications both in terms of clarity and importance using the Likert scale provided (not at all, somewhat, moderately, or very) and use comments section pertaining to each item. Additional space for comments is located at the bottom of this rating form.

Community engagement: We might ask you to do a second review later. In order to include homeless women in this project as both stakeholders and core informants we will be asking them to comment on these modifications in small focus groups. If these discussions reveal disagreement between the community focus group and the results from the expert panel, these findings will be sent back to the expert panel for additional review and comment. Similarly, if the focus group discussion reveals any major new content, these themes will also be sent back to the expert panel for additional review.

*Please kindly rate the items by **bolding** the **Likert scale** you agree with. Thank you.

Items:

1) Group sessions as opposed to individual sessions in order to encourage peer support and community building.

Clarity: Not clear at all, Somewhat Clear, Moderately Clear, Very Clear

Importance: Not important at all, Somewhat Important, Moderately Important,
Very important

Comments:

2) Avoidance of the pelvic region and breasts during body scans.

Clarity: Not clear at all, Somewhat Clear, Moderately Clear, Very Clear

Importance: Not important at all, Somewhat Important, Moderately Important,
Very important

Comments:

3) Allowing for frequent breaks.

Clarity: Not clear at all, Somewhat Clear, Moderately Clear, Very Clear

Importance: Not important at all, Somewhat Important, Moderately Important,
Very important

Comments:

4) Shorter sessions (if you agree please kindly suggest a time length).

Clarity: Not clear at all, Somewhat Clear, Moderately Clear, Very Clear

Importance: Not important at all, Somewhat Important, Moderately Important,
Very important

Comments:

5) Allowing participants to keep their eyes open.

Clarity: Not clear at all, Somewhat Clear, Moderately Clear, Very Clear

Importance: Not important at all, Somewhat Important, Moderately Important,
Very important

Comments:

6) Including movement (e., walking, stretching, dancing).

Clarity: Not clear at all, Somewhat Clear, Moderately Clear, Very Clear

Importance: Not important at all, Somewhat Important, Moderately Important,
Very important

Comments:

7) Special emphasis on self-compassion.

Clarity: Not clear at all, Somewhat Clear, Moderately Clear, Very Clear

Importance: Not important at all, Somewhat Important, Moderately Important,
Very important

Comments:

8) Special emphasis on the beginner's mind.

Clarity: Not clear at all, Somewhat Clear, Moderately Clear, Very Clear

Importance: Not important at all, Somewhat Important, Moderately Important,
Very important

Comments:

9) Special emphasis on non-judgment.

Clarity: Not clear at all, Somewhat Clear, Moderately Clear, Very Clear

Importance: Not important at all, Somewhat Important, Moderately Important,
Very important

Comments:

10) Providing the participants pre-recorded sessions on an mp3 player.

Clarity: Not clear at all, Somewhat Clear, Moderately Clear, Very Clear

Importance: Not important at all, Somewhat Important, Moderately Important,
Very important

Comments:

11) Meeting with participants individually first to identify potential triggers.

Clarity: Not clear at all, Somewhat Clear, Moderately Clear, Very Clear

Importance: Not important at all, Somewhat Important, Moderately Important,
Very important

Comments:

12) Encouraging lots of opportunity for control and creativity by allowing participants to come up with their own visualizations.

Clarity: Not clear at all, Somewhat Clear, Moderately Clear, Very Clear

Importance: Not important at all, Somewhat Important, Moderately Important,
Very important

Comments:

Additional comments:

Appendix 5: Expert Panel

Name	Expertise
Louanne Davis, PsyD	Associate Scientist in Clinical Psychology at Indiana University. Research focuses on developing and testing psychological interventions for people with PTSD and chronic mental illness. Author of <i>Meditations for Healing Trauma: Mindfulness Skills to Ease Post-Traumatic Stress</i> .
David Emerson, E-RYT, TCTSY-F	Founder and Director of Yoga Services at the Trauma Center. Developer of Trauma Sensitive Yoga. Co-Author of <i>Overcoming Trauma Through Yoga</i> .
Victoria Follete, PhD	Foundation Professor in the Department of Psychology at the University of Nevada, Reno. Research has focused on treating complex trauma using mindfulness. Coeditor of <i>Mindfulness and Acceptance: Expanding the Cognitive-Behavioral Tradition</i> .
James Hopper, PhD	Clinical Instructor in the Department of Psychiatry at Harvard Medical School.

	<p>Research has focused on the effects of trauma and mindfulness on the brain.</p>
<p>Adrieena Lujan</p>	<p>Executive Director for holistic and culturally responsive community based wellness organization Sisters of Color United for Education (SOCUE). Has adapted and tailored multiple evidenced based interventions for vulnerable groups using mindfulness meditation as a component.</p>

Appendix 6: Post-Intervention Questionnaire

1. Did you find the mindfulness exercises helpful? In what ways?
2. Were there any parts of the mindfulness exercises that you liked better than others? Why do you think that is?
3. Were there any parts of the mindfulness exercises that made you feel worse? Why do you think that is?
4. Did you practice the mindfulness exercises on your own outside of groups? Did you use your mp3 player to practice or did you practice without the guided recordings? How many times?
5. Did using the mp3 help or did it not make a difference?
6. Did you find that the mindfulness exercises were sensitive to the trauma you have experienced in your life? Why or why not?
7. Do you think you will continue practicing mindfulness on your own? Why or Why not?

Appendix 7: Project Timeline

Activity	Complete by:
Completed comprehensive literature search	October 30, 2016
Methods identified	April 1 st , 2017
Completed capstone proposal	April 30 th , 2017
Complete proposal defense	May 18 th , 2017
Intervention Content Identified	September 1 st 2017
IRB Approval	October 30 th 2017
Expert Panel Feedback Received	October 30 th 2017
Focus Groups Complete	October 30 th 2017
Qualitative Interviews Analyzed	November 15 th 2017
Final Intervention Content Identified	January 1 st 2018
Pilot Launched	February 15 th 2018
Pilot Complete	February 28 th 2018
Pilot Data Analyzed	March 15 th 2018