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# Mindfulness-Based Processes of Healing for Veterans with Post-Traumatic Stress Disorder

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## Abstract

**Objective:** U.S. veterans are at increased risk of developing post-traumatic stress disorder (PTSD). Prior studies suggest a benefit of mindfulness-based stress reduction (MBSR) for PTSD, but the mechanisms through which MBSR reduces PTSD symptoms and improves functional status have received limited empirical inquiry. This study used a qualitative approach to better understand how training in mindfulness affects veterans with PTSD.

**Design:** Qualitative study using semistructured in-depth interviews following participation in an MBSR intervention.

**Setting:** Outpatient.

**Intervention:** Eight-week MBSR program.

**Outcome measure:** Participants' narratives of their experiences from participation in the program.

**Results:** Interviews were completed with 15 veterans. Analyses identified six core aspects of participants' MBSR experience related to PTSD: dealing with the past, staying in the present, acceptance of adversity, breathing through stress, relaxation, and openness to self and others. Participants described specific aspects of a holistic mindfulness experience, which appeared to activate introspection and curiosity about their PTSD symptoms. Veterans with PTSD described a number of pathways by which mindfulness practice may help to ameliorate PTSD.

**Conclusions:** MBSR holds promise as a nontrauma-focused approach to help veterans with PTSD.

## Introduction

U.S. VETERANS ARE at increased risk, relative to civilians, of developing post-traumatic stress disorder (PTSD)<sup>1-4</sup> with prevalence estimates ranging from 10.1% to 39.9% among different cohorts.<sup>5-8</sup> According to the Diagnostic and Statistical Manual of Mental Disorders-5, PTSD comprises a number of symptoms due to the direct or indirect exposure to a traumatic or stressful event.<sup>9</sup> To be diagnosed with PTSD,

persons must have functional impairments lasting at least a month from each of the following symptoms: (1) persistent reexperiencing of the traumatic event; (2) avoidance of trauma-related stimuli; (3) recurring negative thoughts (rumination); and (4) hyperarousal and hyper-reactivity.<sup>9</sup>

Recent studies suggest that mindfulness-based interventions (MBIs) hold potential as nontrauma-focused approaches to reducing PTSD symptoms.<sup>10-15</sup> Specifically, there is initial evidence that MBIs have their greatest

impact on emotional numbing, avoidance behaviors, and hyperarousal.<sup>16</sup> Mindfulness has been conceptualized as intentional nonjudgmental attention and awareness of one's present experience,<sup>17,18</sup> usually taught through mindfulness meditation practices. Mindfulness-based stress reduction (MBSR), a standardized 8-week mindfulness program, is the most broadly disseminated and studied MBI.<sup>19</sup> A recent clinical trial among PTSD-diagnosed veterans showed that compared with another nontrauma-focused approach (present-centered therapy), MBSR (modified to include education about PTSD) produced greater reductions in self-reported PTSD symptoms and greater improvements in quality of life.<sup>13</sup> The rate of clinically significant improvement seen among veterans in the MBSR arm of this trial was comparable with that seen among veterans receiving trauma-focused interventions such as prolonged exposure and cognitive processing therapy.<sup>20</sup>

The mechanisms through which MBSR facilitates improvements in PTSD symptomatology and functional status have received limited study.<sup>14,16,21,22</sup> Qualitative studies can provide a rich understanding of the experiences of program participants and identify program processes that lead to beneficial outcomes. Only a few qualitative studies have evaluated the responses of individuals with PTSD to a mindfulness practice intervention among civilian women<sup>23–25</sup> and veterans.<sup>26,27</sup> Although these studies found mindfulness practices helpful (including an increased ability to manage stress, emotional regulation, reducing rumination and distress, and improving relationships with others), none of the studies addressed *how* mindfulness practice specifically works to help individuals cope with their PTSD symptoms. Thus, the current study used content analysis to better understand *how* participation in MBSR affected symptoms of PTSD among veterans from the veterans' perspectives.

## Methods

### Participants

Study participants were recruited by letter if they had previously participated in an MBSR clinic at the VA Puget Sound Healthcare System and had a diagnosis of PTSD in the electronic health record. Those who did not complete MBSR (attended ≤4 sessions) or did not have a PTSD diagnosis were excluded from this study. All participants gave written informed consent before participation. Due to a temporary halt in MBSR clinics during the time frame of this study, interviews were limited to 15 PTSD-diagnosed participants (nine males and six females) in total. Participants were paid \$25 as compensation for completing the interview.

### Intervention description

The MBSR class series consisted of nine sessions (one full Saturday and eight 2½-h sessions) that included instruction on mindfulness meditation practices and group discussions. The MBSR classes closely followed the standardized curriculum originally developed at the University of Massachusetts,<sup>17,19</sup> without any modifications geared toward PTSD. Classes were open to all veterans regardless of diagnostic status. All classes were taught by instructors who had completed training through the University of

Massachusetts Center for Mindfulness and had longstanding personal practices of mindfulness meditation. Meditation practices included sitting and walking meditation, gentle yoga, body scan practice, and loving-kindness meditation. Participants used Kabat-Zinn's book *Full Catastrophe Living*, a workbook, and audio CDs for guided home meditation practice<sup>17</sup> with encouragement to engage in home practice for 30–45 min per day.

### Procedures

Interviews were conducted in person or by telephone by one of two of the authors and ranged from 60 to 90 min in length. Interviewers used semistructured interview guides with open-ended questions designed to elicit rich descriptions of their experience in MBSR (Table 1). Follow-up probes were used to elicit specific examples and ensure sufficiently rich data. Following each interview, recordings were transcribed for analysis. All study procedures were approved by the institutional review board of VA Puget Sound Healthcare System.

### Data analysis

Data were analyzed using inductive content analysis.<sup>28</sup> Inductive content analysis entailed open/unstructured coding and allows for the identification of emergent previously

TABLE 1. OPEN-ENDED QUESTIONS FOR PARTICIPANT'S EXPERIENCE WITH MINDFULNESS

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What is the most important thing you learned about yourself in the MBSR class?
Tell me what it was like for you doing the meditation and MBSR exercises in class.
Tell me what it was like for you doing the meditation and MBSR exercises at home.
Was there anything that made it easier for you to do the MBSR practice at home?
Was there anything that made it challenging for you to do the MBSR practice at home?
Tell me about practicing the body scan.
Tell me about practicing sitting/breathing meditation.
Tell me about practicing yoga in MBSR.
What did you think about the loving-kindness meditation practice that was introduced?
Were you ever surprised at your reactions to any of the MBSR practices?
[If considers self religious or spiritual] How does the MBSR practices fit with your religion or spiritual practices? Tell me about spirituality and MBSR.
Have you noticed any change [the issue that motivated you to take the program] since you took the MBSR class?
Have there been any changes in your relationships with other people?
Have there been any changes in your sleep?
In the last week, how have you been feeling about yourself? Does this seem different to you than before you started MBSR?
In the last week, how have you been spending your time day-to-day? Does this seem different to you than before you started MBSR?
In the last week, how is your level of stress? Does this seem different to you than before you started MBSR?

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MBSR, mindfulness-based stress reduction.

unidentified or unexpected themes. Atlas.ti qualitative data analysis software<sup>29</sup> was used for coding and data management. Initial line-by-line coding was conducted by the primary author and this initial coding was reviewed by data analysts (M.B.S. and G.S.) to achieve consensus. Following initial coding, code categories were identified and grouped under higher order categories to describe distinct aspects of participants' experiences. These categories were reviewed by the entire research team to ensure salience and groundedness. The data were then reviewed to identify relationships among categories to identify broad themes, and selective coding was used to validate these relationships and continued coding until we reached thematic saturation: the point at which subsequent data failed to produce new findings.<sup>30</sup>

## Findings

Analyses identified six core aspects of participants' MBSR experiences related to PTSD symptoms: dealing with the past, staying in the present, acceptance of adversity, breathing through stress, relaxation, and openness to self and others. Participants did not present these themes as distinct experiences, but rather as a holistic mindfulness experience that appeared to activate introspection and curiosity and was perceived to ameliorate their PTSD symptoms.

### *Dealing with the past*

Some veterans described how mindfulness practices helped them deal with past memories differently and fostered interest in and curiosity about how they got to where they are.

Mindfulness has now not only helped me live in the now, but it also helped me go back and try to understand a little bit about the why of how I got to where I am. And that's difficult for me, because I've conditioned myself for forty years not to do that.

Participants described how practicing mindfulness opened the possibility of revisiting locked away memories and allowed them to come to a better understanding of themselves. This allowed participants to (as one participant described) "find that peace and forgiveness and I can start to relieve some of that guilt."

There's a lot of introspection involved, and it's not necessarily fun sometimes, going back and opening those locked doors, but it helps. It helps you get better; it helps you deal with it. I think MBSR is about you, and tools to help you learn more about yourself and be able to help yourself in the healing process and to open up the doors that you've had locked.

### *Staying in the present*

A key component of the MBSR program is staying in the moment. Participants described this as a valuable tool that helped them in their daily lives.

I'm taking one day at a time, I'm not going forward into tomorrow and I'm not going back, 'cause it says don't go back. 'Cause you don't, you can't redo it: can't change it, uh, it happened and there's no sense going back. And tomorrow,

you can't change that, so live the day one day at a time and just go through what you've learnt and put it in practice. That's what I feel.

Some veterans described being less caught up in thoughts about past or future events as a key skill buffering them from distressing thoughts about the past.

If I allow myself to stay on that and not in the moment, I get very very distraught. And that is one of the things that I've spoken to that mindfulness, and it does help...but it does creep in. And when it does, I know what to do. That's the fortunate thing. So, I have to stay out of the psychological time of yesterday and tomorrow, and learn how to live for today. And, that's the primary reason I got into the class, the primary reason I continue to do what I do, to stay away from those arenas because I can't live there. Those are what drive me nuts.

### *Acceptance of adversity*

Several participants noted that MBSR helped them accept their current realities even when those realities were challenging.

Accept it and you know, accept that you're stressed out, that you accept that you're not feeling so happy and cheerful today, accept it. You just got to accept it. ... what's become a part of you is acceptance and now you're breathing the correct route into acceptance that makes everything else subordinate beyond that point.

In addition to using mindfulness strategies to accept their current stressful reality, several participants described how MBSR changed how they cope with pain:

I'm able to see it [pain] in a different light that pushing through and dragging on is not always the right answer, and you have to spend a little time thinking about your pain to be able to actually manage it. Which was the opposite of the way my brain was working on it. So yeah, being able to look at pain differently.

### *Breathing through stress*

The biggest thing is when I see something is building up inside of me, as far as, like I feel like I'm going to get angry, or get upset, I check in with myself.... So I would stop, and then I say, "okay you [got to] take a deep breath," and I would. When I breathe, I don't just breathe in and hold it, I do an eight count up and then an eight count back out.

Many participants described concrete ways that MBSR helped them to handle stress and negative emotions such as increased awareness of stress and deep breathing:

For example with my daughter-in-law, there's this aspect of her upbringing that I disagree with and now the upbringing of my grandchildren that I try not to let those aspects affect me. I try to step back, breathe through it, whereas I probably might have reacted or said initially before the class what I was feeling or might have worded it differently, whereas now I try to step back, try to breathe through the frustration, and not let it become my problem.

### *Relaxation*

I have asthma and doing the sitting and breathing exercises, it just opens up, it opens up my chest, it opens my mind and

just relaxes you. It just calms you from your head, down to your toes, it just warms your body. You...can actually feel your skin warming as you breathe. Breathing in and breathing out. It's just a cleansing feeling.

Mindfulness practices allowed participants to feel more relaxed and better physically in several ways.

You get to the point doing the meditation that you almost go to sleep. You get so relaxed. I think that's what all of us really truly liked. I mean the body just relaxed, you collapsed, and the whole body gives in. It was wonderful.

### *Openness to self and others*

Some participants discovered increased openness and became kinder toward themselves, which enhanced their relationships.

I've learned how to be more gentle with bringing myself back and not being critical with the fact that I seem to overdo it. All of that has been very very helpful. I guess just being softer within. What I've learned about me is that the softer I am, the easier I am with others. The more critical I am of me, the more critical I am of others, etcetera....so, this thing is paying off on a social level which I'm hoping is good.

Several participants pointed to the group structure of MBSR and instruction as supporting the process of becoming more open to others:

And I was there to learn, so I didn't think I was going to speak up much. And I would say the first session or two I did a lot of listening and I heard a lot of things that were, that little voice in your head was telling me, about me, and that started to open me up, start to help me, started exploring some of those things, dig in to some of those things. And I was so grateful. I had never gone to a group session before, and I didn't think that I wanted to, or that it would be helpful, but there were enough veterans in that group that wanted help that opened up experiences they'd had that it drew me out. Between them and [instructor's name] I was able to actually internalize some of the things and apply them to some of the challenges I'm having.

### **Discussion**

Findings from our study shed light on the processes by which MBSR practice positively influences PTSD symptoms. Individuals with PTSD symptoms often respond to stress in ways that give rise to negative coping patterns that in turn perpetuate the sense of helplessness and maintain PTSD symptomology.<sup>31</sup> Others have suggested that PTSD treatment requires traumatized individuals to learn to activate their capacity for introspection and curiosity about their internal experience.<sup>32</sup> Our findings suggest that MBSR helps to achieve this by providing a holistic set of coping strategies and group support that serve to ameliorate PTSD symptomatology.

By encouraging participants to experience and pay attention to the present moment, MBSR practice appeared to provide tools for dealing with two key challenges associated with PTSD—rumination and anxiety. The former is focused on the past and the latter on the future.<sup>33</sup> Rumination is associated with more severe PTSD symptoms and is a key factor in the onset and relapse of depression.<sup>34–36</sup> Experimental evidence indicates that mindfulness training reduces

rumination.<sup>35,37</sup> As described by individuals in this study, the ability to regard one's memories of past traumas with curiosity and kindness appeared to represent an approach that acknowledged the reality that challenging events happened, but without the repetitive focus on negative emotions characteristic of rumination. Approaching one's past traumas with kindness and curiosity is akin to what Kabat-Zinn refers to as beginner's mind,<sup>17</sup> wherein mindfulness practitioners are encouraged to see the world and others with fresh eyes to foster openness to new possibilities and to step out of entrenched patterns of thinking. These attitudinal and attentional shifts appeared to enhance the ability to tolerate the discomfort of reevaluating painful past experiences and led to changes in their perspectives toward those experiences, themselves, and others.

Many participants explained that mindfulness practices helped them accept situations and conditions in the present, including stress and chronic physical pain, and provided them with constructive ways of coping with current adversity. A key factor in chronic pain is catastrophizing, in which current pain leads to fearful anticipation of future pain.<sup>38</sup> Our findings suggest that MBSR leads to a changed relationship with adversity, such that it is acknowledged and accepted, rather than ignored or reacted to with anger or distress.

A common behavior among individuals with PTSD is avoiding trauma-related stimuli accompanied by emotional numbing. For example, individuals with PTSD may limit going to places or doing things they associate with trauma experiences to avoid feeling anxious, but over time, these practices can lead to decreased stress tolerance as well as to an impoverished lifestyle.<sup>39</sup> Our study participants voiced how they learned to become aware of their stress reactions and to then use breathing practices to manage moments of stress, anxiety, and anger, which (although not described as such) are markers of the PTSD symptom cluster revolving around hyperarousal. An increased ability to effectively regulate emotional and behavioral responses to external and internal stressors is consistent with other studies of MBSR.<sup>14,21,22,40–42</sup> Our findings suggest that MBSR may improve emotional numbing and avoidance symptoms by encouraging the nonjudgmental observation of unpleasant emotional states without trying to avoid them.<sup>16,19,42</sup>

Participants reported improved relaxation with MBSR practices. It is possible that an increased ability to relax reflects reductions in hyperarousal and improved capacity to cope with key aspects of hyperarousal such as anxiety and anger, a finding that has previously been shown to be associated with enhanced mindfulness.<sup>16</sup> Additional factors that might explain these phenomena include an improved ability to ground attention in the body along with cognitive shifts (e.g., reduced rumination and catastrophizing), which could account for the sense that mindfulness practices led to feel(ing) cleansed, relaxed, and improvement in sleep quality.

A common theme that emerged from study participants was that of improved openness with self and others. This increased openness to self and others described by these veterans represents a profound shift away from negative relationship patterns.<sup>43</sup> MBSR facilitated participants step(ping) back to reevaluate themselves, their relationships with others, and relationship with their body and feelings.

These findings are consistent with Shapiro et al.'s theory that mindfulness practice leads to positive change through a fundamental shift in relationship to experience, termed re-perceiving.<sup>42</sup> Results from this study are consistent with other qualitative study findings, in that participants reported increased acceptance of adversity<sup>24–26</sup> and the ability to work through stress using breathing techniques used in mindfulness.<sup>23,24</sup>

While our findings provide an understanding of the ways mindfulness practices can ameliorate veterans' PTSD symptoms, the study is not without limitations. First, the findings are based on a small sample of veterans at one VA facility whose experience may not be generalizable to all MBSR participants. Thus, these findings may reflect participant sampling bias as those who opted to participate in the study may have had different experiences than those who did not. Another limitation is that the focus of these interviews was on the impact of MBSR on PTSD symptoms and therefore the interviews were not conducted with sufficient time following participation in the course to capture data regarding the course and any continued MBSR practice that impacted their PTSD symptoms over time. Because memories of their experiences might wane over time, recollections of the course itself may have been unreliable. Despite these limitations, this qualitative research identified rich interconnected themes with strong face validity regarding ways veterans perceive mindfulness practice as useful in facilitating more effective coping with PTSD and common challenges that accompany it.

Future research should be conducted to evaluate whether such changes are identifiable in larger samples and are associated with improvements in PTSD symptoms and functional status. The findings from the present study suggest that mindfulness practice holds substantial promise for alleviating suffering associated with PTSD and that clinicians and healthcare systems should consider the benefits of offering such courses to help improve symptoms and quality of life for patients with PTSD.

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### Author Disclosure Statement

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