Research

A Qualitative Study Exploring Yoga in Veterans with PTSD Symptoms

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Abstract

Quantitative studies of yoga have reported reduced posttraumatic stress disorder (PTSD) symptoms in veterans, but little is known about how and why veterans are attracted to and stick with a yoga practice. Guided by the Health Belief Model, this study examined veterans' perceptions of the benefits, barriers, and motivations to continue practicing trauma-sensitive yoga. Interviews were conducted with nine individuals, five of whom completed a 6-week trauma-sensitive yoga intervention designed for veterans and four who did not complete the intervention. Transcripts were analyzed for themes. The benefits identified by veterans were finding mental stillness, body awareness, and social connection. The barriers were perceptions that yoga is socially unacceptable, especially for men, and physically unchallenging. Understanding these benefits and barriers can help to make yoga more attractive to service members and veterans. For example, medical personnel can refer service members and veterans to yoga not only for PTSD symptoms, but also to address back pain and to reduce isolation. Access to male yoga instructors, especially those who are themselves service members or veterans, could be expanded, and classes could be integrated into physical activity routines required of active-duty personnel. Promotional materials can feature male service members and veterans with captions related to yoga as a way to increase resiliency, self-sufficiency, and physical and mental mission readiness. Findings from this study can help the Department of Defense and the Veterans Health Administration implement yoga as an adjunct or alternative treatment for veterans with PTSD symptoms. *Cushing, Braun, & Alden. Int J Yoga Therapy 2018(28). doi: 10.17761/2018-00020.*

Keywords: yoga, veterans, posttraumatic stress disorder (PTSD), interviews, Health Belief Model, thematic analysis

Introduction

United States military veterans of post-9/11 wars in the Middle East have returned home with multiple physical and mental health injuries, including the potentially devastating effects of posttraumatic stress disorder (PTSD). PTSD is classified under the category of Trauma and Stress Related Disorders in the fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders* and is defined as exposure to actual or threatened death, injury, or sexual violence with symptoms in four different clusters: re-experiencing, avoidance, negative alterations in mood, and hyperarousal.[1] PTSD can have lifelong symptomatology and impact all areas of a veteran's life, including physical health (e.g., increasing inflammatory cardiovascular diseases) and social functioning (e.g., adversely affecting family and social relationships).[2,3]

The Department of Defense (DoD) and Veterans Health Administration (VHA) continue to expand understanding of and treatment options for PTSD. Current treatments for PTSD include prolonged exposure therapy, cognitive processing therapy, eye movement desensitization and reprocessing, selective serotonin reuptake inhibitors, and other pharmacotherapies.[4] However, many veterans feel that the current PTSD treatments are not meeting their needs. One reason is that many military service members suffering from PTSD have not had success with conventional treatments. Another reason is that many service members would like to be drug-free and try a self-care practice. Negative stigma also continues to be attached to seeking behavioral healthcare among service members and veterans.[5,6]

Partly as a result, the use of complementary and alternative medicine (CAM) is higher in the military than in the civilian population. A military survey demonstrated that as many as 45% of service members are using at least one form of CAM, compared to 36% of civilians.[7] This survey asked about use of more than 19 different CAM practices; the eight most frequently reported among service members

were mind-body therapies, including prayer for one's own health, relaxation techniques, art/music therapy, and exercise/movement therapy.[7] Three of the CAM therapies (yoga, massage, and imagery) were used 2.5–7 times more often by service members than by their civilian counterparts.[8] A review of articles testing the effect of mind-body therapies—including seated or gentle yoga that used breathwork, meditation, mantra repetition, or breathing exercises—on veterans with PTSD symptoms found these interventions to significantly reduce symptoms.[9–22]

Looking specifically at veterans of post-9/11 conflicts with PTSD symptoms, Cushing and colleagues[23] tested the effect of a military-tailored yoga intervention. This military-tailored yoga intervention was developed by Meghan's Foundation,[24] which adopted its trauma-sensitive protocol from Warriors at Ease (http://warriorsatease.org/). Similar to typical yoga classes, the practice includes flowing movements of postures synchronized with the breath. However, this trauma-sensitive, military-tailored protocol ensures that the yoga is taught in a safe environment that reduces potential trauma triggers for veterans. For example, many traditional yoga classes use Sanskrit words to describe the poses and play Indian or exotic music. As these may evoke memories of Middle Eastern deployment among post-9/11 veterans, all instructions and pose names are given in English, and music, if used, is Western. In many regular yoga classes, instructors physically touch the students to assist them in their poses. However, all hands-on adjustments or assists are avoided to ensure the veterans are comfortable and not startled or offended. Seated and supine meditation are usually done with closed eyes, but in military-tailored yoga the students are given the option to leave their eyes open. Finally, the intervention was led by a veteran of U.S. military operations in Iraq and Afghanistan who was trained in this Meghan's Foundation/Warriors at Ease protocol.

Completers of the intervention attended at least five 60-minute weekly yoga sessions in 6 weeks. Participants who completed the yoga intervention realized statistically significant reductions in PTSD symptoms, anxiety, and depression and significant improvements in sleep quality and mindfulness.[23] However, the study was challenged by sample recruitment. Although 52 veterans (from Operation Iraqi Freedom, Operation Enduring Freedom, or Operation New Dawn) with combat-related PTSD symptoms inquired and were verbally informed about the study, 19 decided not to participate. Another 10 were excluded because their PTSD Checklist-Military (PCL-M) scores were less than 30, suggesting that their PTSD symptoms were not clinically significant. Of the 23 veterans who consented and met eligibility criteria, another five dropped out. Thus, we were interested in understanding more about the reasons veterans were and were not attracted to the yoga intervention.

The purpose of the present qualitative study was to examine the perceived benefits of and barriers to participating in this military-tailored, trauma-sensitive yoga intervention. We wanted to hear veterans' stories about how yoga helped them, why they joined and stuck with a yoga intervention, and why some dropped out or declined to participate. We hoped that themes from these stories would provide relevant information to the DoD and the VHA on how yoga could be made more attractive to veterans and service members. Ethics approval was received from the Institutional Review Board at the University of Hawai'i at Mānoa.

Methods

The sample for this qualitative study was accrued from those veterans who expressed interest in the quantitative test of a yoga intervention on PTSD symptoms.[23] This sample was recruited through veteran service organizations (VSO) such as the Wounded Warriors Project; Team Red, White, and Blue; and the O'ahu Veterans Center. The inclusion criteria for the yoga intervention were Middle East–operations veterans with combat-related PTSD symptoms who scored 30 or higher on the PCL-M.[25] At the time of recruitment into the quantitative yoga study, participants were informed about a follow-up qualitative study.

For the qualitative study, the participants from the quantitative study were purposively sampled to include some who completed the intervention and some who dropped out after completing only one or two sessions. Interviews were conducted until thematic saturation was reached, which was with nine individuals, five of whom completed the intervention and four who did not.

The Health Belief Model guided the development of interview questions. This model prompts researchers to identify the barriers, benefits, and cues to action related to a specific health behavior.[26] Some interview questions were identical and some differed for those who completed the intervention versus those who did not. For example, both groups were asked about health conditions that may benefit from or be made worse by yoga practice, but completers were also asked to talk about specific physical, mental health, and other benefits experienced since starting yoga.

Semi-structured, open-ended interviews lasted 30 to 40 minutes and were conducted from November 2016 to January 2017. After written consent, the interviews took place in the participant's home or a public place, such as a coffee shop or library. Participants were given a $5 Starbucks gift card in appreciation of their participation. Interviews were audiorecorded (with consent), transcribed

Table 1. Open-Ended Questions for Yoga Intervention Completers and Noncompleters *(Differing Questions)*

	Questions for Completers	Questions for Noncompleters
Warmup	• How many military-tailored yoga sessions have you attended? • What is your definition of yoga? • *What other yoga classes have you attended?* • *Where do you practice yoga?* • *What did you expect when you started to practice yoga?*	• How many military-tailored yoga sessions have you attended? • What is your definition of yoga?
Starting Yoga	• How does one make the decision to start yoga? • What makes someone continue to practice? • *What was it like for you when you started out?* • *What are the most important parts or components of yoga for you?*	• How does one make the decision to start yoga? • What makes someone continue to practice?
Perceived Benefits	• What health concerns might yoga help? • What health concerns might yoga not help or make worse? • *What physical, mental health, or other benefits have you seen from yoga?* • *How does yoga help you with specific health concerns?* • *What changes in your behavior have people noticed since you started yoga?* • *How do you compare military-tailored yoga to other styles of yoga? What do you like? What do you not like?*	• What health concerns might yoga help? • What health concerns might yoga not help or make worse? • *What physical, mental health, or other benefits from yoga have you heard about?*
Perceived Barriers	• Why do you think some service members or veterans do not want to practice yoga? • What expenses do you associate with yoga? • *Has yoga ever aggravated any symptoms or health-related issues for you?*	• Why do you think some service members or veterans do not want to practice yoga? • What expenses do you associate with yoga? • *What are some reasons why you do not want to practice yoga?*
Closing	• Do you have any other thoughts about yoga that you would like to share?	• Do you have any other thoughts about yoga that you would like to share?

verbatim, and analyzed for themes related to benefits, barriers, and motivations to start and continue participation in yoga.

After the interviews were transcribed, a descriptive thematic content analysis was conducted to examine patterns across all of the veterans' interviews.[27] This analysis was conducted in five phases:

1. familiarization with the data, with the authors reading and re-reading the transcripts to become immersed in the data;
2. coding the data by bolding the text that captured a key thought;
3. searching for themes from the codes to identify broader patterns;
4. reviewing the themes to see how they could answer the research questions; and
5. defining and naming the themes.

Results

Nine participants were interviewed for this study, five of whom completed the yoga intervention and four who did not. All participants were military veterans between the ages of 22 and 52, with a mean age of 37. All were veterans of a post-9/11 conflict, and the mean age of the participants at their first deployment to Iraq or Afghanistan was 25. The youngest was deployed as an enlisted private in a tank unit, whereas the oldest was a first sergeant of an infantry unit. The completers of the yoga intervention were, on average, 4 years older than the noncompleters. Eight participants were male and one was female, with the only female being a noncompleter of the intervention. Three of the participants interviewed identified as Hispanic/Latino, two as Asian, two as Caucasian, and one as Native Hawaiian/Pacific Islander. Participants had mild to moderate PTSD, which was established by a PCL-M score of 30 or higher.

Three main themes were identified for perceived benefits of practicing yoga, and two were identified for perceived barriers to participating. The perceived benefits themes were

- finding stillness (mental well-being; mentioned by 9 of 9 participants);
- body awareness (physical well-being; mentioned by 7 of 9 participants); and
- social connection (social well-being; mentioned by 5 of 9 participants).

The perceived barrier themes were

- socially unacceptable (mentioned by 9 of the 9 participants); and
- physically unchallenging (mentioned by 5 of the 9 participants).

Perceived Benefit 1: Finding Mental Stillness

All nine participants (including those who discontinued practice) discussed how the yoga intervention helped improve their mental well-being. The veterans discussed how the yoga practice was calming and how they were able to quiet their mental chatter. Quotes that illustrate this theme follow.

> Yoga helped me find my center. I was able to take my mind off of everything. The physical part was nice to increase flexibility; but really what helped was to manage what was going on in my head.

> After [a] yoga session, I was not as quick to get angry. Yoga helped me to identify my anger triggers. I was able to look inward and ask myself, "Why did that just trigger me to get mad?" I have time to process before reacting.

> Yoga helped my mind relax. Especially practicing on a weekday, I was able to finish the week with a fresh mind. Before yoga I was only able to unwind on the weekends, but now I look forward to yoga to help unwind.

> Off the mat, I am able to prioritize things because I am able to focus on the task at hand.

Perceived Benefit 2: Body Awareness

Seven of the 9 participants (5 completers and 2 noncompleters) reported that the physical practice of yoga supported a healthy mind-body relationship. This new sense of body awareness allowed veterans to connect with their bodies differently than before. These quotes illustrate benefits of growing body awareness among participants:

> I became more tolerant of being uncomfortable. When I am working out doing other physical activities, I don't notice how my body feels. I just push through it. Yoga helped me stay in tune with my body even off the mat. I am able to notice where in my body I am feeling pain.

> Once I started yoga, I saw physical health benefits such as increased flexibility and weight loss. I noticed I had better range of motion than I had in years, and I started to feel more mobile.

> Yoga has helped me bring awareness to different parts of my body. So I learn more about myself and how my body reacts to different yoga poses that I might not notice before with other forms of physical activities.

Three of the nine veterans (all completers) specifically discussed how they were able to focus on stretching their lumbar region to help ease back pain. These three participants were all over the age of 35 and had done at least two combat tours.

> Flexibility was one of the best benefits of the yoga class. From carrying military equipment and wearing Army gear, my lower back started to act up, and I would get back spasms. The yoga sequence would help alleviate some of the lower back pain.

> My chronic pain disappeared after morning yoga. I wish I did this when I was serving, because in the infantry I had to do a lot of ruck marches and put a lot of miles on my feet, and my back had to carry all that extra weight of a rucksack. I suffer from chronic low back pain and, after doing yoga in the morning, I realized my back pain was gone for that day. If I did yoga through my military career, I wouldn't be as broken as I am now.

> Yeah, if I would have worked on recovery and flexibility, I would have saved my knees and back. It is like doing preventive maintenance on a vehicle or a weapon. You clean your weapon to have longevity, and you need to do the same thing on your body so that it will work for longer periods of time. My back pain has eased some when I include yoga in my weekly practice.

Perceived Benefit 3: Social Connection

Five of the nine veterans (all completers) discussed how PTSD symptoms can be isolating due to emotional and physiological struggles. They reported that having the opportunity to be around other veterans with PTSD helped them feel socially supported. These veterans noted that yoga

was different from a PTSD support group in which participants discuss their combat experiences. In yoga, they did not discuss the cause of their PTSD, but knowing that others in the room had been through similar experiences helped them to feel included and comfortable.

> Knowing other people in the class have similar background helps out a lot, especially that first time of trying yoga. I do not see myself going to a yoga studio or yoga class if the students are not veterans.

> I think being vulnerable is hard for veterans. . . . Knowing you can be in a safe space that is open to other military veterans will help allow other veterans to practice yoga.

> I struggle with symptoms of being hypervigilant and isolating myself. The yoga group helped me to connect with others and helped me with my isolation symptoms. Yoga is individual, but when coming to a military-tailored yoga class, that connection part can help with the isolation symptoms. This is something that you cannot get if you just go to a regular yoga studio class that is not tailored to the military.

Perceived Barriers: Socially Unacceptable and Physically Unchallenging

The two commonly expressed barriers, identified in all nine interviews, were the perceptions that yoga is socially unacceptable for veterans and physically unchallenging. When asked why veterans would not want to practice yoga, many discussed how the culture of the military is still a very macho world.

> Many veterans may not want to practice yoga for two reasons. [The] number one reason is that yoga is for women, and the second reason is that you will not get anything out of it. Many service members and veterans want to be physically pushed, and they might not think yoga can do that.

> Some veterans think that you have to be an expert to do yoga, and you have to be perfect. They are also worried about the stigma. Most people who do yoga on TV or in movies are females or hipsters who wear yoga pants. People are scared to get labeled and put in that category. People in the military . . . are [supposed] to be tough. But if you are walking around with a yoga mat . . . people won't think you are tough.

> My first thought of yoga was hippies. When my friend asked me to join him in yoga, I thought he was crazy. There is no way I can fit inside tight pants with my junk exposed. I think yoga is a very feminine movement, and guys cannot get past that.

> The main reason is because yoga has been looked at NOT as a physical activity. In the military, we are a physical culture—running, lifting weights—and the mindset of veterans and service members going to yoga is it will not be physical enough for us.

> Yoga is about being open, and this is the hardest part for veterans . . . to be able to be vulnerable. I feel like if we can make it part of our daily routine, it can help improve resiliency and mental and physical health. I think being vulnerable is hard for veterans. We wear body armor and we need to stay vigilant. So then in yoga we are told to relax and focus inward. That is hard to grasp for some.

Discussion

The qualitative study provides insight into the benefits and barriers of participating in yoga. Some findings were as expected, but others provide new insight into how yoga can help veterans with PTSD. Assessing the benefits and barriers of yoga is crucial, as many veterans are using yoga and other CAM therapies on their own to help treat their PTSD symptoms and because yoga and other mind-body therapies have been found to reduce PTSD symptoms.[23,28] The qualitative analysis revealed three major benefits and two barriers to practicing yoga in the veteran community.

Learning mindfulness techniques by being present in the yoga practice allowed many veterans to shift their negative mental chatter to the present moment. As found in the literature, yoga can reduce symptoms of PTSD, anxiety, and depression.[28] Yoga may help reduce stress and anxiety by affecting autonomic nervous system (ANS) activity.[29] The ANS has two major components: the sympathetic nervous system (SNS; fight, flight, or freeze), and the parasympathetic nervous system (PNS; rest and digest). Many studies have shown that veterans with PTSD have an imbalance of these two systems and have increased SNS activity.[30]

The more surprising findings were the many physical benefits found during this qualitative study. For example, three participants reported that yoga participation reduced their lower-back pain. More attention is being paid globally to nonpharmacological approaches to reducing back pain. A recent literature review found evidence supporting the effectiveness of tai chi, mindfulness-based stress reduction, and yoga in treating chronic low-back pain.[31] The American College of Physicians now recommends starting with nonpharmacological treatments, such as yoga, for

chronic lower-back pain over pharmacological treatment.[32] Approximately 23% of veterans of post-9/11 conflicts and 35% of those with traumatic brain injury receive opioid medications, and back pain is the most common reason for being prescribed pain medication.[33]

Another unexpected benefit was the social connections made in the class. Isolation is a common experience of many veterans with PTSD. The yoga class allowed these individuals to come together and to connect with other like-minded veterans. This helped decrease isolation symptoms and allowed for the participants to be more comfortable with trying something new. As some of the participants expressed, just knowing that all the people in the class, including the instructor, were veterans of a recent Middle East conflict made them feel included. The support of the participants and yoga teacher allowed the environment to feel safe, which facilitated a sense of connectedness with others. Feeling connectedness, or a sense of oneself in the world, is associated with mental wellness. It has been suggested that connectedness is more powerful then direct social support in predicting depression and self-esteem.[34] Other researchers are exploring and documenting the effect of yoga and feelings of connectedness in other populations, for example, women with major depression.[35]

Unfortunately, the two identified barriers were not surprising. All nine veterans associated yoga with being a feminine rather than a masculine activity. Statistics concur, demonstrating that the average lifetime yoga practitioner is a young or middle-aged, college-educated female living in the West.[36] Every monthly cover of the magazine *Yoga Journal* in 2016 featured a young female. As yoga practitioners are seen as female, veterans are seen predominantly as male. Men comprise about 85% of all veterans, with about 94% utilizing VHA benefits.[37]

The second barrier to yoga participation was that respondents did not believe yoga was a rigorous physical activity, which most service members desire. Yoga is considered a light-intensity physical activity. Only a few common sequences, such as sun salutations, meet the criteria for moderate to vigorous activity.[38]

These barriers, benefits, and motivators can be helpful to the DoD and VHA to identify ways to increase participation in yoga (cues to action) and to overcome barriers to participation. For example, letting service members know that the trauma-sensitive yoga program was developed by Warriors at Ease could help reduce the perception that yoga is only for females. Some styles of yoga and some yoga poses are more physically demanding than others, and these can be woven into an intervention for service members and veterans. This could help remove the stigma that yoga is not physically challenging.

Understanding that veterans perceive a number of benefits of yoga can inform yoga instructors on how to reach this vulnerable population. For example, primary care and mental health providers at the VHA or DoD can be educated about the benefits of yoga for reducing PTSD symptoms and improving mental well-being and social connectedness and encouraged to integrate yoga into service members' or veterans' treatment plans. Providers at VHA or DoD pain clinics and physical therapy departments can be educated

Table 2. Suggested Cues to Action

Motivators	Cues to Future Action
• Mental health concerns: PTSD symptoms, work stress (mental well-being)	• Work with behavioral health providers, primary care providers, and operation-specific support groups to refer participants
• Physical health concerns: back pain, limited mobility (physical well-being)	• Work with back-pain clinics and physical therapy departments to recommend and prescribe yoga
• Peer encouragement (social well-being)	• Encourage each participant to bring a veteran friend; work with different VSOs to recruit groups
Barriers	**Methods to Overcome Barriers**
• Yoga is only for women	• Use Warriors at Ease protocol, which is tailored to the military • Train active-duty military and veterans as yoga instructors • In promotional materials, feature male service members performing yoga with captions related to resiliency, self-sufficiency, and readiness
• Yoga is not physically challenging	• Include and publicize the physically challenging elements of yoga protocols • Emphasize that body awareness and flexibility can improve physical performance

about yoga's effectiveness in reducing chronic back pain and encouraged to prescribe yoga as a nonpharmacological intervention. This may be especially attractive to providers given the dramatic increase in opioid abuse and deaths in the United States.[39] Disseminating information on the benefits of yoga to medical and behavioral health providers working with veterans could increase their willingness to refer clients to, or even to "prescribe," yoga.

Understanding the perceived benefit of interconnectedness between veterans may support expansion of veteran-only yoga groups. This conclusion is supported by a qualitative study of 23 veterans with PTSD, in which participants felt positively about peer-support interventions, especially interventions segregated by trauma type and era of service.[40] Those authors found that veteran-anticipated benefits of peer-support interventions included social support, normalization of symptoms, and increased initiation and adherence to adjuvant treatment.

Educating VSOs about this aspect of yoga could encourage them to refer veterans to veteran-focused yoga classes as a way to reduce feelings of isolation and increase interactions among veterans outside of counseling and support groups. Veterans who find benefit in yoga can be encouraged and perhaps incentivized to bring friends to class. Social opportunities, such as bringing a friend, have been used as an effective retention strategy for community health programs. This effort might help veterans connect with others and feel safe without fear of being judged negatively during the yoga session.[41]

To overcome the perception that yoga is for females, more males should be trained as yoga instructors, especially those who are themselves service members and veterans. Integrating yoga into military fitness routines would also help to normalize yoga as a beneficial form of physical activity.

Our findings also can inform the development of promotional materials for yoga in this population. For example, messaging could note specific desirable health benefits, such as reduced back pain and risk of injury and improved body awareness, flexibility, range of motion, and athletic performance.[42,43] Promotional materials can feature male service members and veterans, with captions related to yoga as a way to increase resiliency, self-sufficiency, and physical and mental mission readiness.

Limitations

The present study was limited in that the sample was small, although thematic saturation was achieved. Also, it is not unusual for interviewees to provide socially desirable answers to research questions, especially when the interviewer also led the intervention. In this study, the intervention was conducted by a female veteran, who also conducted the qualitative interviews. Future research should use interviewers who are not also delivering the intervention. More research is needed to evaluate how yoga can help veterans and service members with PTSD and ways in which this intervention can be institutionalized within the military. For example, future studies should test the relative attractiveness of different recruitment images and messages. Research is needed on the type and amount of training needed to increase referrals to yoga by providers of primary care, mental health, and pain-management services, as well as by VSOs. Research is needed on ways to integrate yoga into the requisite physical activity routines of service members and to increase the number of male instructors, especially from active-duty and veteran populations. This study touched on the importance of interconnectedness, and measuring this in future studies can provide insight as to how powerful this perception might be in the healing process of veterans suffering from PTSD or chronic pain.

Conclusions

This qualitative study of completers and noncompleters of a 6-week military-tailored, trauma-sensitive yoga intervention identified physical, mental health, and social benefits of participation in yoga. The study also identified two overlapping barriers. Education and marketing strategies are recommended to emphasize the benefits of yoga and overcome identified barriers to increasing service member and veteran participation in yoga.

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Conflict-of-Interest Statement

The views expressed in this article are those of the author and do not reflect the official policy or position of the Department of the Army, Department of Defense, or the U.S. Government. The authors have no financial relationships, patents, copyrights, or relationships that could have influenced the content of the submitted work.

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