Therapeutic Recreation Journal
Vol. LIV, No. 2 ▪ pp. 150–172 ▪ 2020
https://doi.org/10.18666/TRJ-2020-V54-I2-9965

Qualitative Paper

The Transformative Nature of Fly-Fishing for Veterans and Military Personnel with Posttraumatic Stress Disorder

Patti J. Craig
Dustin M. Alger
Jessie L. Bennett
Tamar P. Martin

Abstract

Grounded in the leisure-coping framework (Kleiber et al., 2002; 2008), this phenomenological study utilized a focus group method to explore the meaning of fly-fishing for veterans and military personnel with PTSD. This study also explored ways in which fly-fishing may serve as a coping resource in transcending negative life events, such as PTSD, as it helps move veterans and military personnel toward personal transformation and posttraumatic growth (PTG). A total of nine participants from the Project Healing Waters Fly-Fishing program participated in two focus groups to understand how fly-fishing impacts PTSD symptom management and to identify aspects of the program that may be responsible for symptom reduction and growth among this population. Four themes emerged from the data, suggesting fly-fishing: (a) serves as a breather from the negative impact of PTSD, (b) sustains coping effort and commitment, (c) restores control by alleviating PTSD symptoms, and (d) can serve as a context for personal transformation and posttraumatic growth. Implications for practice are provided.

Keywords

Complimentary and integrative health, fly-fishing, nature-based recreation, posttraumatic stress disorder, posttraumatic growth, stress-coping theory, veterans and military personnel

Patti J. Craig is an associate professor in the Department of Recreation Management and Policy at the University of New Hampshire.

Dustin M. Alger is in the Residential Substance Abuse/Post-Traumatic Stress Unit at the Boise Veterans Affairs Medical Center (VAMC) in Boise, Idaho.

Jessie L. Bennett is an assistant professor at the University of New Hampshire.

Tamar P. Martin is a counseling psychologist and certified rehabilitation counselor in private practice in New York City, NY. She is also an adjunct instructor at Hunter College, CUNY, Programs in Counselor Education, and at New York University, Department of Applied Psychology, New York City, NY.

Please send correspondence to Patti J. Craig, pjcraig@unh.edu

Introduction

Since 2001, the United States (U.S.) has been engaged in the Global War on Terror, with over 2.77 million service members serving overseas (Wenger, O'Connell, & Cottrell, 2018). Approximately 1.6 million service members have experienced multiple deployments with shorter rest periods in between, and have been exposed to the extreme stressors of combat, including roadside bombs, suicide bombers, and human death and violence which led to increased risk for posttraumatic stress disorder (PTSD) and major depression (Burnam et al., 2009). Further, over 50,000 troops from the Global War on Terror have experienced severe combat injuries such as limb loss, spinal injury, blast injuries, traumatic brain injury (TBI), depression, generalized anxiety disorder, and PTSD (Defense Casualty Analysis System, 2017). With the extreme forces used in combat and the resulting physical and psychological trauma, it is logical that PTSD remains a significant health concern for veterans, military personnel, and their families (Institute of Medicine [IOM], 2014).

According to the U.S. Department of Veterans Affairs (VA) and the Department of Defense (DoD) (VA & DoD, 2017), approximately 10.6% of all veterans receiving care in the Veterans Health Administration have a diagnosis of PTSD. The estimated cost of PTSD treatment is staggering; for example, in 2012 alone, the VA spent $3 billion, and the DoD spent $294 billion in the treatment of PTSD (IOM, 2014). These statistics suggest PTSD is a prevalent, debilitating, and costly condition for veterans and military personnel (National Academies of Sciences, Engineering, & Medicine, 2018).

PTSD is the emotional disorder most frequently associated with combat and other potentially traumatic experiences that may occur during military service, such as military sexual assault (Strauss et al., 2011). PTSD is an extreme response to a traumatic event that is characterized by a combination of mental health symptoms that are present for at least one month and impair functioning across multiple domains (American Psychological Association [APA], 2017). Diagnostic criteria include: (a) intrusion or re-experiencing of a traumatic event, (b) avoidance of trauma-associated stimuli, (c) alterations in cognition and mood, and (d) alterations in arousal and reactivity (APA).

PTSD is associated with significant adverse consequences for veterans and military personnel, including high rates of depression and other psychiatric comorbidities, substance abuse, suicidality, impaired social, occupational, and family functioning, decreased quality of life, and increased rates of medical morbidity, health risk behaviors, and health service use (Giordano et al., 2018). Left untreated, veterans and military personnel with PTSD are at risk for a lifetime progression of increasing functional disability, psychological distress, and poor quality of life (Fulton et al., 2015).

The VA and DoD (2017) provide a spectrum of treatment approaches including individualized, trauma-focused and non-trauma-focused psychotherapies, as well as pharmacologic agents. Although shown to be viable options during the initial stages of treatment, these approaches have not demonstrated consistent long-term clinical effects (Poulsny et al., 2015), as many patients still have diagnosable PTSD following treatment (Steenkamp et al., 2015). Further, because many trauma-focused psychotherapies require engagement in repeated conversations and imagery related to traumatic events, many patients prefer to try other strategies (Markowitz et al., 2016). Thus, an exploration of ways to supplement existing treatments, reduce barriers to engagement in treatment, and provide alternative treatment options for individuals with PTSD is

needed. Complementary integrative health (CIH) approaches, such as nature-based recreation, can be viable supplemental treatment options, as they leverage individual interests and motivations for sustained and engaged participation (National Center for Complementary & Integrative Health [NCCIH], 2015).

As nature-based approaches have gained popularity across a variety of disciplines, therapeutic recreation (TR) practitioners have used nature-based interventions and activities to address functional outcomes and provide recreation opportunities for veteran and military populations with PTSD (Hawkins, Towsend, & Garst, 2016). Multiple types of nature-based approaches, such as outdoor adventure therapy, wilderness therapy, outdoor experiential therapy, and eco-therapy utilize the natural environment for specific therapeutic outcomes (Poulsen, Stigsdotter, & Refshage, 2015). Although this line of research is in its infancy, preliminary evidence suggests that nature-based recreation approaches merit continued investigation to evaluate efficacy and implementation within the VA, DoD, and community-based TR and recreation settings serving veterans and military personnel (Townsend et al., 2018). The purpose of this phenomenological study was to explore the meaning of fly-fishing for veterans and military personnel with PTSD, and to understand how fly-fishing may serve as a coping resource for this population.

Literature Review

Conventional PTSD Treatment Approaches

Within the VA and DoD (2017), preferred first-line treatments for PTSD are individual, trauma- and non-trauma-focused psychotherapies, and pharmacological approaches. Trauma-focused psychotherapy uses cognitive, emotional, or behavioral restructuring techniques to facilitate the processing of a traumatic experience (e.g., prolonged exposure therapy, cognitive processing therapy, eye movement desensitization and reprocessing, brief eclectic therapy). Non-trauma-focused psychotherapies include stress inoculation therapy, present-centered therapy, and interpersonal psychotherapy (VA & DoD). In pharmacotherapy, medications referred to as "cognitive enhancers" are used in conjunction with trauma-focused therapies to enhance psychological interventions (National Center for PTSD, 2019, p. 1). Although efficacy of these conventional approaches is widely reported in the literature (Foa et al., 2009; VA & DoD), between 30%-50% of participating veterans fail to show long-term clinically significant improvements (Poulsny et al., 2015). Further, participant dropout is high, ranging from 30%-38% in randomized trials and 32%-44% in clinic-based studies, likely due to difficulty tolerating trauma-focused material that are hallmarks of these approaches (Poulsny et al., 2015).

Complementary and Integrative Health Approaches

Given the challenges associated with conventional PTSD treatment methods, an exploration of CIH approaches that can interrupt undesirable symptoms of PTSD is warranted and, thus, has emerged as a top priority for the VA and DoD (NCCIH, 2015). Complementary health approaches are a group of diverse medical and health systems, practices, and products that are not considered to be part of conventional medicine, but rather are used in conjunction with conventional therapies (NCCIH, 2015). Integrative approaches are a style of practice that places a strong emphasis on a holistic ap-

proach to patient care while focusing on reduced use of technology (NCCIH). CIH approaches are typically noninvasive or minimally invasive, considered unlikely to result in negative side effects, and may be more aligned with individual treatment preferences and interests than conventional treatment options (Strauss et al., 2011).

Emerging CIH approaches for veteran and military populations include modalities such as mind-body medicine (e.g., meditation, mindfulness-based stress reduction, yoga, acupuncture), the use of natural products (e.g., dietary supplements, herbal remedies, probiotics), manipulative and body-based practices (e.g., massage therapy, spinal manipulation), whole medical systems (e.g., traditional Chinese or Ayurvedic medicines), technological-based treatments (e.g., internet and computer-based treatments, virtual reality) and other practices (e.g., light or magnet therapy, movement therapies) (Cukor et al., 2009; NCCIH, 2015). Although the VA and DoD are invested in developing better ways to assess, manage, and treat PTSD through CIH approaches, evidence of their effectiveness is limited (Strauss et al., 2011).

Complementary approaches such as nature-based recreation have long been recognized for their therapeutic benefits and potential for instilling personal agency, and facilitating healing among a variety of populations (Berman, Jonides, & Kaplan, 2008; Gelkopf et al., 2013; Kaplan & Kaplan, 1989; Walsh, 2011). Further, there is a growing evidence base in TR for the efficacy of nature-based recreation in facilitating functional outcomes and symptom reduction for veteran and military populations with PTSD and comorbid conditions (Bennett, Piatt, & Van Puymbroeck, 2017; Duvall & Kaplan, 2013; Hawkins et al., 2016; Price et al., 2015; Rogers, Loy, Brown-Bochicchio, 2016). However, none of this literature explores the processes through which nature-based recreation can help veterans and military personnel cope with PTSD. This study attempts to fill this gap.

Stress and Coping

The influence of Lazarus and Folkman's (1984) transactional theory of stress and coping is the cornerstone of psychological stress and coping research across multiple fields and disciplines, including leisure studies (Iwasaki & Schneider, 2003). According to Lazarus and Folkman, stress is defined as exposure to stimuli appraised as harmful, threatening, or challenging, that exceeds an individual's capacity to cope. The primary features of the theory are cognitive appraisal and coping, which are said to co-occur. The individual is constantly appraising stimuli within their environment. This cognitive appraisal process generates emotions, and when stimuli are appraised as threatening, challenging, or harmful (i.e., stressors), the resulting distress initiates coping strategies to manage emotions or attempt to directly address the stressor itself. Thus, coping is viewed as process-oriented and dynamic, and involves conscious, purposeful actions employed when an individual appraises a situation as stressful.

Emotion-focused coping regulates emotions associated with stress without attempting to change the situation itself and is largely a matter of finding ways to survive the pain and/or avoid thinking about the threat of the stressor (Lazarus & Folkman, 1984). In the context of this study, veterans and military personnel who have PTSD may utilize a diverse range of emotion-focused strategies such as denial, avoidance, minimizing, distancing, and/or regulating one's emotions by "pulling up one's boot straps" or discharging emotions through outbursts, venting, or crying (Benedek & Wynn, 2016). Problem-focused coping is when the individual tries to define the prob-

lem, find solutions, and consider alternative courses of action (Lazarus & Folkman, 1984). Changes can be made to the environment or through a cognitive reappraisal of an individual's goals and behaviors. In the context of this study, veterans and military personnel with PTSD may use problem-focused coping when re-evaluating their life goals or avoiding environments that trigger thoughts or feelings of the negative event (Benedek & Wynn, 2016).

Role of Leisure in Coping

Research on the role of leisure in the stress-coping process has received renewed attention in the last three decades (Chang & Yu, 2012; Denovan & Macaskill, 2017; Iwasaki, 2006; Iwasaki, Mactavish, & MacKay, 2005; Iwasaki & Mannell, 2000; Iwasaki & Schneider, 2003; Kleiber, Hutchinson, & Williams, 2002; Kleiber, Reel, & Hutchinson, 2008). In contrast to necessary daily tasks, routines, and work obligations, leisure is defined as free time individuals have at their disposal, and they can utilize this time at their own discretion and in their own characteristic style (Russell, 2017). Experiences and activities people choose to engage in during leisure time for enjoyment, excitement, and pleasure are referred to as recreation.

Among various types of coping resources and strategies, leisure researchers propose that leisure can be a means through which people cope with stress and maintain or improve their health (Iwasaki & Schneider, 2003). However, the mechanisms through which leisure activates the stress-coping process are understood in different ways. According to Iwasaki (2006), stress-coping research has historically focused on the effectiveness of coping sources that regulate distress but have largely underrepresented the ways in which pleasurable affect can impact the stress-coping response

. This study draws upon one such conceptualization that suggests leisure may be a mechanism through which long-term adjustment to major negative life events can occur, rather than just simply as a vehicle for coping with immediate or daily stressors. Building upon Lazarus and Folkman's theory, Kleiber and colleagues (Kleiber et al., 2002, 2008) propose four major functions of leisure in transcending negative life events. Two of these functions deal with leisure as ways of coping for self-protective devices (breathers, sustainers), while the other two functions (restorers, personal transformation) consider leisure as a means of adjustment to negative life events. The restorer and personal transformation functions emphasize the role of leisure in restoring one's valued self that is continuous with the past, as well as in transforming oneself to grow by finding new opportunities and perspectives (Kleiber et al., 2008). In these ways, leisure can be an effective coping resource as it can create stability and control for those who have experienced a negative life event by reducing, deflecting, and managing emotional distress, and infusing positive emotions into the situation.

In the wake of combat trauma, leisure may help veterans and military personnel with PTSD find new meanings and directions in life. The role of leisure as a vehicle for positive transformation of self while experiencing stressors is crucial for this population as they attempt to adjust to their lives after injury. This is known as posttraumatic growth (PTG), which is defined as "a self-regulatory mechanism connected to one's innate biological tendency toward protection from the distress caused by stress, adversity, and crisis" (Mikal-Flynn, Anders, & Hoffman, 2018, p. 271). PTG can serve as a protective resource against the harmful health effects of combat exposure or symptoms of PTSD (Jankowski & Bell Vargas, 2019). For example, the trauma of war may

negatively impact social identity among veterans and military personnel, resulting in confusion about their understanding of the world around them, and their place within that world. For PTG to occur, trauma survivors must rebuild their assumptions about the world around them, which starts with a re-evaluation of the self (Calhoun & Tedeschi, 2001). The restorative qualities of leisure in this process, specifically activities that utilize the outdoor environment, are well supported in the literature (Tidball & Krasny, 2007; Walsh, 2011).

Nature-Based Recreation as a Resource in Coping

Recreation activities are the conduit through which individuals experience leisure. Nature-based recreation can be a unique form of meaningful leisure that can assist with both emotion-focused and problem-focused coping by using the natural environment to help individuals overcome sources of anxiety, reduce stress, and reinstate feelings of reward and pleasure (Tidball & Krasny, 2007). Among non-military populations, interventions in natural settings have shown enhanced physical, social, and mental health outcomes, including "greater cognitive, attentional, emotional, spiritual, and subjective well-being" (Walsh, 2011, p. 584). Several studies examining the efficacy of veteran-specific nature-based modalities such as fly-fishing (Alexander, 2017; Bennett et al., 2017; Mowatt & Bennett, 2011), river running (Dustin et al., 2011), outdoor recreation/adventure therapy (Vella, Milligan, & Bennett, 2013), and equine-assisted activities (Lanning & Kreneck, 2013) have shown promise in improving mood, psychosocial health, and quality of life, and reducing PTSD symptoms among individuals with service-connected disabilities.

Fly-fishing is a growing nature-based recreation approach being used across the U.S. to help veterans and military personnel cope with symptoms of PTSD. Within the last decade, community-based organizations such as Project Healing Waters Fly-Fishing (PHWFF), Rivers of Recovery, Fly'n Heroes, Fly Fishing for Vets, Veteran's First Fly Fishing Club, and others have recognized the therapeutic benefits of fly-fishing for this population, and have established local and national programs that provide pleasurable recreation experiences. These recreation programs are typically run by administrative and/or professional staff and are supported by volunteers who are often former participants and/or those with fly-fishing expertise. TR professionals often partner with these community-based fly-fishing programs as they refer clients from the VA and DoD with whom they are working on individual rehabilitation plans (Rogers et al., 2016). Given the prevalence of PTSD among veterans and military personnel, the VA and DoD's interest in CIH approaches, and the growth of nature-based recreation programs, a study exploring the meaning of fly-fishing and its role in coping with PTSD is warranted.

Methods

A phenomenological method was used to elucidate a range of perspectives about fly-fishing among veterans and military personnel with PTSD who participate in the Project Healing Waters Fly-Fishing program (PHWFF). These perspectives provide depth and context to our understanding of the fly-fishing experience for this population, allowing underlying commonalities in meanings to be understood through the development of themes (Moustakas, 1994). Although participants share their own personal meaning of experience through language, to understand the commonality of meaning behind those experiences requires interpretation on the part of the research-

ers (van Manen, 1997). Using phenomenology as an empirical lens in this study allowed the researchers to access the complexity of participants' fly-fishing experiences and explore their perceptions of its role in coping with PTSD.

A common phenomenological data collection method is the individualized in-depth interview, which is designed to explore essential essence of phenomena (Webb & Kevern, 2001). While a focus group strategy is less common, and some would say "incompatible" with the underlying philosophy of phenomenology (Webb & Kevern, p. 800), Bradbury-Jones, Sambrook, and Irvine (2009) suggest focus groups are a relevant format through which "an individual lived experience can be preserved within a group context" (p. 667). They argue that focus groups within a phenomenological framework may actually be more beneficial than individual interviews because they stimulate discussion, open up new perspectives among group members, and are useful for clarification and cross-checking participants' responses in real time. Further, data are said to be enriched in focus groups as a result of hearing each other's stories to which group members can add their own perspectives and insights. Focus group discussions explore specific topics and participant opinions in a non-threatening environment, revealing not only what participants think, but also the reasons behind their attitudes and behaviors (Krueger, 1994). The group setting provides time for reflection while others are speaking, which can serve to validate the points as being shared experiences (Cote-Arsenault & Morrison-Beedy, 2001).

In this study, a focus group method within a phenomenological framework was used to collect data during the course of two naturally occurring PHWFF events involving veterans and active duty military personnel with PTSD in the northeast region of the U.S. Mini focus groups (Krueger, 1994) were used to accommodate a smaller number of participants, so that each participant had opportunities to contribute unique perspectives about their military experiences, their PTSD symptoms, and the meaning of fly-fishing in their lives.

Setting

The Project Healing Waters Fly-Fishing program (PHWFF) is a year-round, volunteer-led, nonprofit corporation dedicated to the physical and psychological rehabilitation of wounded active duty military personnel and veterans through fly-fishing, fly-tying education, fly-fishing trips that range from one to five days, and outdoor excursions (PHWFF, n.d.). The organization comprises 230 programs across the U.S. and relies on experienced volunteer fly fishers and guides from Fly Fishers International, Trout Unlimited, and independent fly-fishing clubs to conduct the program at VA Medical Centers, DoD Medical Centers, and Warrior Transition Units. Recreational therapists from inpatient units and outpatient clinics at VA Medical Centers and/or from community-based TR programs working with veterans and military personnel partner with PHWFF by providing patient referrals, supporting weekly sessions and fly-fishing expeditions, designing adaptive equipment, and assisting with access issues.

PHWFF provides classes and clinics on fly-fishing, casting, tying, and rod building for beginners and those with experience who are adapting their skills to their new abilities. Fly-fishing tackle, fly-tying materials and equipment are provided, including accommodations for those with specific needs. All services are provided at no cost to eligible participants. Participants include veterans and active guard and reserve military personnel with disabilities from all conflict eras. PHWFF attempts to create col-

laborative, cooperative, trusting and caring experiences to enhance community reintegration and quality of life by employing peer mentoring, experiential learning, outdoor education and group interactions. Nationwide, the program served 8,593 veterans and wounded military personnel in 2019 (PHWFF, n.d.).

Selection of Sample

This study was approved by the University's Institutional Review Board. Researchers used a criterion sampling procedure to invite veterans and military personnel with PTSD from PHWFF's northeast region to participate in focus groups. Participants were recruited based on four essential criteria: (1) were male and female adults who were either veterans, or active duty military personnel engaged in the medical separation process; (2) presented with a service-connected PTSD disability rating as diagnosed by the VA; (3) were participants in the northeast region of the PHWFF program; and (4) had previously completed PHWFF classroom and/or water environment sessions as "repeat" or new participants.

The PHWFF Northeast Regional Coordinator emailed a recruitment flyer to participants on the regional mailing list. Contact information from interested participants was forwarded to the second author, who then reached out to interested participants via email to share details regarding the purpose of the study, informed consent procedures, and logistics for the focus group meetings. Nine participants (two females, seven males) agreed to participate in the study.

Data Collection

Qualitative data were collected, including transcripts and field notes, from two separate focus groups. The second author, who is a veteran who has fly-fishing experience and personal knowledge of PTSD, conducted the focus groups and took field notes at the conclusion of each group. The focus groups took place during two separate, naturally occurring PHWFF program events. The focus groups were 90 minutes in duration, were audio taped, and later transcribed verbatim. The transcripts were mailed to the participants as a member check to verify the accuracy of their responses; none of the participants requested changes to or clarification in the transcripts. The focus group facilitator documented observations, impressions, and reflections at the conclusion of each focus group: These field notes were subsequently used to supplement data analysis. Pseudonyms were created to protect participant anonymity.

Instrumentation

The semi-structured focus group interview tool was designed to elicit discussion about the meaning of fly-fishing, and ways in which fly-fishing had influenced participants' ability to manage and cope with PTSD symptoms. The interview tool included 25 topical questions with probing follow-up questions as needed. Topics included, but were not limited to: (a) meaning of fly-fishing in participants' lives; (b) ways in which fly-fishing impacted function across physical, social, emotional/psychological, cognitive, and spiritual domains; and (c) perspectives about how fly-fishing influenced their coping processes. To address the issue of authenticity, the interview tool was developed through a literature review on the role of CIH approaches in the treatment of veteran and military populations with PTSD (Kearney et al., 2012; NCCIH, 2015; Tan et al., 2010). Further, the PHWFF Northeast Regional Program Coordinator, and a Program Leader from a regional PHWFF program not included in the study, reviewed the focus

group tool for relevance and accuracy, and their input was incorporated into the final interview tool, which was used across both focus groups.

Data Analysis

Analysis relied on focus group transcripts and supplemental field notes as discussed in the previous section. Four researchers independently reviewed each focus group transcript by reading and re-reading the text to gain an inductive understanding of "the whole," or what the data were suggesting. The researchers then independently coded the transcripts by breaking them down into manageable segments and identifying, labeling, and naming those segments. Researchers individually condensed those segments into descriptive categories based on valid inference and interpretation, and then met as a team over the course of six meetings to simultaneously define and refine the categories. Utilizing the constant comparative method (Glaser & Strauss, 1967), researchers compared and contrasted each new segment of data to the existing categories, and if the new coded data was an appropriate fit with an existing category, it was placed in that category. Conversely, if the new coded data was an inappropriate fit with an existing category, then the researchers either redefined a category or created a new category until all of the data were labeled. The researchers created a master codebook using Excel and conducted analysis within each focus group, and then between the two focus groups. Thematic findings represent pooled analyses between the two focus group cohorts.

Creswell and Creswell's (2018) primary verification procedures for credibility, reliability, and authenticity were employed, as the researchers thoroughly triangulated their descriptions and interpretations with each other during the analysis stage. This debriefing process enabled the researchers to utilize multiple perspectives and methods to corroborate the findings, which added credibility to the interpretation process. The salient categories that resulted from the constant comparative method led to the development of four prominent themes describing participant perspectives about the meaning of fly-fishing.

Findings

Participants

Participants included seven males and two females (n = 9) who ranged in age from 28-68 (M =47) and had between <1-5 years of experience (M =3) as a participant in the PHWFF program (see Table 1). The first focus group was conducted with five participants during a field trip to a fly-fishing vendor show in the northeast region of the U.S. The five participants (three males, two females) in this focus group were veterans from the Army (n = 4) and Marines (n=1) who served in Desert Storm, Post 9/11, and Vietnam conflicts. These five participants were familiar with each other through their involvement in an urban-based PHWFF group in the northeast region of the U.S. The second focus group was conducted during a fly-tying event that took place at a commercial outdoor business with four participants from a Military Transition Unit in the northeast region of the U.S. The four participants in this group were active duty military personnel from the Army (Post-9/11 wars) who were in the process of being medically separated from their units as a result of injury and, thus, they were less familiar with each other.

Seven of the nine total study participants held "Participant" roles in the PHWFF

program, and two of the nine held "Program Lead" roles, which means they served as volunteer leaders in a specific PHWFF group. The process of progressing from a "Participant" role to a "Program Lead" role happens over time. If participants are observed by other Program Leads to have innate leadership skills, strong commitment, dedication, and fly-fishing acumen, they are invited to serve as a "Deputy Program Lead" for a specified amount of time under the guidance of a Program Lead, before being assigned to lead their own group.

Table 1
Participant Profiles

Pseudonym	Gender	Age	Branch/Era	Time in Program	PHWFF Program Role
Laura	Female	53	Army (Desert Storm)	3 years	Participant
Yvette	Female	49	Army (Desert Storm)	3 years	Participant
Owen	Male	28	Army (Post 9/11)	1 year	Participant
Brent	Male	68	Marines (Vietnam)	5 years	Participant
Larry	Male	68	Army (Vietnam)	4 years	Participant
Elliott	Male	44	Army (Post 9/11) Active Duty	3 years	Participant
Roger	Male	38	Army (Post 9/11) Active Duty	2 years	Program Lead
Mack	Male	42	Army (Post 9/11) Active Duty	4 years	Program Lead
Johnny	Male	31	Army (Post 9/11) Active Duty	< 1 year	Participant

Thematic Findings

Four themes were constructed from the data, suggesting fly-fishing: (a) facilitates positive mood and buffers the negative impact of PTSD; (b) sustains coping effort and commitment by generating motivation and providing challenge; (c) facilitates healing by restoring control, fostering connections, and creating hope for the future; and (d) helps move participants toward personal transformation and posttraumatic growth.

Theme I: Fly-fishing Facilitates Positive Mood and Buffers the Negative Impact of PTSD

Free Self from Stress, Distraction/Diversion. A number of participants acknowledged the calming effects of fly-fishing on their anxiety symptoms and valued its influence on their ability to "decompress" from everyday stressors. For Larry, a 68-year-old Army veteran, fly-fishing provides a necessary respite from the stress of everyday life: "It helps you relax, to unwind…it puts you in a better frame of mind…it's just tranquil." Mack, a 42-year-old active duty soldier who was in the process of being medically separated from his Army unit, shared similar sentiments about the influence of the peaceful

fly-fishing environment on his mood: "It's hard to explain to people the tranquility of just being on a stream. It doesn't matter if I'm fishing, or just trying to see what kind of bugs are on the water; it's just that feeling of peace and quiet." Johnny, a 31-year-old who had recently medically separated from his Army unit, shared that fly-fishing helped distract him from ruminative thoughts, "A lot of people have problems with dwelling on the past. [Fly-fishing] gives me something to do…it keeps me occupied so I'm not thinking about that stuff on a daily basis. It helps relieve stress and its peaceful to me."

Positive Mood. This "quieting" characterization was prominent for participants in different ways. Yvette, a 49-year-old Army veteran who has been participating in the PHWFF program for three years, described the soothing feelings associated with the casting aspect of fly-fishing, noting: "It definitely helps me with my anxiety; just casting, alone in itself. And, just knowing, I've got to get better, I've got to go further…it's a soothing thing, it helps you just calm down within because you don't have to rush it." Owen, a 28-year-old Army veteran, shared his ability to transfer the peaceful feelings he experienced through fly-fishing to other life situations in which he felt anxious and out of control. He noted,

> I close my eyes and just remember the tranquility, the sound of the river, the light shining, and the fish fighting. When I'm in a place where I just want to smash everything, and I can't breathe, I just think of that and can hear the river again, it calms me down. The sounds of nature will calm you down, but I didn't know that, because most the time when I saw nature, we were blowing it up. But now it's a whole different ballgame.

For some, fly-fishing served as a substitute for medication, or helped reduce reliance on medication for symptom management. Brent, a 68-year-old Vietnam veteran, viewed casting and fly-tying as a substitute for his medication: "The stress immediately melts when you're casting. It's taught me a great deal. If I get uptight, I'll start tying flies at home, just like it's medication. It's my vice, my medication. I don't care if I even catch any fish." Owen described fly-tying as a more effective alternative for anxiety management than his prescribed medications,

> I take the maximum dose of medications you can take. But nothing calms me down more than tying something. I get these reactions where I start throwing up, I get dizzy, I just want to smash things or just want to lay down and sleep the rest of my life. But instead of popping a pill, I'll tie a copper john.

Mood Regulation and Expression of Feelings. For some participants, fly-fishing fostered an awareness of challenges associated with mood regulation, a common symptom of PTSD (APA, 2017). This was true for Yvette, who shared that fly-fishing helped her learn how to recognize and express her feelings, which led to self-reflection about her adjustment:

> I remember that black heart, where I couldn't go this way or that way. My family didn't understand me. Art helped me to express those feelings, but when I started fly-fishing, I was like THIS is for that. So with every cast, I am thinking about why my family is not understanding, and I wish they could see me now. It helped me to really talk through for myself.

Owen indicated that fly-fishing helped him recognize signs of emotional numbing, and helped him remember what it meant to feel good again: "It reminds me of what I'm capable of feeling like. You forget what is was like before, and then you are fishing on the river and you know what's possible again. It gives me the opportunity to peek at what I'm capable of feeling like all the time."

Theme II. Fly-fishing Sustains Coping Effort and Commitment by Generating Motivation and Providing Challenge

Participants described problem-based outcomes of fly-fishing in terms of being better able to manage their PTSD symptoms and being able to cognitively reappraise and restructure perceptions of stress. They described ways in which fly-fishing helped them sustain coping effort in the face of stress by generating motivation, introducing challenge, and developing new skills.

Improved Patience and Concentration. Fly-tying emerged as an important task through which participants were able to develop patience and concentration which they viewed as critical for stress management. For Elliott, a 44-year-old Army veteran, fly-tying was instrumental in helping him improve those key skills: "When I first got back from Iraq, I didn't have any patience at all, my concentration wasn't there…I couldn't tie a fly. Now, with fly-fishing, I'm probably more patient than I have been in a long time." Mack shared a similar sentiment as he talked about how fly-tying and casting required him to pay attention, which he described as integral in helping him manage stress: "Fly tying and casting definitely helps with my patience. I'm not a patient person, which can cause stress and anger for myself and others. I had to learn to slow down and really pay attention to that stuff. I don't get anxious now."

Generating Motivation. Debilitating PTSD symptoms such as depression and fatigue can strip away one's motivation and desire to engage in life activities (APA, 2017). Finding new pathways that foster motivation to participate in life activities is important and, as participant comments illustrate, fly-fishing appears to be an effective mechanism through which to achieve this outcome. For example, Johnny commented on the challenge of his transition from full-time work in the military to retirement, and viewed his participation in PHWFF program as a constructive way to fill that void: "…once I retired, I didn't have anything to do, I didn't have a job, I moved away and left all of my military buddies…so it just gives you something to do so that you're not just dwelling on bad things; it's a positive thing for you to do." Laura, a 53-year-old Army veteran from Desert Storm, shared a renewed level of motivation across multiple settings as a result of her involvement in the program: "Ever since I've been in the PHWFF program, I've been getting up earlier every day, and I'm motivated to do things. I joined AMVETS [American Veterans National Service Foundation]. I am motivated to do so many things now - I volunteer at the hospital." Larry shared a similar sentiment: "Because of PHWFF, I get out of bed."

Challenge. The military experience offers numerous situations in which individuals face significant physical, mental, and psychological challenges. Although prolonged exposure to such stressors has been shown to negatively impact military personnel (Fulton et al., 2015), these experiences can also be catalysts for growth, as they present opportunities for shaping one's resilience and course of action through adversity. Once discharged from service, however, veterans may not find adequate substitutions that can mirror these types of challenges outside of the military context. Participants

pointed to fly-fishing as one potential avenue to again experience that sense of challenge. Fly-fishing requires a diverse skill set, including selection and management of fishing tackle, knot tying and leader construction, insect identification and creative fly-tying, rod building, casting technique, and reading the complex flow of water and behavior of the fish. For Roger, a 38-year-old who had participated in PHWFF for two years as he completed the medical separation process from the Army, fly-fishing filled that challenge void across many different areas of life: "I'm trying to tie a fly and I'm concentrating so much on getting that right that I'm not dwelling on other things. Every aspect of it is about learning new skills, concentration, and it's all really coming together." Laura's comment reflects the need for commitment in the PHWFF program, which appears to parallel the type of commitment required for the military context: "It's just not like the one-time experience you get in some programs. You have to earn that rod, you just don't come and get it. They have to see that you are really interested and you have been coming for a while."

Theme III. Fly-fishing Facilitates Healing by Restoring Control, Fostering Connections, and Creating Hope for the Future

Participants described fly-fishing as a bridge toward self-restoration by providing opportunities to regain control in their lives, helping them feel connected to others and nature, and creating hope for the future.

Restoring Control. Participants noted that fly-fishing helped restore a sense of control in their lives. That was true for Laura, who described a renewed sense of control as she was able to progress from being a PHWFF participant to a volunteer:

> Sometimes, it just feels like you have no control over your life, like this thing is eating you up from the inside and there's nothing you can do about it. But then I volunteered to run a tying class. I went from a participant to a volunteer. That makes me look in the mirror and is something I am proud of.

Fostering Connections through Shared Experiences. Participants shared how finding a group of people that enjoyed doing the same things together gave them a renewed sense of inclusion and connection to others and provided socialization and bonding opportunities. Elliott described his connection with other members of the PHWFF group this way: "…it's a bunch of guys you normally wouldn't even know, and you wind up becoming fishing partners." Roger shared this about what it means to socialize with others through fly-fishing: "I didn't know anybody. I just moved from a different post and met people who had been through similar experiences. You bond with different people and, once on the river, you talk about stuff. It serves as an outlet for that kind of thing." Owen stated that he doesn't participate in fly-fishing to catch fish, but rather to connect with others: "Fly-fishing breaks down a lot of barriers, and makes you feel like you're not alone…it's a big network, and a mentorship. For me, it's not about the fishing at all. I love to catch fish, but I don't go to fish at all, I go to see everybody."

Notably, many participants identified the greatest benefit of these new connections was being able to share, learn and grow with others while fly-fishing. Owen stated, "... we feed off of each other, on the healing aspect because some of us are on different levels of past healing, and so we can give each other shortcuts and stuff." Laura shared this, "We got friends here…we have a common bond out there." Elliot summarized

the value of the shared experience in this way, "…you know everybody is in the same boat...this is my family." For others, fly-fishing was integral in helping them reconnect with the outdoors. This was evident for Brent, who made the observation, "I find you become more in contact with the environment…you learn about the environment…it makes you conscious of the environment." Yvette also contemplated the natural environment in her coping process, "Everything about it is so—I'm not going to say divine—but it's just natural, just being around the water and the trees. And it helps you cope even when you're stuck. I was so stuck."

Creating Hope for the Future. Participants described a renewed sense of excitement and optimism about the future as a result of their fly-fishing experiences. This renewal was a welcomed change from the negativity that tended to dominate their daily thoughts and emotions. Larry shared this, "You are looking forward to the next trip, and you want one every week." Owen's renewed optimism helped him put challenges into perspective: "I may have a bad week or two, but tell myself Friday is a casting session which helps me get through the day. I can deal with a few bad days because there is going to be one day I can go fishing." For Roger, the anticipatory nature of catching fish seemed to be an apt metaphor for renewing optimism and hope in his life: "Fly-fishing gives me something to look forward to and with every cast, I have hope that something's going to happen…I came from a place where I didn't think there was hope for anything."

Theme IV. Fly-fishing Helps Move Participants Toward Personal Transformation and Posttraumatic Growth

Participants expressed how fly-fishing helped them to begin forging a path towards self-restoration and personal transformation. Owen talked about how fly-fishing impacted how he viewed himself noting, "I feel like I do love myself. I love fishing and I just feel happy and relaxed and peaceful. I got one thought in my head, not a million." Laura suggested that fly-fishing helped her learn how to take care of herself: "With fly-fishing, you have something you take on forever, you can take it with you. They don't come and feed you but teach you how to fish and feed yourself." She went on to describe that metaphor in the context of her life goals,

> It gives you back life. It did that for me. It's not that you want to die, it's just like "oh, the heck with it"…it's just what happens; now you tie this [fly], now I can do that. It's your real life now, you can manage your PTS[D] now that you have goals, and you can see short-term goals.

Yvette similarly described a sense of pride when she was able to share knowledge of fly-fishing with others. Her comment hints at a re-visioning of her "self" in this process:

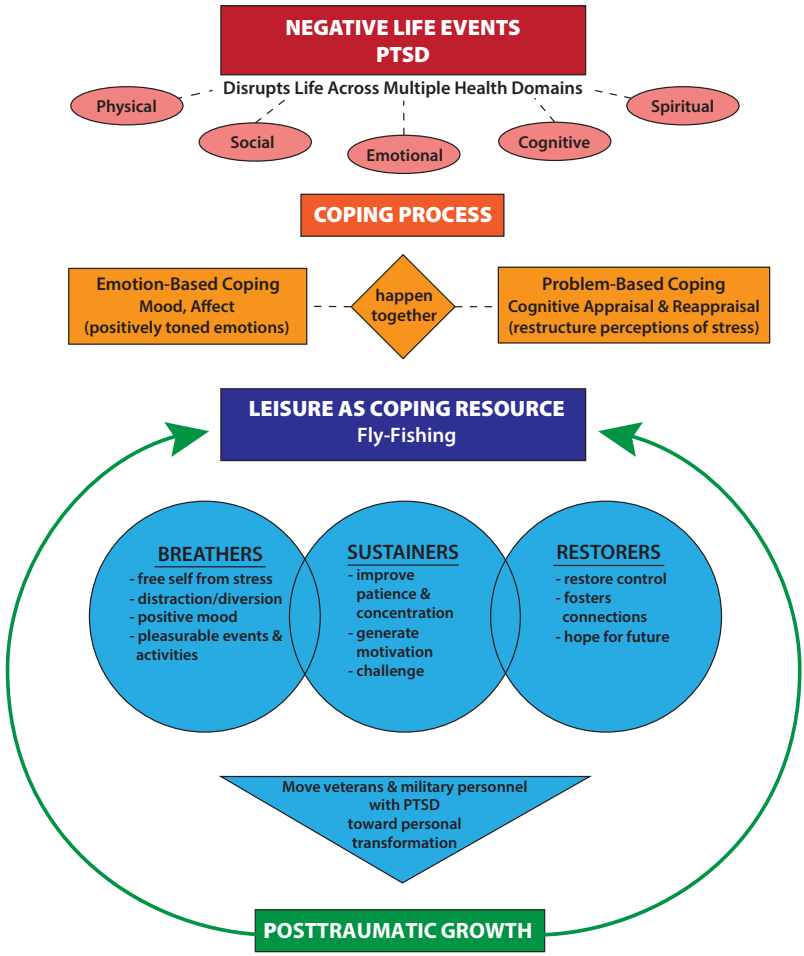
> You don't have a lot of proud moments in your life, so when you can talk about fly-fishing, that gives you a lot of pride. And you feel like you can take this back to somebody and say, hey, I'm making advances here, I'm finding something positive, I am just a different kind of person when I am here. I suffer from frozen shoulder and all the back and legs issues, but none of that bothers me when I am here. It just takes me to a different zone. It is like I am a whole person.

Yvette summarized her thoughts by sharing this powerful insight about the transformative potential of fly-fishing: "It ain't about the fishing. It's about where it takes you and how it can reform you and make you over and help you get out of a rut, and just try. It'll transform you. It helped me to be more complete."

Discussion

Fly-fishing appears to be an effective coping resource that can activate the coping process and facilitate engagement in life rather than self-imposed isolation for veterans and military personnel with PTSD. The meanings that participants ascribe to fly-fishing align with Kleiber et al.'s (2002, 2008) underlying theoretical propositions explaining how leisure can assist with the stress-coping process. This alignment supported the development of a new conceptual model (see Figure 1), which is used to frame this discussion.

Figure 1
Conceptual Model of Fly-Fishing as a Coping Resource for Veterans and Military with PTSD



Consistent with the buffering role of leisure in the stress-coping process, participants articulated positive emotional and cognitive changes as a result of their fly-fishing experiences. As reflected in Figure 1, these findings reinforce the notion that a leisure experience, such as fly-fishing, can be a critical self-protective resource for emotion-focused and problem-focused coping with negative life events, such as PTSD, and that such experiences may serve as the foundation for personal transformation (Kleiber et al., 2008). As depicted in the top portion of Figure 1, a negative life event such as PTSD may produce myriad disruptions across multiple functional domains. Instead of demonstrating avoidant behavior, acting reactively, or disassociating when encountering challenging situations, veterans and military personnel with PTSD need to find new ways to actively cope by tapping emotion-and problem-based processes (Benedek & Wynn, 2016).

As depicted in the first circle in the middle section of Figure 1, Theme I findings support Kleiber et al.'s (2008) proposition that fly-fishing can be used as a self-protective resource, or *breather* (p. 322), for individuals who have experienced a negative life event by freeing themselves from stress, diverting attention away from the negative symptoms through distraction, and providing opportunities to experience pleasure and positive mood states. Participants reported that the calming nature of fly-fishing helped buffer the negative effects of their symptoms by providing an opportunity to experience a sense of peace, contentment, and tranquility. Many participants were able to verbalize and name their distress, suggesting that when engaged in fly-fishing activities they were able to reduce the intensity and duration of symptoms. Participants viewed fly-fishing as a welcomed respite from their stress symptoms, as it diverted attention away from intrusive, negative thoughts and feelings. Some even noted a decreased need for medications to manage PTSD symptoms. This temporary suspension of attention provided participants with enough distance and space to allow positive emotions and thoughts to emerge, which subsequently led to greater emotional awareness and expression.

As depicted in the middle circle in the middle section of Figure 1, Theme II findings suggest fly-fishing can have a positive impact on problem-based coping, as it helps generate motivation and commitment while concurrently providing challenge. This finding aligns with Kleiber et al.'s (2008) proposition that leisure can generate and *sustain* (p. 323) a sense of optimism, excitement, and hope for the future, thus allowing the individual to cope with their present situation. Participants appeared to value the inherent challenges presented by fly-fishing, and appreciated the opportunity to develop skills in casting and fly-tying, while simultaneously developing functional skills such as concentration and patience. While challenge may have been perceived as stressful in the past, fly-fishing helped participants cognitively reappraise and restructure these perceptions. As participants moved away from avoidance behaviors in relation to stress, and towards the consideration of alternative possibilities in their lives, they began to experience a shift in their understanding of 'self.' Fly-fishing appeared to help them sustain positive forward progress as they adapted to their PTSD.

As depicted in the last circle in the middle section of Figure 1, Theme III findings suggest fly-fishing has the potential to help participants regain control, experience social connections with others and the outdoors, and experience hope for the future. This finding aligns with Kleiber et al.'s (2008) proposition that leisure can *restore* (p.

323) some aspects of the self by restoring hope, making connections with others, and reconstructing one's life story that is connected with the past. The inherent challenges associated with fly-fishing offered participants a renewed sense of self-worth and empowerment as they viewed themselves as having the tools to face these challenges, and in some cases, master them. This sense of control is an important feature while coping with crisis (Hasson-Ohayon et al., 2006), as it enables one to cope as an active agent rather than as a passive and detached by-stander.

As further depicted in the last circle in the middle section of Figure 1, participants also acknowledged that the social connections and fellowship they developed with each other were critical for their sense of coherence. Being together with a group of people with similar concerns and interests appears to contribute to the solidarity that arises between them and has the potential to move them out of isolation and back into society. Learning to fly-fish by attending meetings for group instruction in various skill development areas including casting, fly-tying, insect identification, and overnight outings rekindled the bonds forged during their time in military service. One significant difference, of course, is that fly-fishing occurs in environments that tend to be pristine, beautiful, and safe, where the conflict simply involves "fighting a fish" at the end of the fly-line. The expanding repertoire of shared experiences and what is learned in the process represents the therapeutic outcome of this group participation. Some participants noted the shared experience extended beyond fly-fishing sessions to include helping fellow members move, carpooling to field trips, volunteering to teach skills courses to others, visiting each other when sick or in the hospital, and generally "taking care of each other."

Findings from Theme IV suggest that collectively, the *breathers, sustainers*, and *restorers* show promise in helping veterans and military personnel with PTSD move toward personal transformation and posttraumatic growth, as depicted in the bottom section of Figure 1. This finding aligns with Kleiber et al.'s (2008) proposition that leisure can serve as a context for *personal transformation* (p. 324) as it facilitates positive emotions and appreciation of life, which helps individuals realize their full potential. Positive interactions and successes in the PHWFF program allowed participants to start seeing themselves in a different way and gave them an opportunity to start reconstructing their own story, which is an important step toward posttraumatic growth (Tedeschi & Calhoun, 1996). A number of participants engaged in self-reflection about who they were becoming and shared the pride they experienced in this growth process. Some even offered to "pay it forward" by serving as a volunteer Program Lead for other members in the PHWFF program who did not yet have the requisite background and skills to succeed in fly-fishing. This movement is represented by the green arrows emerging from the PTG outcome depicted at the bottom of Figure 1. As participants experienced PTG, they felt empowered to assume a new role in the fly-fishing program —that of a leader, mentor, and coach who could instruct, support, and help shape the next cohort of fly-fishers. Achieving psychosocial stability appeared to be dependent on participants' recognition and appreciation of their existing abilities, which helped them begin reconstructing a coherent narrative about who they are post-injury. Findings suggest that fly-fishing has the potential to contribute to this process of personal transformation and fulfillment of one's potential, thus leading to posttraumatic growth.

This phenomenological study adds to the literature by demonstrating that nature-based recreation, such as fly-fishing, can create a healing environment that can pro-

mote a return to healthy activity and personal transformation for veterans and military personnel with PTSD. Fly-fishing provides a dramatic distinction between the trials of combat and the calming effects of sharing natural environments with like-minded companions in pursuit of elusive wild fish. Developing skills in casting and fly-tying offers an opportunity to practice skills and adjust to current abilities. These activities rekindle and enhance participants' appreciation and enthusiasm for recreational activities while also encouraging socialization, a sense of belonging, hope, and the ability to appreciate and enjoy life.

Limitations

This study has several limitations. Although generalizability is typically not sought in qualitative research, this study included a small sample of PHWFF participants from the northeast region of the U.S. and thus, findings only represent their perspectives. Selection bias may also be a limitation, as it is possible that only PHWFF members who already felt they had made gains as a result of their fly-fishing experience volunteered to participate in the study. Most participants were male, and primarily represented the U.S. Army, which may also influence the findings. Further, limited access to demographic data of the sample, such as years of military service and the number of deployments, prevented a full understanding of the context in which participants served. Additionally, the focus groups took place during two different types of PHWFF events, which may have influenced how comfortable participants felt disclosing sensitive details about their PTSD symptoms. Sharing PTSD concerns in a focus group setting is not easy and may have lead participants to report that they are doing well when in reality they might be struggling with emotional issues. Choosing a qualitative design to gain a deeper understanding of these sensitive issues was a logical methodological decision to address this limitation; however, participant responses may have been unduly influenced by the 'group think' dynamic, or by social desirability. Further, because the PHWFF program is primarily run by volunteers and fly-fishing experts who donate their time, program delivery structures and curricula may have varied between the two different focus groups, leading to qualitatively different experiences.

Future Research

Although qualitative research designs do not allow us to conclude that fly-fishing was responsible for the noted changes in PTSD symptoms among participants, this nature-based activity does show promise as a viable therapeutic approach for this population, and continued research on its efficacy is warranted. The next logical step would be an experimental design of a fly-fishing program for the treatment of PTSD among this population. Such an investigation should include a sufficient sample size, consistent structure and delivery of the fly-fishing intervention/program (fidelity), and a standardized measurement tool designed to assess PTSD symptoms, as well as associated behavioral and emotional symptoms. Future studies should attempt to determine which specific components of the PHWFF program are most influential in effecting change. Lastly, while the researchers decided to pool the analyses of the two focus group datasets for convenience of time, future research may consider examining the difference and similarities between participants from Warrior Transition Units and veteran-only groups.

Implications for TR Practice

The VA and DoD's shift toward an aspirational approach to health recognizes that individual interests and motivations are drivers for behaviors that improve health among veterans and military personnel (NCCIH, 2015). Although fly-fishing is not currently considered a first-line treatment for PTSD among this population, it does appear to be a viable CIH approach that can be used in TR and recreation settings to achieve important client outcomes. RTs use purposeful recreation to facilitate increased access to community resources, and individual strengths and skills that support well-being across multiple health domains (Anderson & Heyne, 2012). Within this context, treatment involves participation and engagement in a variety of personally and culturally relevant recreation activities (e.g., fitness, sports, outdoor pursuits, cultural arts, aquatics, animal-based therapies) that support health, social connections, and reinforce positive aspects of one's self and values (Iwasaki, Coyle, & Shank, 2010). Strengths-based, recovery-oriented strategies are identified as the current standard of care for the treatment of individuals with mental health disorders such as PTSD, depression, and anxiety (National Alliance on Mental Illness, n.d.).

As findings from this study suggest, nature-based recreation approaches may serve as a rich training ground for strengthening coping responses and functional changes among our clients who have experienced trauma. The potential of nature-based approaches, ranging from gardens to wilderness therapy, is highlighted as a therapeutic resource in TR as they provide opportunities for reflection and personal restoration. TR professionals should be aware, however, that our clients who have experienced trauma might need additional supports and opportunities to apply and generalize newly learned understandings and skills in their daily lives. Lastly, these findings support the continued development and expansion of nature-based recreation programs like PHWFF that provide continuous, ongoing opportunities, rather than programs and events that provide limited one-time experiences.

References

Alexander, B. (2017). *Perceptions of women veterans' preferences for fly-fishing as therapeutic intervention for posttraumatic stress disorder related to gender orientation: A case study* (Order No. 10636390). Available from ProQuest Dissertations & Theses A&I. (1970479146).

American Psychiatric Association. (2017). *Clinical practice guideline for the treatment of posttraumatic stress disorder.* http://www.apa.org/ptsd-guideline/treatments/index.aspx

Anderson, L. S., & Heyne, L. A. (2012). Flourishing through leisure: An ecological extension of the leisure and well-being model in therapeutic recreation strengths-based practice. *Therapeutic Recreation Journal, 46*(2), 129–140.

Benedek, D. M., & Wynn, G. H. (2016). Posttraumatic stress disorder. In D. M. Benedek & G. H. Wynn (Eds.), *Complementary and alternative medicine for PTSD* (pp. 203–217). Oxford University Press.

Bennett, J. L., Piatt, J. A., & Van Puymbroeck, M. (2017). Outcomes of a therapeutic fly-fishing program for veterans with combat-related disabilities: A community-based rehabilitation initiative. *Community Mental Health Journal, 53*(7), 756–765. doi:10.1007/s10597-017-0124-9.

Berman, M. G, Jonides, J., & Kaplan, S. (2008). The cognitive benefits of interacting with nature. *Psychological Science, 19*, 1207–1212. doi: 10.1111/j.1467-9280.2008.0225.x

Bradbury-Jones, C., Sambrook, S., & Irvine, F. (2009). The phenomenological focus group: An oxymoron? *Journal of Advanced Nursing, 65*(3), 663–671. doi: 10.1111/j.1365-2648.2008.04922.x

Burnam, M. A., Meredith, T. T., & Jaycox, L. H. (2009). Mental health care for Iraq and Afghanistan war veterans. *Health Affairs, 28*(3), 771–782.

Calhoun, L. G., & Tedeschi, R. G. (2001). Posttraumatic growth: The positive lessons of loss. In R. A. Neimeyer (Ed.), *Meaning reconstruction and the experience of loss.* (pp. 157–172). American Psychological Association.

Chang, L. C., & Yu, P. (2012). Relationships between leisure factors and health-related stress among older adults. *Psychology, Health, and Medicine, 18*(1), 79–88. doi: 10.1080/13548506.2012.686621

Cote-Arsenault, D., & Morrison-Beedy, D. (2001). Women's voices reflecting changed expectations for pregnancy after perinatal loss. *Journal of Nursing Scholarship, 33*(3), 239–244.

Creswell, J. W., & Creswell, J. D. (2018). *Research design: Quantitative, qualitative, and mixed methods approaches*. Sage Publishing Inc.

Cukor, J., Spitalnick, J., Difede, J., Rizzo, A., & Rothbaum, B. O. (2009). Emerging treatments for PTSD. *Clinical Psychology Review, 29*, 715–726. doi: 10.1016/j.cpr.2009.09.001

Department of Veterans Affairs & Department of Defense. (2017). *VA/DOD clinical practice guidelines for the management of posttraumatic stress disorder and acute stress disorder*. https://www.healthquality.va.gov/guidelines/MH/ptsd/VA-DoDPTSDCPGFinal.pdf.

Defense Casualty Analysis System. (2017). *U.S. Military Casualties-Operation Enduring Freedom (OEF), Operation New Dawn (OND), and Operation Iraqi Freedom (OIF) wounded in action.* Retrieved from https://www.defense.gov/casualty.pdf.

Denovan, A., & Macaskill, A. (2017) Building resilience to stress through leisure activities: A qualitative analysis. *Annals of Leisure Research, 20*(4), 446–466, doi:10.1080/11745398.2016.1211943

Dustin, D., Bricker, N., Arave, J., Wall, W., & Wendt, G. (2011). The promise of river running as a therapeutic medium for veterans coping with post-traumatic stress disorder. *Therapeutic Recreation Journal, 45*(4), 326–340.

Duvall, J., & Kaplan, R. (2013). *Exploring the benefits of outdoor experiences on Veterans*. Report for the Sierra Club Military Families and Veterans Initiative.

Foa, E. B., Keane, T, Friedman, M., & Cohen, J. (2009). *Effective treatment for PTSD: Practice guidelines from the International Society for Traumatic Stress Studies* (2nd ed.). The Guilford Press.

Fulton, J. J., Calhoun, P. S.,Wagner, H. R., Schry, A. R.,Haira. L. P., Feeling, N., Elbogen, E., Beckham, J. C. (2015). The prevalence of posttraumatic stress disorder in Operation Enduring Freedom/Operation Iraqi Freedom (OEF/OIF) veterans: A meta-analysis. *Journal of Anxiety Disorders, 31*, 98–107.

Gelkopf, M., Hasson-Ohayon, I., Bikman, M., & Kravitz, S. (2013). Nature adventure rehabilitation for combat-related posttraumatic chronic stress disorder: A randomized control trial. *Psychiatry Research, 209*(3), 485–493.

Giordano, N., Bader, C., Richmond, T. S., & Polomano, R. C. (2018). Complexity of the relationships of pain, posttraumatic stress, and depression in combat-related injured populations: An integrative review to inform evidence-based practice. *Worldviews on Evidence-based Nursing, 15*(2), 113–126. doi: 10.1111/wvn.12274

Glaser, B., & Strauss, A. (1967). *The discovery of grounded theory: Strategies for qualitative research.* Aldine.

Hasson-Ohayon, I., Kravetz, S., Roe, D., Rozenzweig, S. & Weiser, M. (2006). Qualitative assessment of a verbal and non-verbal psychosocial intervention with persons with severe mental illness. *Journal of Mental Health, 15*(3), 343–353.

Hawkins, B. L., Townsend, J. A., Garst, B. A. (2016). Nature-based recreational therapy for military service members. *Therapeutic Recreation Journal, 50*(1), 55–74.

Institute of Medicine. (2014). *Treatment for posttraumatic stress disorder in military and Veteran populations: Final assessment.* National Academies Press. doi:10.17226/18724

Iwasaki, Y. (2006). Counteracting stress through leisure coping: A prospective health study. *Psychology, Health and Medicine, 11*(2), 209–220.

Iwasaki, Y., Coyle, C. P., & Shank, J. W. (2010). Leisure as a context for active living, recovery, health and life quality for persons with mental illness in the global context. *Health Promotion International, 25*(4), 483–494.

Iwasaki, Y., Mactavish, J., & MacKay, K. (2005). Building on strengths and resilience: Leisure as a stress survival strategy. *British Journal of Guidance and Counseling, 33*(1), 81–100.

Iwasaki, Y., & Mannell, R. C. (2000). Hierarchical dimensions of leisure stress coping. *Leisure Sciences, 22*(3), 163–181. doi: 10.1080/01490409950121843

Iwasaki, Y., & Schneider, I. E. (2003). Leisure, stress, and coping: An evolving area of inquiry. *Leisure Sciences, 25*(2–3), 107–113. doi:10.1080/01490400390211781

Jankowski, A., & Bell Vargas, G. (2019). A strengths-based approach to developing coping mechanisms for veterans living with posttraumatic stress disorder. [special issue ATRA Annual in Therapeutic Recreation, Abstracts from the 2019 ATRA Conference Research Presentations], *Therapeutic Recreation Journal, 53*(4), 60–61.

Kaplan, R., & Kaplan, S. (1989). *The experience of nature: A psychological perspective.* Cambridge University Press.

Kearney, D. J., McDermott, K., Malte, C., Martinez, M., & Simpson, T. L. (2012). Association of participation in a mindfulness program with measures of PTSD, depression and quality of life in a Veteran sample. *Journal of Clinical Psychology, 6*8(1), 101–116. doi: 10.1002/jclp.20853.

Kleiber, D. A., Hutchinson, S. L., & Williams, R. (2002). Leisure as a resource in transcending negative life events: Self-protection, self-restoration, and personal transformation. *Leisure Sciences, 24*, 219–235.

Kleiber, D. A., Reel, H. A., & Hutchinson, S. L. (2008). When distress gives way to possibility: The relevance of leisure in adjustment to disability. *NeuroRehabilitation, 23*, 321–328.

Krueger, R. A. (1994). *Focus groups: A practical guide for applied research.* Sage.

Lanning, B. A., & Kreneck, N. (2013). Examining effects of equine-assisted activities to help combat veterans improve quality of life. *Journal of Rehabilitation Research & Development, 50*(8), xv–xxii. doi: 10.1682/JRRD.2013.07.0159

Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. Springer.

Markowitz, J. C., Meehan, K. B., Petkova, E., Zhao, Y., Van Meter, P. E., Neria, Y., & Nazia, Y. (2016). Treatment preferences of psychotherapy patients with chronic PTSD. *Journal of Clinical Psychiatry, 77*, 363–370. doi:10.4088/JCP.14m09640

Mikal-Flynn, J., Anderson, L. S., & Hoffman, J. (2018). Posttraumatic growth and metahabilitation in recreational therapy practice. *Therapeutic Recreation Journal, 52*(3), 269–287. doi: 10.18666/TRJ-2018-V52-13-8675

Mowatt, R. A. & Bennett, J. (2011). War narratives: Veteran stories, PTSD effects, and therapeutic fly-fishing. *Therapeutic Recreation Journal, 45*(4), 286–308.

Moustakas, C. (1994). *Phenomenological research methods*. Sage.

National Academies of Sciences, Engineering, and Medicine (2018). *Evaluation of the Department of Veterans Affairs mental health services.* The National Academies Press. https://doi.org/10.17226/24915

National Alliance on Mental Illness. (n.d.). Living with a mental health condition. http://www.nami.org/Find-Support/Living-with-a-Mental-Health-Condition

National Center for Complementary and Integrative Health. (2015). *Report of the working group on strengthening collaborations with the U.S. Department of Defense and U.S. Department of Veterans Affairs: Effectiveness research on mind and body interventions.* https://nccih.nih.gov/sites/nccam.nih.gov/files/Council_Working_Group_Final_Report_2015-01-27.pdf.

National Center for PTSD. (2019). Medication assisted psychotherapy for PTSD. *PTSD Research Quarterly, 30*(3), 1–15.

Polusny, M. A., Erbes, C. R., Thuras, P., Moran, A., Lamberty, G. J., Collins, R. C., Rodman, J. L., & Lim, K. O. (2015). Mindfulness-based stress reduction for posttraumatic stress disorder among Veterans: A randomized clinical trial. *Journal of American Medical Association, 314*(5), 456–465. doi: 10.1001/jama2015.8361

Poulsen, D. V., Stigsdotter, U. K., & Refshage, A. D. (2015). Whatever happened to the soldiers? Nature-assisted therapies for veterans diagnosed with post-traumatic stress disorder: A literature review. *Urban Forestry & Urban Greening, 14*, 438–445.

Price, W. D., Lundberg, N. R., Zabriskie, R. B., & Barney, K. W. (2015). I tie flies in my sleep: An autoethnographic examination of recreation and reintegration for a veteran with posttraumatic stress disorder. *Journal of Leisure Research, 47*(2), 185–201.

Project Healing Waters. (n.d.). About PHWFF: Frequently asked questions. http://www.projecthealingwaters.org/about-us/faq/

Rogers, S. D., Loy, D., & Brown-Bochicchio, C. (2016). Sharing a new foxhole with friends: The impact of outdoor recreation on injured military. T*herapeutic Recreation Journal, 50*(3), 213–227. doi: 10.18666/TRJ-2016-V50-13-2837

Russell, R. V. (2017). *Pastimes: The context of contemporary leisure* (6th ed.). Sagamore Publishing.

Strauss, J. L., Coeytaux R., McDuffie, J., Nagi, A., & Williams J. W. (2011). *Efficacy of complementary and alternative therapies for posttraumatic stress disorder: VA evidence-based synthesis program.* Department of Veteran Affairs, Veterans Health Administration, Health Services Research and Development Service.

Steenkamp, M. M., Litz, B. T., Hoge, C. W., & Marmar, C. R. (2015). Psychotherapy for military-related PTSD: A review of randomized clinical trials. *Journal of the American Medical Association, 314*, 489–500. doi:10.1001/jama.2015.8370

Tan, G., Dao, T. K., Smith, D. L., Robinson, A., & Jensen, M. P. (2010). Incorporating complementary and alternative medicine (CAM) therapies to expand psychological services to veterans suffering from chronic pain. *Psychological Services, 7*(3), 148–161. doi: 10.1037/a0020304

Tedeschi, R. G., & Calhoun, L. G. (1996). The Posttraumatic Growth Inventory: Measuring the positive legacy of trauma. *Journal of Traumatic Stress, 9*(3), 455–471. doi:10.1002/jts.2490090305

Tidball, K. G. (2012). Returning warriors and environmental education opportunities: Outdoor recreation, education, and restoration for Veterans #CEL002. In Cornell Civic Ecology Lab (Ed.), *Civic Ecology Lab White Paper Series* (pp. 17). Cornell University. https://civeco.files.wordpress.com/2013/09/tidball-2013-warriors.pdf

Tidball, K. G., & Kransy, M. E. (2007). From risk to resilience: What role for community greening and civic ecology in cities? In A. Wals (Ed.), *Social learning towards a more sustainable world* (pp. 149–164). Wagengingen Academic Press.

Townsend, J., Hawkins, B. L., Bennett, J. L., Hoffman, J., Martin, T., Sotherden, E., & Bridges, W. (2018). Preliminary long-term health outcomes associated with recreation-based health and wellness programs for injured service members. *Cogent Psychology, 5*, 1–17. https://doi.org/10.1080/23311908.2018.1444330

van Manen, M. (1997). *Researching lived experience: Human science for an action sensitive pedagogy.* SUNY Press.

Vella, E. J., Milligan, B, & Bennet, J. L. (2013). Participation in outdoor recreation program predicts improved psychosocial well-being among Veterans with post-traumatic stress disorder: A pilot study. *Military Medicine, 178*(3), 254–260.

Walsh, R. (2011). Lifestyle and mental health. *American Psychologist, 66*(7), 579–592. doi: 10.1037/a0021769

Webb, C., & Kevern, J. (2001). Focus groups as a research method: A critique of some aspects of their use in nursing research. *Journal of Advanced Nursing, 33*(6), 798–805.

Wenger, J. W., O'Connell, C., & Cottrell, L. (2018). *Examination of recent deployment experience across the services and components.* Santa Monica, CA: RAND Corporation. https://www.rand.org/pubs/research_reports/RR1928.html