



HEALTH PSYCHOLOGY | RESEARCH ARTICLE

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Manisha Joshi and Joshua Zaris Goldman

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*Corresponding author: Manisha Joshi, School of Social Work, College of Behavioral and Community Sciences, University of South Florida, 13301 Bruce B. Downs Blvd., MHC1400, Tampa, FL 33612, USA
E-mail: manishaj@usf.edu

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Luca Cerniglia, Uninettuno university, Italy

Additional information is available at the end of the article

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Endure, evolve, achieve: Stakeholder perspectives on the effectiveness of the Swamp Apes program in restoring biopsychosocial functioning of American veterans

Manisha Joshi^{1*} and Joshua Zaris Goldman¹

Abstract: A growing body of evidence highlights the benefits of recreational outdoor therapy for veterans experiencing posttraumatic stress disorder. We employed the Hawkins Model for “Nature as Strengths-based Recreational Therapy Intervention for Military Members” to assess the Swamp Apes/Volunteer Wilderness Alliance (SA/VWA) in South Florida, which has among its key objectives ridding the Everglades National Park of invasive species (e.g., Burmese python). Focus group and interviews with 10 veterans and seven non-veterans (i.e., family, health providers) were conducted to assess benefits, risks, and potential for developing SA/VWA activities into a formal therapy program for veterans rooted in the American Therapeutic Recreation Association’s standards. Data analysis via ATLAS. Ti yielded findings of: reduced trauma symptoms, improved family relationships, facilitation of transition to civilian life, experience of trust with team members, restored sense of purpose, and feeling unique and safe. SA/VWA activities are consonant with the Hawkins model’s essential components of successful recreational therapy programs



Manisha Joshi

ABOUT THE AUTHOR

Dr. Manisha Joshi is an Associate Professor in the College of Behavioral & Community Sciences at the University of South Florida, Tampa. Dr. Joshi, Joshua Goldman, and other interdisciplinary researchers in her team focus on health effects of violence, specifically mental health effects, and on evidence-based interventions to address these effects and to help improve the quality of life of affected populations. The study presented here was conducted in response to the Institute of Medicine’s (2014) call for more research on the effectiveness of interventions for posttraumatic stress disorder symptomatology among veteran populations. Our findings highlight the potential of the Swamp Apes/Volunteer Wilderness Alliance (SA/VWA) to develop into a formal therapy program rooted in the American Therapeutic Recreation Association’s practice standards. If developed into a formal program, and if future studies confirm its effectiveness in improving quality of life of trauma-impacted populations, SA/VWA can be offered as an evidence-based intervention.

PUBLIC INTEREST STATEMENT

A growing body of evidence highlights the benefits of recreational outdoor therapy for veterans experiencing posttraumatic stress disorder. We present findings from an assessment of the Swamp Apes/Volunteer Wilderness Alliance (SA/VWA), a non-profit in South Florida, which assists veterans in their efforts to regain purpose in their post-combat lives and has among its key objectives ridding the Everglades National Park of invasive species (e.g., Burmese python). In focus groups/interviews, veterans, their family members, and health providers expressed that participation in SA/VWA activities reduced trauma symptoms, improved family relationships, facilitated transition to civilian life, and restored veterans’ sense-of-purpose. It also offered veterans’ with opportunities to experience trust with team members, feel unique and safe, and to be in a meaningful place with nature that requires their directed attention. As a nature-based program, the SA/VWA appears to be a promising alternative for veterans and others who have traumatogenic experiences (e.g., fire fighters, paramedics).

(i.e., harnessing internal strengths and existing military assets, building on existing character strengths and skillsets of veterans). The SA/VWA appears to be a unique and promising alternative for veterans and others who have traumatogenic experiences, providing a meaningful escape that helps them regain their functioning while providing a service to communities.

Subjects: Social Sciences; Gender Studies - Soc Sci; Mental Health

Keywords: nature-based recreational therapy; outdoor therapy; veterans; posttraumatic stress disorder; Hawkin's Model

An extensive body of English-language literature exists regarding the usefulness of recreational therapy in producing positive emotional, cognitive and behavioral outcomes for individuals who have survived traumatogenic experiences (Townsend, Hawkins, & Bennett, 2015; Van Puymbroeck & Lundberg, 2011; Vella, Milligan, Bennett, 2013). However, little is known about the potential benefits of programs contextualized in the outdoors for individuals diagnosed with trauma and stress-related disorders such as posttraumatic stress disorder (PTSD) (Hawkins, Townsend, & Garst, 2016; Norton & Watt, 2013). Also, lacking is evidence from the perspectives of key stakeholders (e.g., returning American veterans, their family), regarding the usefulness of nature-based recreational therapy as a strengths-based treatment alternative.

The present study responds to the Institute of Medicine's call for more research on interventions for PTSD among veterans (Institute of Medicine, 2014). It documents perspectives of a sample of returning veterans and other key stakeholders (e.g., family members, health providers) regarding the benefits and risks of "Swamp Apes/Volunteer Wilderness Alliance" (SA/VWA), a nature-based program contextualized in the Everglades National Park in South Florida, and assesses the potential for developing its activities into a formal therapy program for veterans rooted in the practice standards of the American Therapeutic Recreation Association.

1. Issues faced by returning veterans

A disturbing trend among returning veterans is the use of aggression towards others including spouses, partners, and other family members (Galovski & Lyons, 2004). An explanation often put forward is that they are trained to act aggressively and decisively in an almost automatic manner. Such training and focus are applauded during deployment and often rewarded with medals/citations upon return to the United States (US); but, the levels of intensity, focus and aggression required in the military are not commensurate with the demands of civilian life. In addition, for individuals who struggled with biopsychosocial issues prior to deployment, the stressors are compounded and can be socially and emotionally overwhelming (Litz & Schlenger, 2009; Seal, Bertenthal, Miner, Sen, & Marmar, 2007). Concomitantly, many veterans endorse somatic (e.g., insomnia, headaches), neurological (e.g. tinnitus), cognitive (e.g., difficulty focusing, impaired executive functioning), and psychological symptoms (e.g., depression, anxiety, hypervigilance, recurring nightmares), and others (Seal, Bertenthal, Miner, Sen, & Marmar, 2007).

Difficulty with biopsychosocial symptoms along with transitioning to civilian life and the accompanying status devaluation has resulted in 40% of more than 3000 Iraq Afghanistan Veterans of America members endorsing suicidal ideation "at least once..., up from 30% in 2014...and nearly 60% have a service-connected mental health condition" (Kime, 2016, para. 7).

2. Available support for returning veterans

The Veterans Administration (VA) offers support for veterans, including medical and psychological care; housing for homeless veterans and their families; services for veterans with disabilities; tuition benefits; discounts at restaurants and parks; and prescription benefits (US Department of Veterans Affairs, 2013). Though beneficial, these resources are difficult to access and at times may

be insufficient to address the variety of conditions experienced by veterans. Critics of the VA's services suggest that it can foster dependency and may fail to harness the strengths/skills of veterans or to integrate socioeconomic services with biopsychosocial needs. Thus, any organization that purports to address these gaps in serving veterans merits assessment.

3. The Swamp Apes: a nature-based program

The "Swamp Apes" (SA), a non-profit organization in Florida, is the founding chapter of the Volunteer Wilderness Alliance (VWA). Established in 2008, the SA/VWA has a history of engagement with veterans of the US Armed Forces, first responders and other individuals who have had traumatogenic experiences. The motto of the SA is "Endure, Evolve, Achieve". It purports to assist returning veterans in their efforts to regain purpose in their lives post-combat; it does so based on the assumption that by providing a natural context which simulates some harsh conditions that veterans might encounter during deployment, and that requires them to accomplish a demanding and unusual task, they will find a vector to channel their unused intensive energies while providing a valuable service to the Everglades National Park. Within the Park and elsewhere in Florida, the SA are involved in clearing trails, kayaking, hiking, and in ridding the Park of invasive species of plants and reptiles, particularly the Burmese Pythons.

Since 2008, the organization has worked with over 100 veterans and with others whose careers have exposed them to traumatic incidents. So far, 5% of their veteran participants have been female, 10% Latino, 5% African American, 1% Native American and 1% Asian. They have also collaborated with several veterans' organizations, including the Wounded Warrior Project (WWP), the Vietnam Veterans of America (VVA), the Veterans of Foreign Wars (VFW), and the Disabled American Veterans (DAV). A recreational therapist from the Miami Veterans Hospital has both accompanied veterans on these outings and offered the SA as an option, e.g., referred veterans to the program. Many media reports have provided anecdotal evidence of the SA activities in alleviating intrusive, dissociative and other symptoms of PTSD for those who have participated. An example of SA visibility can be found on the Discovery channel's show, "How Do They Do It" (<https://www.youtube.com/watch?v=uYcx62Gy-Tg&feature=youtu.be>).

The SA activities extend beyond the Park; its members have also made presentations on how to identify a community problem and how to address it to MSW students at the University of South Florida. They have also collaborated with scientists at the University of Florida.

The SA does not presume to be a clinical program. Nevertheless, their approach is strengths-based in that it takes into account that veterans come equipped with individual and career-based strengths/skills that they can harness to improve their quality of life and biopsychosocial functioning during re-adaptation to civilian life. However, to maximize therapeutic gains, the SA aspires to integrate social work students to the organization as part of their clinical placements. The present study systematically applied a model for examining SA's recreational activities with veterans as a first step in assessing biopsychosocial functioning and cognitive impact of the SA on veterans. If participants' responses are consistent with the key concepts in the model, there will be preliminary evidence of the potential of SA to be developed into a formal strengths-based recreational therapy intervention in the future.

4. Hawkins model for nature as strengths-based recreational therapy intervention for military service members

Hawkins and colleagues (2016) submit that the popularity of nature-based programs is due to their focus on "the individual's internal strengths, external strengths, and existing skillset. The individual's hopes, aspirations, and values take priority in treatment instead of medically directed care that focuses on reducing symptoms and functional deficits" (p. 58). They maintain that a successful nature-based recreational therapy program with veterans should incorporate:

Existing Military Assets (i.e., dedication to mission...survival skills)...[should] harness Internal Strengths (i.e., interests..., attitudes and beliefs, talents and abilities, skills and competencies,

knowledge, aspirations and goals, character strengths and virtues)...[should] build on External Strengths (i.e., relatives, support, camaraderie); [should] reflect Theoretical Qualities of the Nature-based Experience (i.e., buffering effect, meaningful place...directed attention, sense of awe), and [should] reflect assessable Outcomes of Nature-based Interventions (i.e., enhanced biopsychosocial and cognitive functioning) (pp. 59–66).

If veterans' training in reacting instinctively, behaving with aggression and having a sense of purpose, as well as their energies, could be channeled through activities which require similar skills and emotional levels while enabling them to contribute to a cause that also brings them the respect/recognition they enjoy while in the military, then it might mitigate the biopsychosocial impact of their deployments. Further, it might facilitate an effective transition to civilian life and even improve quality of life to a level that surpasses their pre-deployment state.

5. Methodology

The study was approved by the University of X, Institutional Review Board. Focus groups and interviews were conducted of several key stakeholders, 18 years or older: (1) Returning veterans who had participated in armed conflict; (2) Family members/partners of the veterans who had participated in armed conflict; (3) Health providers who engage returning veterans (e.g. recreational and mental health therapists), and (4) Leadership of the SA.

5.1. Recruitment and participants

The study was conducted between April 2016 and May 2017. In phase 1, veterans were recruited via a flyer on the SA's Facebook page; potential volunteers were directed to contact the Primary Author if interested in being interviewed about their participation in the SA. First responders (i.e., fire-fighters, paramedics) who had participated in SA were also invited, as their jobs involve exposure to life-threatening events. In phase 2, family members were recruited through participating veterans. In phase 3, the Primary Author and her graduate assistant recruited leadership of the SA and a health provider who worked with SA veterans. All were given the option of participating in interviews or in focus groups.

In total, 28 volunteered to participate. Two dropped out because of family illness and with nine (one leader, five veterans, two family members, one recreational therapist) we were unable to agree on a time for the interview, particularly since our university is five hours away from where the participants were located. The final sample comprised 10 veterans (one focus group of five veterans, four individual interviews with veterans and one with a first responder), and seven non-veterans (three family members, one health provider, three SA leaders).

The veterans ranged in age between 29 and 45 years. One was a woman. Six had a Bachelors degree and four had completed some college. All but one were currently employed. Four were married, two were in a long-term relationship, three were single and one was divorced. Six had children. Four had served in the Army, three in the Marine Corps, two in the Navy, and one as a paramedic. All were deployed at least once. The length of their involvement with the SA ranged between 1 month and six years. The non-veteran participants ranged in age between 29 and 60 years; four were women. All were currently employed. Five were married, one was single and one was divorced. Five had children. Three had completed high school, one had completed a Bachelor's degree and one some college, and two had a Master's degree or higher.

To maximize participants' safety, we employed a Licensed Clinical Social Worker to be onsite for the interviews/focus group. Each session lasted about 90 minutes. Prior to each session, a member of the research team read the consent form aloud and asked for permission to audio-record. Data collection proceeded only after participants provided written consent.

5.2. Measures

Sociodemographic data were collected from participants using a brief questionnaire. A list of pertinent open-ended questions enabled focus group and semi-structured interviews. The intent was to assess congruence between the SA's approach/activities and the Hawkins model for nature as strengths-based recreational therapy intervention with veterans.

The following were among questions asked of the veterans and they were appropriately modified for use with others (i.e., family, SA leaders): (1) How did you first hear about SA? (2) What was your first reaction when you heard about SA? (3) What has been your experience with the SA? (4) Please discuss any similarities/differences between participation in SA projects and in the military; (5) What, if any, has been the impact of involvement in the SA on your relationship with your spouse/partner/family/friends? (6) What has been your most positive experience with the SA? (7) Please discuss if you have ever felt unsafe or at risk while participating in a SA project and provide reasons why or why not. The researchers were careful not to mention the concepts from the Hawkins model so as not to influence participants.

5.3. Data analysis

The researchers transcribed each interview and the focus group, and each transcription was uploaded as a "primary document" in ATLAS.ti®. ATLAS.ti® is a software package designed to support qualitative data analysis, by providing an interpretive framework which permits analysis of documents individually but also as a corpus. The process of analysis began with open coding, in which the researchers read each transcript one line at a time, and selected chunks of text that reflected participants' perspectives in response to each of the above questions. After all the documents were open coded, the researchers used the ATLAS.ti® function "Create Report" to produce a master document of all the selected texts organized by code. The selected texts were reviewed again to verify that they were correctly coded. Chunks of texts that did not belong with a particular code were removed or recoded to the appropriate category(ies). During this process, some new codes emerged, and these were reviewed further. The next step in coding was to assess relationships between the initial codes, and those from the Hawkins model, i.e., in terms of congruence or dissonance. Particular attention was placed on codes that might indicate that SA activities were either unsafe or not productive.

6. Findings

Table 1 depicts congruence between concepts from Hawkins and colleagues' model for nature-based programs and findings from our transcripts. Below, we present illustrative quotes.

6.1. Theoretical qualities of nature-based experiences

Theoretical qualities of nature-based experiences, according to Hawkins and colleagues, include: buffering effect, meaningful place, directed attention, escape, remoteness, and sense of awe. These are consistent with the concepts that emerged in our study (i.e., away from hustle and bustle of Miami, nature, service to Park, extreme conditions, attraction to Pythoning as dangerous, serene atmosphere). The following quotes summarize these qualities:

...One, you're helping veterans and you're integrating them back into the environment, into nature itself ...we are doing something different...without it being political or complicated or being able to be put in a situation that you judge your soul because of a job. One of the key things I really love about Swamp Apes is that we have a no-kill policy. So for us, that's another thing. It's like a safe adrenaline rush, per se, and you don't question your morals...It unites you to a team effort, and it takes you away from the hustle and bustle of Miami which is very stressful... And then you go out here and you feel like team...When you get back from your deployment, you're supposed to have a cool down period. Re-acclimation...Swamp Apes is like what they told you that you were supposed to do, but you didn't have a chance to do it, this is your way to do it. We can talk...you have that same bond you do in the military... when we're done, we did something exciting and that's very very beneficial for the

Table 1. Key concepts from Hawkins model for assessing nature-based programs.

Hawkins and Colleagues' Concepts	Corresponding Codes from Open Coding
Theoretical Qualities of Nature-based Experiences Buffering effect Meaningful Place Sense of awe Directed Attention Matches skills Escape, Remoteness	Theoretical Qualities of Swamp Apes Experiences Away from Hustle and Bustle of Miami Service to park and Nation Extreme environmental conditions Nature, Serene atmosphere Attraction of Pythoning as dangerous Opportunity to perform "Manly Role"
Outcomes of Nature-based Interventions Enhanced Cognitive Functioning Recovery from Life's Challenges Prevailing amidst Adversity Developing Emotional Bonds Developing Sense of Identity Mental Clarity Spiritual Strength Social Connection to Others Emotional Control Developing a Sense of Purpose, Place Use of Specialized Skillset	Outcomes of Swamp Apes Involvement Personal Gains Resumption of Adaptive Functioning Transition to Civilian Life Swamp Apes Motto Python Catcher identity Swamp Apes CALL, Swamp Apes Shirts Pride-inducing Camaraderie Diversity plus Inclusion Purpose Paramount Skills not Lost
	Most Powerful Aspects of SA Participation Reduction of Symptoms, Healing Measured Impact on Family Functioning Restored Sense of Purpose, Mission Relationships in Swamp Apes Improved Quality of Life
Internal Strengths and Existing Military Assets Character strengths Persistence Attention to detail Desire to serve Dedication to mission Interests Attitudes, Beliefs Skillset Organization Survival skills Safety management Military specialization skills	Internal Strengths and Existing Military Assets Character strengths Focus, Concentration, Attention Attributes of Team Members Purpose Renewed, Reawakened, Restored Restored Sense of Mission Interests Attitudes, Beliefs Skillset Reliance on Leadership to Insure Safety Promoting Respect Expectations of Leadership Systematic Exposure to Interests, Activities Involves Extension of other Activities
External Strengths Family support and involvement Friendships and social support High expectations and positive attitudes Opportunities for participation/contribution Community and environmental resources Home resources	External Strengths Improved Family Functioning Opportunity to form new relationships Safety and Trust, Structured Activities Characteristics of Swamp Apes Leader(s) Family Reports Contrast in Functioning from Pre-Swamp Apes Involvement

Everglades and our environment.... The experience of it...you kinda live a really *really* good experience of just enjoying being out there, your handling exotic animals...

6.2. Outcomes of nature-based interventions

Hawkins and colleagues' outcomes of nature-based interventions include "improvements in social, cognitive, spiritual domains, as well as outcomes pertaining to identity, purpose, and overall recovery from life challenges" (p. 59). Such outcomes, in this study, coincide with themes such as: personal gains and resumption of adaptive functioning, transition to civilian life, identity as a Swamp Ape, reduction of trauma symptoms, and improvement in the quality of life.

The following testimonial of an SA leader elucidates these outcomes and illustrates that SA intentionally structures activities to simulate military conditions:

The military has this really strong sense of identity, and it's manifested in badges, iconography, even songs and sayings. The marines will say "Ooh-rah!" The army will say "Hoo-ah!" Right? and consistent with that we have "Yeee-hah!" So, it has a reflection of their military presence that they take great pride in. Once they get done with their service, once they get through all this training and have all this camaraderie...it suddenly ends. When we do move into someone's life and affect them positively, they then are able to follow the course of their profession or personal lives now with more ease; their life starts again. Veterans have opened up about not having nightmares anymore. One gentleman had a show at Art Basel after joining us. He started painting again. That experience of him not being able to go in public, and to cocoon went away. He went on to be a leader in the VFW. He stuck with it... and now has a great job...his life is worth living again to him.

One of the veteran participants described the trauma he experienced from his deployment, and how the SA impacted his life.

...We've all experienced trauma... 100%. I mean a lot, a lot; [involvement in the SA] is a distraction from anything else that might be causing you anxiety. I deployed to Iraq with 40 members in my platoon; I came back with 10. The trauma is sometimes so bad, I can tell you in detail, exactly how all these people died; exactly how they looked like. I choose not to. [SA] is very therapeutic for me; it's something I need every so often, and it's been a very, very big help. I definitely think it's something that can help a lot of guys...it helps the healing process...it took a long road of recovery, and associating with good people to get me where I am today. At one point I was staring down the barrel of a gun...that's what I think would benefit veterans...it's worthwhile especially for people who had been in high stress situations that it takes them time to readjust to civilian life.

6.3. Internal strengths and existing military assets

Internal Strengths, according to Hawkins and colleagues, comprise "Interests and Preferences, Attitudes and Beliefs, Talents and Abilities, Skills and Competencies, Knowledge, Aspirations and Goals, Character Strengths and Virtues" (p. 69). The following quotes support that harnessing internal strengths are a salient feature of the SA. In the first quote, a veteran indicates that his involvement in the SA is a continuation of his interest in the outdoors prior to deployment and that SA has enabled him to broaden a nature-based program for inner-city youth:

I was running,—I'm still running a group called Roller Rangers...uh, but I was actually looking for things for the kids to do- pretty much trying to grab the city kids and... and show them something outside of the city. It's giving them a challenge; and in the middle of all this I met Tom. Because of Tom, because of his connections, I was able to take kids camping in the middle of nowhere and show them while we were there what we were doing...cleaning up.

The next quote is in line with attitudes and beliefs that are part of Hawkins' Internal Strengths; in this case, coinciding with our code "Desire to Feel Special" and "Recognition".

I was pretty important where I was at [during deployment]. And then getting out, not to have that anymore, I was just a regular old guy. I mean, with the Swamp Apes, it's that thing of "how many people do you think would actually move into the Everglades where there are gators, snakes, panthers, and all kinds of things that can hurt you? At least you get that extra look. A part of me, gets fulfilled inside knowing that.

The following statement from a family member illustrates the impact of the SA program on making veterans feel special in the context of family and friends and on healing:

He likes to show and teach others how to survive. He loves to learn how to survive. A lot of people look at him like, 'For real? You're in the swamps? And all those areas that many people don't like to go!?' He loves it. He's learned to put the depression away for a while or something so he can participate over here.

The following quotes from veterans describe how their military background becomes useful again in the context of their participation with the SA. They also highlight the skills learned in the military as foundational to safety and confidence as a Swamp Ape in an unpredictable environment like the Park. For some, participation in the SA feels like an extension to the Military in terms of structure, service, identity, and attention to detail:

You don't necessarily get to use the skills that we've been trained for...but when you are in the outdoors, all those skills come back. It gets you back to your training on how to survive... So it's kinda like your time to just be "you".

I like the structure of it [Swamp Apes]...I like the 0800 hours speaking, and military terminology. Meeting up early in the morning in uniform [provided by Swamp Apes]. That stuff helps the mind a lot. ...And chain of command is a big one too... particularly when you have multiple alpha males out there, somebody has to be in charge. It increases the safety measure. But it was exciting, we used our skills, and did something in service to nature. The living in "the now" part...Especially because if you're in a combat setting. You don't have time to worry about anything...If you're worried about something else when you have to be at peak of awareness, you are not helping yourself or anybody else.

6.4. External strengths

Hawkins and colleagues include in the category of External Strengths, concepts such as: family support, friendships and social support, opportunities for contribution, and community and environmental resources. In the present study, external strengths comprise: improved family functioning, opportunity to form new trust-based relationships, and service to Park and Nation.

Support for improved family functioning is provided in a statement made by the mother of a veteran who indicated that her son was combatting severe depressive symptoms upon his return from deployment and that despite her best efforts remained problematic, but that he had developed a new sense of identity and purpose because of his involvement in the SA:

...he was in bed a lot...used to have lot of headaches and he would hear things. He was going through very hard times. And it was hard times for us too because we would see him going through this. We took him to the veterans' hospital and the doctor gave him treatments. But he was really bad ... And then he got involved with Tom and Swamp Apes, and he shows us those snakes and other things they catch, and he's all excited. He's learned a lot. We learned a lot. I've seen a big change. He's more friendly, active, and responsible. He's found a lot of relief...the stress was taken away by getting involved with Swamp Apes.

In the following quote, a veteran shared that he had heard about SA and its capacity to help with PTSD via word-of-mouth as he volunteered in the Everglades in a different capacity. Subsequently, a friend enabled him to reach the SA's leader and through his personal experience, he identified the SA as not only being instrumental in reducing symptoms of stress-related disorders, but in enabling him to demonstrate a valued virtue, service through volunteering.

...not only just helping veterans with their PTSD, but we're also doing something for the park itself. The best work comes from volunteer work, because you do it out of the kindness, love and passion that you have for what you're doing.

Others spoke about how the SA has allowed them to do environmental work:

I personally love that we've used it to help the environment. It's positive!

...you're in an environment that is enjoyable, you're helping preserve an environment that is the only one of its kind in the world. It's not something that everybody can say that they can participate in or do ... it's a worthy adventure.

Support for reduction of symptoms was associated with team. The following participants view the traumatic experiences from a strengths perspective, as catalyst for trust-based bonds with others, as they share SA activities in a context where they are certain of other's support:

Something like this is highly beneficial to guys and girls who have suffered major loss. Because you know the experience [of Swamp Apes], is what's going to help create a bond with others. It might be perfect strangers and then you start bonding with people again and you see, "It is not so bad to make new friends again." Getting out, you can actually talk about your problems. You can open up and have no one look at you and judge you. So that's what I really like about it. It's what it's designed to be, is what I like...Slowly build trust. Camaraderie and all that.

You know they create a bond with another person again, and they start feeling again. They stop fearing so much about being around other people. I mean it can have unlimited applications for helping them get back to doing things.

7. Limitations

This study was exploratory, targeting a small sample of stakeholders, therefore, while insightful information was obtained, it cannot be generalized to all SA participants. Future studies should include larger samples of veterans and family members to obtain confirmatory or contradictory findings to what is reported herein.

8. Discussion

The study findings are consistent with the Hawkins model and indicate that the SA as a nature-based program appears to show promise in terms of behavior change, improvement in the quality of life, and promotion of biopsychosocial growth and healing. Findings offer resolve for continued engagement of veterans and others who have had similar traumagenic experiences with nature-based activities that espouse a theoretical framework such as is offered in the Hawkins model. Findings further support the importance of a strengths-based approach in developing nature-based interventions for veterans. Swamp Apes activities facilitate veterans' re-acclimation to civilian life in a familiar, trust-based, valued and structured fashion, in a safe and remote/buffered context that allows them to harness their character strengths and military skills to continue service, to form new bonds, and to refocus their energies in a context that permits recovery of their sense of identity and which fosters a sense of pride.

8.1. Implications for research and practice

The present study responded to the Institute of Medicine's call for more research on interventions for PTSD symptomology among veteran populations (Institute of Medicine, 2014). The positive outcomes of SA activities reported thus far can be strengthened by the inclusion of clinical social workers or mental health counselors and recreational therapists who could accompany the SA members on their treks in search of invasive species; such professionals could comprise a safe and trained resource for veterans or other SA participants who might benefit from it. Eventually, these professionals can help further develop the SA into a formal therapy program embedded in the practice standards of the American Therapeutic Recreation Association which can then be tested for its effectiveness in enhancing the biopsychosocial functions of veterans and others. Second, as all of this study's participants asserted, the SA can serve as an important model for other trauma and stress impacted populations and their loved ones, to regain their previous level of functioning, building on valuable skills and training, while providing a service to local and national communities, and reclaiming a sense of purpose and mission. If future studies confirm SA's effectiveness in improving the quality of life of trauma and stress impacted populations, it can potentially be offered as an evidence-based intervention.

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Author details

Manisha Joshi¹

E-mail: manishaj@usf.edu

Joshua Zaris Goldman¹

E-mail: jzgoldman@mail.usf.edu

¹ School of Social Work, College of Behavioral and Community Sciences, University of South Florida, 13301 Bruce B. Downs Blvd., MHC1400, Tampa, FL 33612, USA.

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