

Benefits of Brazilian Jiu-Jitsu in Managing Post-Traumatic Stress Disorder: A Longitudinal Study

Kelly Weinberger and Tracey Burraston

Abstract

The longevity of the United States' armed conflicts has resulted in a substantial portion of military personnel being at risk for post-traumatic stress disorder (PTSD). Fewer than half of veterans needing mental health services receive treatment for PTSD. For those who do receive treatment, less than one third are receiving evidence-based care. Additionally, one third of first responders develop PTSD. The need for additional treatment options is staggering. Brazilian Jiu-Jitsu (BJJ) is evaluated here as a complementary and alternative method (CAM) that promotes discipline, structure, camaraderie, concentration, and mind-body coordination. These effects are measured in terms of their impact on veterans' capacity to manage PTSD symptoms. Participants for this longitudinal study include armed-service personnel, veterans, and first responders. There were 32 participants, ranging in ages from 25 to 50 years old, with no prior BJJ training. Participants completed five questionnaires both prior to starting the study and after every 20 hours of BJJ that they completed. All participants initially displayed symptoms of PTSD, which significantly reduced over the course of the study. Participants report that the therapeutic benefits of BJJ practice include assertiveness, self-confidence, self-control, patience, empathy, empowerment, improved sleep, and mindfulness. Qualitative data was used to determine impact of these beneficial capacities to manage PTSD symptoms, and to assess the attractors that allow veterans to initiate and stick with BJJ training in community settings. These findings suggest that the inclusion of opportunities and financial support for veterans to practice BJJ as a form of somatic psychotherapy would be highly beneficial.

Many U.S. veterans suffer from untreated post-traumatic stress disorder (PTSD). Long wait times and overcrowded facilities at U.S. Department of Veterans Affairs (VA) medical centers contribute to this problem, as does the social stigma regarding mental health. Since the attacks of September 11, 2001, the ensuing conflicts in Iraq and Afghanistan have contributed to substantial visible and invisible wounds for U.S. soldiers. PTSD, which affects approximately 8 million Americans each year, is far from a military-only disorder (PTSD: National Center for PTSD, 2018). But veterans have additional challenges when facing this debilitating disorder due to barriers in accessing adequate treatment (U.S. Department of Veterans Affairs, 2015).

PTSD prevalence in returning service members varies depending on wars, eras, and service branch. A 2014 VA study found that of the 60,000 Operation Enduring Freedom (OEF) and Operation Iraqi Freedom (OIF) veterans screened for PTSD, 13.5% of study participants screened positive (Dursa et al., 2014). In addition, it is estimated that 30% of first responders develop behavioral health conditions including, but not limited to, depression and PTSD (Abbot et al., 2015).

The RAND Center for Military Health Policy Research reported that only half of returning veterans who needed mental health services sought help from a provider, and of those receiving treatment for PTSD, just slightly more than half of them received minimally adequate treatment (Tanielian et al., 2008). Furthermore, a 2013 report from the VA and Department of Defense (DoD) states that veterans account for approximately 20% of the deaths from suicide in the United States, with estimates that 18–22 veterans die from suicide each day. Veterans are also more likely than their civilian counterparts to own firearms, which is a risk factor for suicide attempts being more successful in this high-risk population. The need for additional community-based treatment options is therefore crucial.

The use and optimization of non-traditional therapies, such as somatic psychotherapy, for active-duty service personnel, veterans, and first responders with PTSD can provide this population with a community support base, structure, physical fitness, and a means to complete mental, spiritual, and emotional healing. Somatic psychotherapy utilizes the awareness of sensorial experience and embodiment to integrate the mind and body in

the process of healing (Peña, 2019). The practice of martial arts promotes discipline, structure, camaraderie, self-control, concentration, and mind-body coordination. Martial arts are carried out through ritualization of combat moves (*katas*), the requirement of respect to the teacher (*sensei*), to the practice space, and to one another. Martial arts also highlight the importance of mindfulness meditation and teaching of philosophical concepts and values such as peace, benevolence, humanity, and self-restraint (Nosanchuk & MacNeil, 1989). The therapeutic benefits of martial arts for those experiencing PTSD have been known to reduce anxiety and depression, while improving psychological well-being (Wang et al., 2014). Martial arts are more than just sports or avenues to physical fitness; they are paths to better physical, mental, emotional, and spiritual health and well-being, and studies find that they promote empowerment, self-protection, and self-development (Phillips, 2011).

Brazilian Jiu-Jitsu (BJJ) is a form of martial arts that has until recently been overlooked in terms of its therapeutic benefits for PTSD. Whereas many martial arts schools teach self-defense, BJJ is mainly practiced as a combat sport. The aim of BJJ is to bring the fight to the ground, control the opponent's movements, and apply a submission hold (Pope, 2019). Although many people have espoused the psychological and physical benefits of BJJ, as of 2021 there has been only one formal study on how BJJ reduces symptoms of PTSD¹ (Willing et al., 2019). Participants in this study demonstrated clinically meaningful improvements in their PTSD symptoms, decreased symptoms of major depressive disorder, decreased generalized anxiety, and decreased alcohol use. The present study is intended to expand on this earlier work.

Methodology

Participants for this longitudinal study included 32 armed-service personnel, veterans, and first responders who resided in Arizona, who had not received previous BJJ training, and whose ages ranged from 25 to 50 years. Research for this study has been ongoing since it was first implemented in August 2016. The study was initially approved by Columbia University Institutional Review Board.

Participants completed five questionnaires both prior to starting the study and after every 20 hours of BJJ that they completed. The following questionnaires were used: Primary Care PTSD Screen (PC-PTSD), Trauma Screening Questionnaire (TSQ), Generalized Anxiety Disorder 7-item (GAD-7) scale, Patient Health Questionnaire-9 (PHQ-9), Generalized Anxiety Disorder (GAD) Screening Tool.

In addition to the quantitative questionnaires listed above, participants took part in semi-structured qualitative interviews throughout the course of the study, with an emphasis on discussing how BJJ works to manage PTSD, and why. Furthermore, an additional qualitative survey was sent out through social media platforms to veterans across the United States who practiced Jiu-Jitsu. Recipients were asked if they had experienced any of the following benefits from practicing Jiu-Jitsu: improved physical fitness, self-defense skills, confidence, a sense of community, reduced anxiety, increased calmness, structure, focus, empathy, and improved sleep.

The military-connected author involved in this study participated in the collection, analysis, and interpretation of both quantitative and qualitative data.²

Results of Quantitative Study

Analysis of overall data gathered from the participants questionnaires are presented in the following charts. Through comparison of the spectrum of questionnaire types, we can view the progression of symptoms reported throughout the length of the study. All participants displayed evidence of significant symptoms of PTSD.

All of the participants' initial scores on all surveys demonstrated clinically significant PTSD symptoms. Throughout the study the questionnaires were repeated every 20 hours of BJJ practice. The participants showed marked decrease in scores on the questionnaires with each subsequent reporting. Figure 1 illustrates the mean scores of all questionnaires for participants with corresponding hour of training completed. Further analysis of the individual questionnaires with mean scores and standard deviations is broken down further in subsequent figures. Figure

¹PTSD is characterized by four clusters of symptoms: (1) re-experiencing; (2) avoidance symptoms; (3) negative changes in cognitions and mood; and (4) alterations in arousal or reactivity symptoms after exposure to trauma. (Lancaster et al., 2016).

²As part of this Special Edition, research that has been undertaken under primary leadership of service members, veterans, dependents and survivors (SMVDS) students has been selected. Identification of SMVDS role is noted accordingly.

Figure 1. Mean Scores of Questionnaire Data

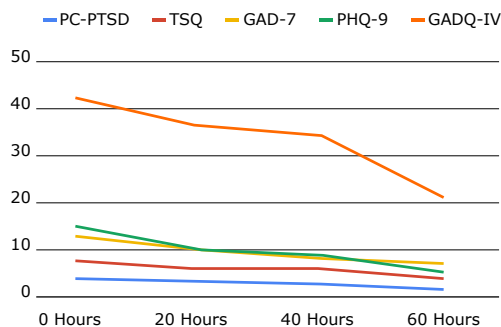


Figure 2. PC-PTSD Score Means with SD

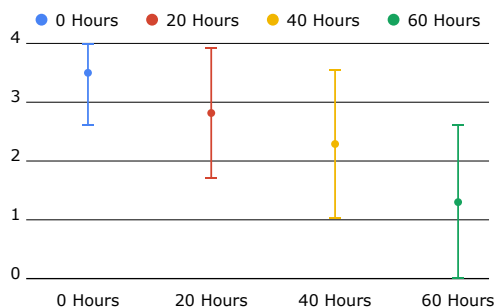


Figure 3. TSQ Score Means with SD

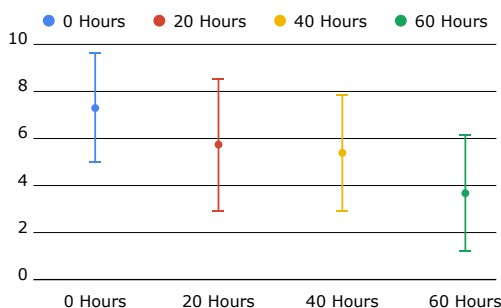


Figure 4. GAD-7 Score Means with SD

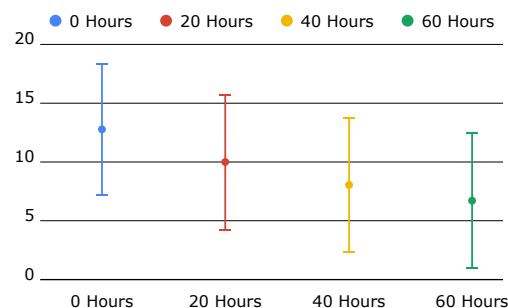


Figure 5. PHQ-9 Score Means with SD

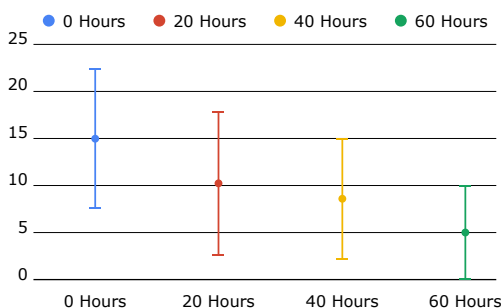
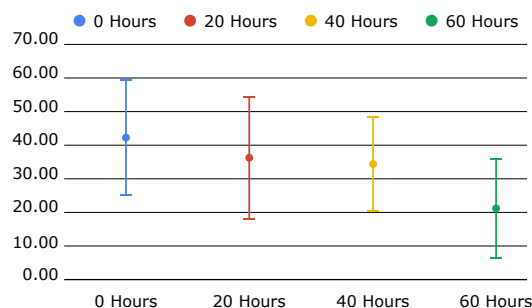


Figure 6. GADQ-IV Score Means with SD; CI 95%



Note. Figures demonstrate the decrease in symptoms/scores according to the various questionnaires through the hours of BJJ completed. The standard deviation is represented on the datapoints.

2 illustrates the PC-PTSD results which decreased 37% from a baseline of $3.5 \pm .88$ at zero hours, 2.83 ± 1.11 at 20 hours, 2.30 ± 1.25 at 40 hours, 1.3 ± 1.34 at 60 hours. Figure 3 illustrates TSQ scores which decreased 51% from a baseline of 7.31 ± 2.32 at zero hours, 5.75 ± 2.80 at 20 hours, 5.4 ± 2.46 at 40 hours, 3.7 ± 2.54 at 60 hours. Figure 4 illustrates that the participants' GAD-7 scores decreased 52% from a baseline of 12.72 ± 5.57 at zero hours, 9.92 ± 5.76 at 20 hours, 8.00 ± 5.72 at 40 hours,

6.67 ± 4.25 at 60 hours. Figure 5 illustrates the mean PHQ-9 scores which decreased 39% from a baseline of 14.90 ± 7.38 at zero hours, 10.16 ± 7.63 at 20 hours, 8.50 ± 6.31 at 40 hours, 5.10 ± 4.9 at 60 hours. Finally, Figure 6 illustrates the GAD-IV scores which decreased 49% from a baseline of 42.13 ± 17.36 at zero hours, 36.17 ± 18.36 at 20 hours, 34.30 ± 13.99 at 40 hours, 20.80 ± 14.93 at 60 hours.

Results of Qualitative Study

The quantitative results presented above show that participants who regularly practice BJJ report improved scores in standardized tests that measure PTSD symptoms. The purpose of the qualitative part of this study was to determine how BJJ practice might support evidence-based therapies for PTSD, and why the veterans involved in this study were able to stick with the practice in a community setting. The qualitative data was extrapolated from multiple group and individual interviews with participants through a process based on grounded theory. The authors coded the data, compared data and codes, and identified analytic leads and tentative categories to develop through further data collection (Charmaz & Belgrave, 2015). Both authors interpreted the data using keywords, and organized participant responses into the following themes; managing aggression, sublimation, submission, empowerment, discipline, social support, and mindfulness.

In addition, a qualitative survey with five questions was sent out via social media to veteran BJJ practitioners, prompting 16 responses. The questions included:

1. Are you a veteran of the military or a first responder?
2. Do you practice Brazilian Jiu Jitsu?
3. Do you consider your gym/dojo/academy/center veteran friendly?
4. What do you feel makes your center Veteran friendly or not friendly?
5. How can other centers create a more veteran friendly atmosphere?

The authors eliminated one response from a participant who did not affirm to be a veteran of the military or first responder. The authors then extrapolated data from the remaining 15 responses to incorporate suggestions for how BJJ academies could better encourage, support, and promote the veteran community.

Benefits of the Practice of Brazilian Jiu Jitsu

Managing Aggression

Given the aggressive connotations associated with some martial arts, it may be counterintuitive to learn that BJJ is a useful resource for managing the fight-or-flight response associated with combat-related PTSD. As a philosophically grounded somatic practice, martial arts training can be a powerful resource for learning how to control the body while exploring ways to let go

of habitual ways of responding and interacting (Phillips, 2011).

Prior studies show that the practice of BJJ can lead to the reduction or elimination of the frequency of aggressive behavior (Wojdat & Ossowski, 2019). As BJJ trainings teach forms of engagement appropriate to the situation and level of threat, participants who train learn how to deal effectively with emotions rather than falling into panic. In fact, studies show that long-term Brazilian Jiu-Jitsu practice significantly reduces levels of aggression for both men and women, and that BJJ is suitable for preventing and treating excessive and uncontrolled aggression in social relations (Wojdat & Ossowski, 2019). Participant A stated:

BJJ has definitely decreased my PTSD symptoms. I sleep better than I have in years. I'm less hypervigilant and I have far less aggressive tendencies. I believe this is due to what I refer to as 'supervised mutual aggressive expression' all bound together with consent and trust. Specifically, I can legally express my aggressive disposition with a partner that gets to practice the same with me. So much in my experience with psychiatry involves medications to pacify aggression. BJJ feeds and channels the aggressive nature in me to be productive.

Sublimation

BJJ can be used as an effective tool that demonstrates Freud's concept of sublimation, a process in which socially unacceptable behaviors are internally repressed and later channeled into behaviors that can expel aggressive and provocative drives in a manner that is socially acceptable (Collura, 2018). Many definitions of violence assume a negative moral judgment and are viewed as fundamentally illegitimate. BJJ allows participants to direct aggressive drives towards socially valued goals, including customary norms in times of war, rites of passage and educational means in various cultures, and various medical, scientific, body care, entertainment, and other sports practices (Even-tzur & Hadar, 2019).

Participants reported that they could work through the fight-or-flight response associated with PTSD using BJJ principles, in a manner similar to that accomplished by prolonged exposure therapy (PE). PE is considered to be a highly efficacious and effective treatment for PTSD, ameliorating a wide

variety of related symptoms, including anxiety, depression, functional impairment, mild suicidal ideation, and anger (Brown et al., 2019). BJJ allows participants to explore the mental pathways of “fight or flight” that were set in the military, and it re-conditions participants to fight within a set of conditions that serve as new “rules of engagement” (Collura, 2018).

Brazilian Jiu Jitsu requires submission as the experience of being physically dominated cultivates humility and understanding of one’s limits. Tapping out is the ultimate admission of defeat because it signifies recognition that further application of the technique could have led to unconsciousness, injury, or death (Pope, 2019). Participant B stated, “In BJJ, you have some control in what would be an uncontrolled situation elsewhere, as you can tap out at any time.” This act of tapping on your training partner’s body with an open hand, is an admission that such techniques have been successfully applied, before unconsciousness or injury occurs (Pope, 2019).

When reflecting on the experiences in a recent tournament, Participant C stated:

I was really concerned with hand-to-hand combat, and I was afraid I was going to lose it. In the military, we answered everything with “kill.” But in Jiu-Jitsu, tunnel vision is counterproductive. You’ve got to be centered and just flow. There is no room for ego. You can’t get mad because then you’ll just get smashed. You have to be controlled. It’s productive as opposed to destructive. This has really helped with my road rage. Whenever someone cuts in front of me now, I just take that breath and let it happen. You learn self-control and that you are responsible for your own safety. I have far more patience than I used to.

The practice of BJJ requires a high degree of trust and builds confidence while teaching patience. BJJ encourages practitioners to live in the moment and deal with the immediate; when participants come onto the mat, they immediately learn what they can and cannot control. It takes trust, and it takes submission.

Empowerment, Confidence, and Discipline

“Empowerment” was a word that came up many times during qualitative interviews. Empowerment has been described as having

mental, emotional, spiritual, and physical resources, or pre-conditions, to take action in/on one’s life and the agency to move forward, that is, the ability to define one’s goals and to act on them (Phillips, 2011). Participant D reported that the physical activity associated with BJJ builds physical and psychological strength:

I have so much more confidence now than I ever did. I feel strong. BJJ teaches balance, control, self-control, empathy, trust, and faith. I first started Jiu Jitsu for the self-defense aspect of it. Later on it became the camaraderie, discipline, and all the other things I missed so much about the military...I’m clean and sober almost five months, I’m in the best shape of my life since being out of the military, I’m far more confident, and I rarely get depressed or anxious. I’d say my quality of life has improved to a point far beyond what I ever thought it would.

Brazilian Jiu-Jitsu is goal-directed, providing practitioners with the opportunity to set goals for nutrition, physical training, and scheduling. This discipline transfers to everyday life. Participant D also reported that through this empowerment, he was able to return to school and excel due to the tools that he learned from BJJ. “It’s brought discipline into my life. If I want something now, I go for it.”

Social Support/Sense of Purpose

In addition to the physical and psychological benefits of BJJ, the practice offers social support. Participants in this study who experienced isolation—a classic symptom of PTSD—reported that the BJJ unit mimicked the brotherhood that is traditionally found within the military. The camaraderie, support, and accountability to the group motivated participants to attend regular classes and venture further out into society, often together.

Brazilian Jiu Jitsu provides participants with a sense of purpose, the lack of which many veterans struggle with when transitioning from the military. Learning BJJ etiquette and techniques involves ritualistic hurdles that participants undergo as their competence progresses. The “tribal nature” that is found within respective BJJ academies demands allegiance, loyalty, and doing one’s best in order to represent the credibility of the BJJ academy (Collura, 2018). The representation of the senior

instructor, their lineage, and the etiquette that is fostered within the respective school also foster cultural elements that resembles “mission-focused identity,” which is a core aspect of military culture (Collura, 2018). Participant E reported:

One of the biggest struggles I had transitioning out of the military, was that I did not have anything to fight for anymore, and I didn't have that brotherhood and mission. Jiu-Jitsu, more than anything else, is a family unit, and brings that brotherhood back. It helped with reintegration so much. When I first went to tournaments, I expected this animosity from civilians, but everyone was shaking hands and hugging, which completely blew away the myth of “us versus them.” We are more connected to the civilian community than we have ever been.

Participants reported that this sense of brotherhood increased their sense of purpose; as they trained together, they trained harder for each other. As they fought together, they fought harder for each other. Participant A stated:

It builds a bond between people, which is a remedy for isolation. It brings peace and clarity to the mind, builds empathy for your classmates and other people, and the benefits to a person struggling from PTSD-related aggression to have grown in empathy is priceless! Empathy and forgiveness for yourself, and others, can prevent suicide and pointless acts of violence against other people.

Cultural Rituals

When military service members or BJJ practitioners wear their uniforms, it paints a picture of who they are and what their experiences are, and it symbolizes how they should conduct themselves (Collura, 2018). Participants found that putting on their *gi* (a lightweight, two-piece garment traditionally worn in martial arts, pronounced “gee”) with the corresponding belt provides the physical shifts and rituals necessary to frame their warrior identity; yet the *gi* is a reminder that BJJ is a sport rather than combat in the militaristic sense. In BJJ, the various belt colors correspond with certain levels or ranks; white for building the foundation of the BJJ practice; blue for developing technical proficiency; purple for

learning how to use skills and strategies to suit the students' own style of practice; brown for refining students' techniques and learning how to think conceptually; and black for those students who have achieved the highest levels of practice. The black belt levels are the start of students' journeys of mastery, teaching, and reflection of how the practice is applied to their daily lives.

Although many practitioners utilize BJJ to fulfill combative aspirations, practitioners often find that the cultural rituals foster a strong sense of community that encourages healthy social interactions, promotes understanding of both stress and self, and contributes to positive physical habits that can mitigate substance abuse as well as sedentary behavior (Collura, 2018).

Flow

Perhaps one of the primary ways in which BJJ manages PTSD is through the experience of “flow,” a state that occurs when a person maintains deep focus while performing an activity, becoming one with the activity while losing consciousness of time and being detached from the ego (Kohoutková et al., 2018). This flow state is often connected with intrinsic motivation, and brings feelings of happiness, pleasure, and satisfaction (Kohoutková et al., 2018). Participant F said, “We appreciate, or perhaps more important, get addicted to those freeing moments, because with PTSD they are few and far between.”

As the practitioner's competence in BJJ progresses, the ritualized moves create muscle memory. To achieve flow state in BJJ, there needs to be a balance between the level of the challenge and the grappler's skill set, which need to match (Pope, 2019). Participant G reported:

Jiu-Jitsu gives you amazing clarity. When I drive home every night, I'm more centered than I've ever been. Nothing else works this way. It helped so much just getting out of my head. I was able to get off all the meds I was prescribed and go back to school.

Pope (2019) describes three ways that BJJ provides practitioners with the opportunity to embody spirituality. First, the engagement in a physical activity reminds practitioners of embodiment of their spirituality and provides them with a corrective practice to replace “escapist theology” (Pope, 2019, para. 39). Second, BJJ allows the practitioner to reach a flow state in which the

pursuit of excellence matches the physical and psychological challenges of the activity. Third, and above all, BJJ teaches humility.

Making BJJ Veteran Friendly

Brazilian Jiu Jitsu academies can offer structure for veterans that enhances the warrior ethos that was ingrained within service, while allowing veterans to restructure their perspective on how their understanding of violence, trauma, and combat plays out in civilian life (Collura, 2018). This section examines ways for how martial arts academies might offer more veteran-friendly environments.

During the course of this study, a brief survey was sent through social media groups to veterans across the United States who practice BJJ. Survey questions asked veterans if they considered their gym/dojo/academy/center to be veteran-friendly, and if so, to describe what aspects of the center were veteran-friendly, and to suggest how other centers could create veteran-friendly atmospheres. Out of the 15 responses to this survey, 100% of respondents considered their respective academies to be veteran-friendly. Respondents reported believing that their centers were veteran-friendly because they allowed veterans to train alongside other veterans; hired instructors who understood PTSD symptoms and offered space or support when needed; offered free or discounted training for veterans; provided open mats for veterans; permitted veterans to sew military patches on their *gis*; and were veteran-owned and -operated.

In addition, survey respondent suggested that gyms could be made more veteran friendly by offering safe and supportive environments that avoid stigmatizing persons with PTSD. One survey participant suggested:

Just make veterans welcome. Offer a safe place to train and let them know it's ok to have physical and mental difficulties and this should not hold them back from trying something new. Let the veteran know it's not about fighting. It's about respect for BJJ.

Another survey respondent suggested that gym owners should "treat veterans like everyone else. They are there to train. Ask about service and be a friend." Respondents also suggested that encouraging veterans to assimilate to the culture of the gym at their own pace, would be beneficial. As would discounted or free training for veterans.

Survey respondents also recommended that gym owners and BJJ instructors who wish to make their facilities more veteran-friendly consult with other instructors who run veteran-friendly BJJ programs and discuss what works, what is needed, and why. One of the respondents suggested that representatives from their own program (not the program where the study was implemented) be involved at every academy across America, no matter how small, to encourage veterans to train by offering free and/or discounted training.

Conclusion

Brazilian Jiu Jitsu promotes growth, encourages socialization, generates exercise, creates a healthy and acceptable outlet to build upon combative identity, and provides a culture that is rooted in familiar notions of hierarchy that give purpose to participants on the mat and subsequently in the civilian world (Collura, 2018).

While BJJ does not replace cognitive therapies and/or medications, it provides physical, social, psychological, emotional, and spiritual means to manage the components of PTSD, and it can be a highly effective form of somatic psychotherapy. As Csikszentmihalyi (1990) stated:

The best moments in our lives are not the passive, receptive, relaxing times...The best moments usually occur if a person's body or mind is stretched to its limits in a voluntary effort to accomplish something difficult and worthwhile (p.2).

The clinical approaches that are typically pushed at VA facilities can be foreign and intimidating for many veterans, compounded with social stigma associated with mental illness and difficulties getting timely and adequate care (*Returning Home*, 2014). BJJ offers an alternative means of stress and trauma mitigation that focuses on physical fitness, interactions with peers, biological and somatic release, social cultivation, and reframing of the warrior identification (Collura, 2018). The results from this study show that the practice of BJJ is a powerful tool for alleviating the overwhelming symptoms of PTSD. Going forward, we suggest that the VA explores how to provide veterans with opportunities and financial support to practice BJJ as a form of somatic psychotherapy. The physical and psychological benefits of BJJ, along with the camaraderie and identity reformation that are essential aspects of reintegration, provide an alternative to the more

expensive traditional clinical approaches and dependence on prescription medications.

References

- Abbot, C., Barber, E., Burke, B., Harvey, J., Newland, C., Rose, M., & Young, A. (2015). What's killing our medics? Ambulance service manager program, Conifer, CO: Reviving Responders. Retrieved from Reviving Responders: <http://www.revivingresponders.com/originalpaper/wdlgreq94vhu8rxrpbvgetg2dv0167>
- Brown, L.A., Zandberg, L.J., & Foa, E.B. (2019). Mechanisms of change in prolonged exposure therapy for PTSD: Implications for clinical practice. *Journal of Psychotherapy Integration, 29*(1), 6–14. doi: 10.1037/int0000109
- Charmaz, K., & Belgrave, L.L. (2015). Grounded theory. In G. Ritzer (Ed.), *The Blackwell Encyclopedia of Sociology* (pp.2148–2152). Retrieved from <https://doi.org/10.1002/9781405165518.wbeosg070.pub2>
- Collura, G.L. (2018). *Brazilian Jiu Jitsu: A tool for veteran reassimilation* (Doctoral dissertation). Retrieved from <https://scholarcommons.usf.edu/etd/7277>
- Csikszentmihalyi, M. (1990). *FLOW: The psychology of optimal experience* (1st Harper Perennial Modern Classics ed., Harper Perennial modern classics). Harper Perennial.
- Department of Veteran Affairs/Department of Defense. (2013). *VA/DoD clinical practice guideline for assessment and management of patients at risk for suicide* (Version 1.0). Retrieved from https://www.healthquality.va.gov/guidelines/MH/srb/VADODCP_SuicideRisk_Full.pdf
- Dursa, E.K., Reinhard, M.J., Barth, S.K., & Schneiderman, A.I. (2014). Prevalence of a positive screen for PTSD among OEF/OIF and OEF/OIF-era veterans in a large population-based cohort. *J Trauma Stress, 27*, 542–549.
- Even-tzur, E., & Hadar, U. (2019). Socially accepted violence by “agents of law”: Sublimation of aggression as a model. *Aggression and Violent Behavior, 47*, 21–28.
- Institute of Medicine. Returning Home From Iraq and Afghanistan: Assessment of Readjustment Needs of Veterans, Service Members, and Their Families. (2014). *Military Medicine, 179*(10), 1053–1055. <https://doi.org/10.7205/MILMED-D-14-00263>
- Kohoutková, J., Masaryk, P., & Reguli, Z. (2018). The experience of the state of flow in Brazilian Jiu-Jitsu. *Ido Movement for Culture. Journal of Martial Arts Anthropology, 18*(3), 1–6. doi: 10.14589/ido.18.3.1
- Lancaster, C.L., Teeters, J.B., Gros, D.F., & Back, S.E. (2016). Posttraumatic stress disorder: Overview of evidence-based assessment and treatment. *Journal of Clinical Medicine, 5*(11), 105. <https://doi.org/10.3390/jcm5110105>
- Nosanchuk, T.A., & MacNeil, M.L. (1989). Examination of the effects of traditional and modern martial arts training on aggressiveness. *Aggressive Behavior, 15*(2), 153–159. Retrieved from [https://doi.org/10.1002/1098-2337\(1989\)15:2<153::AID-AB2480150203>3.0.CO;2-V](https://doi.org/10.1002/1098-2337(1989)15:2<153::AID-AB2480150203>3.0.CO;2-V)
- Peña, J.J. (2019). The embodied intersubjective space: The role of clinical intuition in somatic psychotherapy. *Body, Movement & Dance in Psychotherapy, 14*(2), 95–111.
- Phillips, M.A. (2011). Classical martial arts training: A zen approach to health, wellness and empowerment for women. *Canadian Woman Studies, 29*(1/2), 67–71.
- Pope, M. (2019). Flow with the go: Brazilian Jiu Jitsu as embodied spirituality. *Practical Theology, 12*(3), 301–309. Retrieved from <https://doi.org/10.1080/1756073X.2019.1595319>
- PTSD: National Center for PTSD. (2018, October 2). *How common is PTSD in adults?* U.S. Department of Veterans Affairs. https://www.ptsd.va.gov/understand/common/common_adults.asp
- Tanielian, T., Jaycox, L.H., Schell, T.L., Marshall, G.N., Burnam, M.A., Eibner, C.,... Vaiana, M.E. (2008). *Invisible wounds: Mental health and cognitive care needs of America's returning veterans*. Santa Monica, CA: Rand Corporation. Retrieved from https://www.rand.org/pubs/research_briefs/RB9336.html
- Wang, F., Lee, E.K., Wu, T., Benson, H., Fricchione, G., Wang, W., & Yeung, A.S. (2014). The effects of tai chi on depression, anxiety, and psychological well-being: A systematic review and meta-analysis. *International Journal of Behavioral Medicine, 21*, 605–617. doi:10.1007/s12529-013-9351-9
- Willing, A.E., Girling, S.A., Deichert, R., Wood-Deichert, R., Gonzalez, J., Hernandez, D.,... Kip, K. (2019, April 20). Brazilian Jiu Jitsu training for US service members and veterans with symptoms of PTSD. *Military Medicine, 184* (11–12), E626–E631.
- Wojdat, M., & Ossowski, R. (2019). Comparative analysis of the levels of aggression of women and men training Brazilian Jiu - Jitsu in the light of the possibilities for therapeutic purposes. *Journal of Education, Health and Sport, 9*(5), 319–338.

About the Authors

Kelly Weinberger served in the Military Police in the United States Army and has a master's degree in psychology, specialization in military psychology from Adler University. Tracey Burraston has a master's degree in psychology, specialization in military psychology from Adler University and is pursuing a master's in clinical mental health with a specialization in trauma as well as a PhD in psychology at Grand Canyon University.