Phenomenological Study on Use of Sports and Exercise for Veterans with PTSD

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I have no known conflict of interest to disclose.

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Abstract

This phenomenological research was intended to explore the effectiveness of sports and exercise to decrease or manage D-PTSD symptoms in veterans. The study was framed around four research questions: How do veterans describe the impact sports and exercise have on their D- PTSD?, When there are PTSD symptoms being experienced prior to engaging in a sport or exercise, how does the veteran feel after the sport or exercise is completed?, What do veterans describe as the primary catalyst that draws them to engage in combative sports?, What is the holistic connectedness with sports and exercise for veterans with D- PTSD and how are those defined? Participants were twice observed in person in their activity routine and interviewed before and after each activity. Cognitive images of their PTSD and responses to questions about the image were requested. Three themes emerged from examination of veterans' personal narratives regarding the use of sports and exercise (including combative sports) in managing D-PTSD symptoms: effects of activity, military resemblance, and confronting triggers. The study contributes to the existing literature by introducing a new way to examine how combative sports may provide an effective alternative treatment for D-PTSD.

Keywords: veterans, military, PTSD, counseling, peer support, physical fitness, sports, combat, weightlifting, stigma, suicide, combative sports, risk factors, deployment, fighting, martial arts, Persian Gulf War, OEF, OIF

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Dedication

This dissertation is dedicated to all veterans who have experienced combat and still fight the inner fight many will never understand. Never give up the fight; many of us are fighting for you to continue forward. Many men and women gave all and so many continue to give mentally. This dissertation is a start to have your six and push through the continuous battles in ways that help manage. It is hoped that there will be more studies that build on the significance of sports and exercises veterans engage in presently and to learn from the established activities the veterans have taken part in for a period of time.

Acknowledgements

First, I want to start with thanking the love of my life. You have been my backbone and guide on this journey as your support, love, and shared knowledge has been invaluable. Your reassurance and support carried me through it all. When I was ready to fall, you held my hand and motivated me to move forward. You are an energy and love that is unmatched. You are an answer to my prayers and have the most amazing soul.

To my children, your laughter and love of believing in me leaves me in awe. Without you, I would not have gotten as far as I have as you are the reasons I push hard in life. My sons, you two are amazing young men who are the best parts of me. You will only become more powerful and wonderful in life. My rainbow daughter, you are a beautiful flame of strength. You have your father's soul and my laughter and high energy.

I would like to thank Dr. Cynthia Downey, my dissertation chair, Dr. Margaret Gopaul, part of chair committee, and Dr Fiala, my editor for believing in my dissertation focus and the potential it could have. Your guidance and suggestions helped me open my eyes to critical things I overlooked. You have welcomed me into this level in the field and I aim to keep growing in it.

I also want to thank my best friend. You have been Jiminy Cricket on my shoulder when the pressure was on. There was always a reminder that I could take on anything and you were always at the ready to help where you could when asked.

Lastly, I want to thank the veterans that participated in this study. I know it took a lot to be vulnerable in your environment, yet you still allowed me to be in it. Your strengths to persevere and continue moving forward leaves me speechless. Thank you for trusting me to represent you, as it can lead to paths that help other veterans struggling with their own battles.

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List of Abbreviations

Brazilian Jiu Jitsu (BJJ)

Cognitive Behavioral Therapy (CBT)

Cognitive Processing Therapy (CPT)

Deployment Posttraumatic Stress Disorder (D-PTSD)

Dialectal Behavioral Therapy (DBT)

Eye Movement Desensitization and Reprocessing (EMDR)

Improvised Explosive Device (IED)

Mixed-Martial Arts (MMA)

Operation Enduring Freedom (OEF)

Operation Iraqi Freedom (OIF)

Operation New Dawn (OND)

Posttraumatic Stress Disorder (PTSD)

Substance Abuse Disorders (SUD)

Supportive Persons (SP)

Traumatic Brain Injury (TBI)

US Department of Veterans Affairs (VA)

Virtual Reality Exposure Therapy (VRET)

Chapter One: Introduction

Overview

Since there have been wars, there have been residual negative effects for the soldiers. Posttraumatic stress disorder (PTSD) is one of the negative effects that has been recognized more over time, and therapies have been developed to assist with it. For those wanting to help veterans with deployment-related PTSD (D-PTSD), it is important to understand the needs of veterans and the struggles they have with traditional therapeutic approaches, as veterans' PTSD is more complex than PTSD in civilians (Murphy et al., 2018). D-PTSD results from exposure to the elements of a war zone (e.g., exposure to environmental and chemical hazards, explosions, sirens, mortar attacks, improvised explosive devises (IEDs), patrol ambushes, gunfire, etc.). In addition to exposure, length of time deployed, and time between deployments can play role in the long-term effects of PTSD (Morissette et al., 2018; Vasterling et al., 2016).

Veterans with functional and social impairments need to overcome isolation and exclusion from society (Murphy et al., 2018). It can be difficult for veterans to continue in therapy as the mental health treatments focus on reducing PTSD symptoms and low number of counselors that are veterans themselves that understand veteran culture (Botero et al., 2020; Murphy et al., 2018; Willing et al., 2019). D-PTSD symptom can potentially increase in the long-term post-deployment (Botero et al., 2020), and symptoms can remain or increase posttreatment, making it more important to research alternative ways to help veterans (Adams et al., 2020). Routine exercise, outdoor activities, and martial arts are seen as alternatives for D-PTSD treatment and can produce positive results with a decrease in PTSD symptoms, decrease in avoidance, and increase in social interaction/support (Adams et al., 2020, Lukoff & Strozzi-Heckler, 2017; Weiss et al., 2017; Willing et al., 2019). Exercise has been proven to be an

effective treatment for managing mental health conditions among military veterans (Hall et al., 2020a). This phenomenological study will examine the use of sports and exercise for D-PTSD by interviewing and observing veterans who have already been using sports and exercise to help them with PTSD. In addition, the use of combative spots will be examined to identify the effectiveness with PTSD symptoms.

Background

Soldiers who have deployed to war zones can experience adverse mental health effects that were once known as *shell shock*, *battle fatigue*, *combat stress,* and *Vietnam syndrome* and are now referred to as PTSD (Botero et al., 2020; Chekroud et al., 2018; Green et al., 2016; Lembcke, 2016). The most recent wars the US has been involved in have taken place in the Middle East since 1991, and PTSD and adverse health problems have been identified more openly from these wars. In the Persian Gulf War, January 1990-February 1991 (Operation Desert Shield, Operation Desert Storm) soldiers faced exposure to biological and chemical weapons as well as toxic environmental exposures (e.g., sandstorms, desert temperature, smoke and fire from burning oil wells and waste burn pits; Dursa et al., 2016). The degree of toxic exposure to soldiers in this war was arguably greater than previous or subsequent wars (Brown et al., 2016; Lei et al., 2019). There are veterans from the Persian Gulf War that suffer Gulf War Illness; this is a combination of mental health challenges (e.g., fatigue, insomnia, cognitive impairment, avoidance, and depression) and physical ailments such as muscle aches, gastrointestinal issues, neurological, rashes, coronary heart disease, and seizures (Dursa et al., 2016; Jeffrey et al., 2021; Lei et al., 2019). Compared to previous wars, Operation Enduring Freedom (OEF), Operation Iraqi Freedom (OIF), and Operation New Dawn (OND) war campaigns had enemy combatant more frequently using symmetric and asymmetric tactics, resulting in higher rates of PTSD post

deployment (Green et al., 2016; Hawker & Nino, 2017). Asymmetric tactics include when the enemy blends in with civilians, conducts ambushes, and uses suicide bombers or IEDs on roads. Symmetric tactics are when the enemy's tactics are similar to the ones used by the US military (Green et al., 2016). When asymmetric tactics are countered, the loss of innocent lives can increase, thus resulting in higher moral injury and increased risk of PTSD and traumatic brain injury (TBI) – known as signature injuries (Lindquist et al., 2017). Veterans that received multiple TBIs, had reported higher rates of PTSD, depression, physical pains, depression, and suicidal ideations than those reporting a single TBI (Lindquist et al., 2017). Enemy combatant tactics are used to instill fear, wear down strength and will (Lindquist et al., 2017); the results of these tactics are seen in D-PTSD with hypervigilance, depression, avoidance, startle responses, and suicidal tendencies. Trauma-focused therapists and Veterans Affairs (VA) clinics provide mental health support to veterans of all war eras; however, a low percentage seeks, receives, or completes mental health care.

Mental health therapists have used trauma-focused therapies for years to assist veterans of war deployments with mental health issues caused by deployment experiences. However, there are high dropout and low initiation rates of veterans with trauma-focused therapies (Brown et al., 2016; Rosen et al., 2019). Of the veterans from the Persian Gulf War and OEF/OIF/OND wars, the Gulf War veterans had a higher rate of seeking and receiving mental health care, but higher rates of physical health issues (Brown et al., 2016). Over the years of OEF/OIF engagement, the developmental process of veterans' mental health has become more complex with rates of onset and progressions that significantly differ among veterans (Liu et al., 2019). One of the issues that the VA has faced over the years of wars is the rising number of veteran clients. The VA was developed to provide care to veterans, yet it is not able to care for the over

20 million living veterans, resulting in just 15-26% of veterans receiving VA care (Tsai & Rosenheck, 2016). There is an increase of veterans coming from the OEF/OIF wars and aging veterans from earlier wars (Tsai & Rosenheck, 2016). More female veterans have been reporting to the VA between 2005 to 2015; an increase from 237,952 to 455,875 (Shivakumar et al., 2017). Research and therapeutic approaches have tried different ways to address the issues regarding veteran mental health care, even at times using old statistical data to support views and approaches (Liu et al., 2019). In 2015, a study identified that only 3.6% of VA veterans were receiving evidence-based trauma-focused psychotherapies, and not all therapists trained with these psychotherapies utilized them (Sripada et al., 2018). Several trauma-focused therapies have been developed to approach PTSD and then adapted to treat D- PTSD. Those therapies are discussed in chapter two, Literature Review.

Personal Biography of Researcher

The researcher for the dissertation study is a licensed professional counselor (LPC) in Texas. I was an observer and interviewer within the study. I am a United States Air Force (USAF) veteran with six years of service (1998-2004) as a weather forecaster for aircrafts, providing flight briefings for training and missions during campaigns. During that time, I was stationed at Fort Bragg, NC, Kunsan AB, Republic of Korea (South Korea), Beale AFB, CA, and deployed to Al Dhafra AB, UAE for OEF/OIF. When I was deployed, there were in-transit soldier at our air base on their way back from combat tours, and they would fill the breakroom and bar where they were drinking heavily, fighting, and many said they could not sleep.

While in law enforcement (2010-2016), I experienced multiple traumatic situations: an officer involved shooting, responded to calls for deceased individuals, confronted an attempted murder, faced a hostage negotiation call, and many more. In addition, I assisted many veterans in

mental health crises on response calls. During my tenure in law enforcement, I started to struggle internally from the high stress experiences. I used weightlifting for mental and physical health. Another officer, who was a professional in boxing and mixed-martial arts (MMA), as well as a military veteran who struggled with D-PTSD, recruited me into his training with other officers and veterans in defensive tactics, using boxing, MMA, and countering Army combative training. This is where I experienced the value of exercise and combative sports. I observed and listened to the veterans as they expressed how the training made them feel and how the use of exercise and sports helped them manage their D-PTSD. In addition, they refused to talk to a therapist because they felt therapists would not understand if they had never been in the military or deployed.

In 2017, I graduated from Texas A&M University-Central Texas with a Master of Science in Clinical Mental Health Counseling and became vice president of a nonprofit veteran organization that worked with law enforcement to assist with calls for veterans in mental health crises. My volunteers and I provided an in-person response to assist local law enforcement avoid forcing the veteran to be admitted to the hospital or taken to jail. Many of the veterans reported that the VA therapists were not caring, not understanding, only had sessions maybe once a month, and did not remember the veteran after talking to them. The veterans were not aware of programs in their area or were not interested in group therapies where other veterans talked as they felt it was story comparing. I knew an alternative approach was needed to help these veterans that would meet their needs for cohesiveness and support. When asked if they would be interested in engaging in exercise such as walking, lifting weights, swimming, or any form of exercise, a majority of them wanted partners or were willing to do it with a group of veterans. Many of the veterans felt it could help them develop better coping skills than those taught in

counseling and how much it would mean to bond with other veterans in group work. There are two board members with the nonprofit that are veterans with severe D- PTSD, and they use exercise and combative sports to treat their PTSD instead of seeking traditional counseling. One uses MMA, wrestling, Brazilian Jiu Jitsu training (BJJ), weightlifting, and teaches wrestling. The other does pro-wrestling, weightlifting, and BJJ worldwide competitions.

I am currently enrolled at Liberty University to obtain my Doctor of Education in Community Care and Counseling-Traumatology. I openly acknowledge that I will have to put aside personal knowledge of military structure, as the veterans that will be interviewed will be majority US Army and US Marine Corps, which can be different from the US Air Force. In addition, I will need to set aside personal experience with similar activities as the experiences in the activities will be different and the level of and cause of trauma will be different.

Problem Statement

Military veterans find themselves struggling to obtain clinical counseling due to stigma, self-stigma, and the disconnection perceived with client-counselor relationship in traditional counseling setting. Stigma and self-stigma are the primary reasons veterans do not seek mental health support as that they feel they are weak, they can lose their job, they were not good enough for the military, and they will not be understood if the therapist is not a veteran themselves (Botero et al., 2020; Reger et al., 2020). Veterans that do seek trauma-focused therapeutic treatment, mainly from the VA, do not respond adequately at a rate of 30-50%, and less than 10% may receive mental health therapy that is minimally adequate to obtain results (Sripada et al., 2017). The use of alternative therapeutic approaches could help decrease and manage PTSD symptoms and decrease the stigma of seeking therapy (Willing et al., 2019). Different forms of exercise have been found to have positive retention rates through the activities, sustained

symptom decrease upon follow-ups, and connections to other veterans (Caddick et al., 2015b; Hall et al., 2020b; Peacock et al., 2018). There are limited studies conducted in the use of sports and exercise used as therapy to assist with PTSD symptoms. Most research with therapeutic approaches for PTSD focuses on clinical setting therapeutic approaches and activities that consist of outdoor activities, aerobic exercising, and non-contact sports that are organized and structured by the researcher. There is limited research in observing veterans in their already established routines of sports and exercises and being allowed into that environment to observe and interview, along with limited use of cognitive imagery with such activities.

The problem is sports and exercise are not researched as alternative therapeutic approaches as much as clinical counseling approaches. More specifically, research into the use of weightlifting, combative sports, wrestling, and other contact sports is very minimal. What sets sports and exercise apart from traditional therapy in an office setting is that there is structure that can be associated with and pushes the veteran in ways to overcome. This is rooted in the masculinity of the military structure and what it gives military members; there is a connection with sharing stories, team dynamics, unity with others with D-PTSD, feeling normalized with injuries/disabilities, and masculine behavior within the activities (Caddick & Smith, 2014; Caddick et al., 2015a).

Purpose Statement

The purpose of the study was to conduct phenomenological research into the experiences veterans with D- PTSD had using sports and exercise to decrease or manage their D-PTSD symptoms as an alternative form of therapy. The study further works to identify the needs veterans have that should be met to improve the results of decreasing and managing their D-PTSD symptoms. In this study, the use of the term veterans refers to those that served in the U.S.

military and deployed to war zones. The use of D-PTSD refers to additional PTSD symptoms that are specific to those deployed to combat zones.

According to the U.S. Department of Veterans Affairs (2021), as of September 30, 2020, there are 19,541,960 veterans still living, with 15,200,860 having served during wartime since WWII. Of those living veterans, 8,051,480 served in the Gulf War and Post 9/11 wars (OEF/OIF/OND). The Post 9/11 veterans had 43% higher chance than veterans from previous wars of receiving service-related injuries, which is related to the deployments and tactics used by combatants (U.S. Census Bureau, 2020). Service-related injuries are inclusive of mental health struggles that come with deployment to war zones. As there are developed treatments to assist these veterans, those services are not always used. The VA and trauma-focused therapists provide evidence-based trauma-focused therapies for veterans (Sripada et al., 2018); however, there are some veterans that do not seek clinical therapy due to stigma and the negative impact they feel in group therapies (O'Loughlin et al., 2021; Willing et al., 2019), not feeling understood by the therapists, not favoring the therapy approach, and more reasons.

This study uses the theories of transcendental phenomenology by Husserl and interpretive phenomenology by Heidegger. Husserl's phenomenological theory examines links between experiences a person has in the world and the meaning in those experiences (Owen, 2019). It further examines the social and personal experiences with conscious awareness, reflecting on personal experience, and experiences of others are a social whole (Owen, 2019). Husserl philosophized there was a transcendental experience individuals experienced, to which there was more to one's experience with meaning than what is in their mind (Cerbone, 2020). Experiences are embedded in the world and interconnected to the meaning developed in the mind; the meaning of what is experienced can be externally validated in their world and internally

validated by their conscious awareness (Cerbone, 2020; Skirke, 2021). As an existential philosopher, Heidegger felt there was not a separation from one's existence and the world (Horrigan-Kelly et al., 2016). There is the interpretation of one's experience and the clarification of meaning in one's being. This is seeing how one encounters things in the world, to understand one's self, care structure, and the possibilities they have in the world (Horrigan-Kelly et al., 2016).

Rationale of Research Significance

Approximately 60-70% of veterans with mental health issues do not get adequate treatment a year post-diagnosis (Sharp et al., 2015). It is important to study the issues veterans with D-PTSD and associated comorbidities face with mental health support by examining non-traditional therapeutic methods (e.g., sports and exercise). The findings of this research will build upon previous studies that sports and exercise reduce symptoms of D-PTSD, and improve client well-being (Caddick & Smith, 2014; Whitworth & Ciccolo, 2016). In addition, this study will bring supportive evidence to the few studies into examining use of combative sports to help veterans decrease PTSD symptoms (Willing et al., 2019). As veterans are struggling to find connections and meaning in traditional trauma-focused therapies, the use of sports and exercise can assist the client to overcome physical and mental pains; obtain connectedness to others, structured and disciplined routines, and healthy coping skills; and maintain decreased post-therapy symptoms.

The problem is relevant in providing additional data to the use of non-traditional forms of therapy for veterans with D-PTSD. Currently, there are many studies that present information on the traditional therapeutic approaches and use of emerging therapies, such exposure therapy and eye movement desensitization and reprocessing (EMDR) to treat veteran PTSD (Albright &

Thyer, 2010; Beidel et al., 2019; Rizzo & Shilling, 2017). Trauma-focused therapy is another therapy used for PTSD. Issues that arise with trauma-focused therapies can be that they are used long-term, costly, and have a variance in their effectiveness (Willing et al., 2019). Some studies have shown trauma-focused therapies are associated with high rates of nonresponse and dropout, along with residual PTSD, depression, and guilt symptoms posttherapy (Larsen et al., 2019; Schnurr & Lunney, 2018). Exposure therapy for D-PTSD has reported dropout rates at 25-30% (Brown et al., 2016). However, combining exercise with trauma-focused therapy can be more effective to keep PTSD and comorbid symptoms decreased and produce higher rates of continuation (Powers et al., 2015; Weiss et al., 2017). Exercise has been shown to be effective for not only middle-aged veterans, but also for seniors aged 60 and above with positive results on decreasing PTSD symptoms and improving physical health (Hall et al., 2020a). With the approaches of traditional therapy sessions being less desirable and carrying a stigma, veterans look for more masculine and non-traditional therapy methods (Caddick et al., 2015a). There is minimal research into the use of sports and exercise as effective alternative treatments for D-PTSD and the meanings presented by veterans that use the alternatives.

Research Questions

There are four research questions that will be the focus of the study. Provided with each question is the reasoning for them being a focus of the research.

RQ 1: How do veterans describe the impact sports and exercise have on their D- PTSD?

RQ 2: When there are PTSD symptoms being experienced prior to engaging in a sport or exercise, how does the veteran feel after the sport or exercise is completed?

RQ 3: What do veterans describe as the primary catalyst that draws them to engage in combative sports?

RQ 4: What is the holistic connectedness with sports and exercise for veterans with D-PTSD and how are those defined?

Contributors to Field of Study

Within every field, there are individuals who present new information that can help fill in the gaps in research. For this study, there is minimal research into the use of sports and exercise that are used for PTSD from deployment to a combat zone, and the purpose of the study is to present new information supporting the alternative form of therapy for D-PTSD.

Caddick et al. (2015a) conducted research into the use of surfing and the natural environment to help combat veterans in decreasing their PTSD symptoms. Their research was forward thinking at examining non-traditional therapeutic approaches in the UK through nature-based activities by identifying the benefits of surfing for combat veterans. The researchers used a phenomenological approach that inspired a narrative analysis as they focused on a singular aspect of the "blue gym," or aquatic activities demonstrating the sport decreased symptoms of PTSD and associated comorbidities.

Caddick and Smith (2014) conducted a literature review that looked at different sports and exercise done with veterans with and without physical injuries from wars. Included studies looked at extreme sports, climbing Mount Kilimanjaro, Paralympics, outdoor adventures, and military styled camps. These variations of sports and exercise were examined using qualitative and quantitative methods, with the overall results showing positive effects on PTSD symptoms and the participants' well-being. The study presented research on literature that focused on an array of sports and exercise, with varying levels of intensity to identify the impacts each can have to help veterans with well-being.

Willing et al. (2019) conducted research into the use of BJJ to help military members and

veterans, who deployed to combat zones, with PTSD. The purpose of the study was to identify if BJJ training was effective in lowering PTSD and comorbid symptoms over a five-month training period. Assessment checks were done pre-training, mid-point, and post-training. They found the use of BJJ for veterans with combat-related PTSD resulted in significant decreases in PTSD, major depressive disorder, generalized anxiety symptoms, and alcohol use. The training helped decrease avoidance tendencies and served as a form of exposure-therapy as the participants engaged in self-defense, and they learned problem solving skills that were real-life applicable. The research adds to the minimal research on the use of a form of combative sports for D-PTSD.

Definitions

1. *Combat zones* - Combat for the military is when there is a conflict with another country and is a characteristic within the military to which deployed military members are susceptible to physical and mental impairments (Porter et al., 2018). Note: This definition would be used to describe war which can be used in place of combat.
2. *Combative sports* – These are sports that are aggressive in nature, such as boxing, mixed-martial arts, Brazilian Jiu Jitsu, and Karate, in which there are striking techniques with knees, hands, and elbows that risk physical injury (Karpman et al., 2016; Stuart et al., 2018; Willing et al., 2019).
3. *Deployment* – Deployment occurs when active duty and reserve military members are sent to areas of the world where there are active conflicts or combat with the intention of peace building, regional security, evacuation of dignitaries, or human aid efforts (Heo & Ye, 2017).
4. *Deployment-related posttraumatic stress disorder (D-PTSD)* – D-PTSD is when deployed military members are exposed to traumatic events where they have high, and repeated,

exposure to combat, injury, witnessing injury and/or death, constant threat to their lives by the enemy (Brownlow et al., 2018). D-PTSD can be identified by intrusive thoughts/dreams, high suicidality, comorbid psychiatric disorders, higher levels of anxiety and mood disorders, hypervigilance, avoidance, and cognitive disruptions (Brownlow et al., 2018; Mota et al., 2016).

5. *Exercise* - Exercise is a form of physical fitness that is focused on improving overall well-being through structured, routine, and disciplined fitness routines (Fletcher et al., 2018).
6. *Sports* – Sports can be considered organized group activities or events that utilize teamwork and be adapted to those with physical and mental disabilities; it can provide social connectivity (Peterson et al., 2017; Waldhauser et al., 2021).
7. *Veterans* – Military member that complete their tour of service and transition to the civilian life. Those who have been deployed have higher-risk of D-PTSD than those who did not deploy to a combat zone (Waldhauser et al., 2021).

Summary

This chapter initially examined and identified the struggles D-PTSD presents for veterans. Veterans from the Gulf War, Iraq, and Afghanistan wars have had different experiences with the dynamics of the war and enemy tactics. Veterans from the Iraq and Afghanistan wars have presented with significant variations in PTSD onset and progression. The researcher has a background that presents knowledge, experiences, and personal interest into the focus of the study. The significance of this study was presented to show how important alternative approaches to help veterans with PTSD are and how the use of sports and exercise can meet the personal needs of veterans that trauma-focused therapies cannot do or not do alone. Within every

field there are researchers that have contributed studies that support additional and new research, such as with sports and exercise to assist veterans with D-PTSD. Chapter two will present reviews of literature that support the focus of this study.

Chapter Two: Literature Review

Overview

Not all veterans experience trauma during deployments, but those who do can find themselves struggling with the darkness of images and actions they had to witness, experience, and take part in during war time. This experienced darkness can create mental health issues that may impact the veterans' transition into civilian life. Even though the Gulf War was one year long, over 700,000 military personnel were deployed (Jeffrey et al., 2021), and since 2001 there have been 1.9 million deployed to support OEF/OIF (Keller et al., 2020). From both war eras, approximately 29%-39% of the veterans have developed and struggle(d) with PTSD (Jeffrey et al., 2021). Those that deployed to OEF/OIF/OND reported high rates of PTSD; this is due to the advanced war tactics and technological warfare used by the combatants, time in and between deployments, and the injuries sustained (Green et al. 2016; Morissette et al., 2018; Vasterling et al., 2016). PTSD has been linked to multiple comorbidities, such as TBI, anxiety, depression, sleep deprivation (≤4 hours), schizophrenia, obesity, and substance abuse (Armenta et al., 2018; Lind et al., 2017).

D-PTSD has intensified symptoms due to the uniquely traumatic things military members experience in war zones, such as hostile attacks, suicide bombers, rocket attacks on military posts, seeing/caring for wounded comrades or innocent civilians, killed comrades or civilians, having to shoot to take a life, and/or sustained injuries (Brockman et al., 2016). The compound symptoms that follow these exposures can be emotional dysregulation, increased anger, increased impulsive behavior, social maladjustment, numbing, increased hypervigilance, maladaptive cognitive behavior, detached, anxious interacting with others, and a decrease in their quality of life (Beidel et al., 2019; Kelly et al., 2020; Poulsen et al., 2018). Veterans with D-

PTSD may have a decrease in community integration, social support, physical health, and interpersonal relationships. It becomes important for them find treatments that help with long-term effects of D-PTSD, a way to connect to others and find social support, find meaning in their life, and meeting of needs to heal (Murphy et al., 2018; O'Loughlin et al., 2021; Vasterling et al., 2016). There are approximately 8,000 veterans a year, 22 a day, who commit suicide in the United States (Woodworth, 2016). This is a statistic that mental health professionals are working hard to decrease.

The use of sports and exercise, alone or in conjunction with trauma-focused therapies, has been shown to be as, if not more, effective as trauma-focused therapy alone for managing and decreasing PTSD symptoms (Adams et al., 2020; Weiss et al., 2017; Willing et al., 2019). There is an interconnectedness with structured sports and exercise with structured military training, developed unit cohesion, interpersonal and social support systems. There are additional connections with sports and exercise with improved sleep patterns, confrontation of physical and mental barriers, and reduction in substance abuse (Adams et al., 2020; Caddick et al., 2015b; Whitworth & Ciccolo, 2016; Willing et al., 2019). Research with senior veterans (60 years old and above) has demonstrated engaging in exercise can be beneficial both mentally and physically, even reducing years of D-PTSD (Hall et al., 2020a; Hall et al., 2020b). Veterans of all ages benefit from support groups that share a common interest; this is seen in sports and related activities reducing avoidance and isolation (Drebing et al., 2018; Willing et al., 2019). The following research will examine the significance sports and exercise have on decreasing PTSD symptoms with longer lasting post-therapy positive effects over trauma-focused therapies.

Gap in Literature

There is a gap in literature regarding the use of sports and exercise for therapeutic

treatment for D-PTSD. There is a significant amount of research on male veterans with D-PTSD compared to female veterans. Research involving female veterans more often focused on military sexual trauma in and out of combat deployment versus those involved with the combat aspect of war. In addition, there were more data on male veterans using more physical sports or exercises such as competitions, surfing, golf, fishing, or more physical exerting activities. There were studies on females exercising but there was more focus on aerobics, walking, self-defense, or light weights, not activities like powerlifting or combative sports. Minimal research exists examining females engaging in sports or exercises that are seen as masculine and how it benefits female veterans.

The more common trauma-focused approaches that have been used for PTSD treatments are cognitive behavioral therapy (CBT), dialectal behavioral therapy (DBT), exposure therapy, virtual reality exposure therapy (VRET), EMDR, cognitive processing therapy (CPT) and forms of meditation. These methods are adapted and used in many clinical settings and some in-group settings. Zang et al. (2017) identified that veterans desire to have group dynamics, which makes group therapy more appealing to attend with other veterans that share similar experiences with military and combat. However, there are high rates of PTSD, depression, and suicide amongst veterans as many tend to refuse attending therapy (D.G. Campbell et al., 2016). As interpersonal struggles are something that many veterans with PTSD face, the use of sports and exercise provide the opportunity to engage with others in a dynamic where teamwork, trust, communication, and bonding are developed through struggles and accomplishments.

This study will address this gap in literature by identifying the significance in the appeal and use of sports and exercise to decrease the symptoms of D-PTSD during and post-therapy, increase the life functioning, and increase post-therapy support system. Included will be a focus

with veterans who utilize combative sports as a means to provide supportive information in the benefits for veterans with how it meets their personal need when combating PTSD. The target group will be veterans in the Central Texas area who have deployed to combat zones, with majority of participants centralized in the Fort Hood area.

Theoretical Framework

This phenomenological study will utilize interpretive and transcendental methods to examine the meaning the participants provide through their experiences using sports and exercise for D-PTSD. Heidegger defined the use of interpretive phenomenological research as the participants and researcher co-create the interpretation of meaning (Horrigan-Kelly et al., 2016). Husserl saw that there was meaning in one's consciousness of what they experienced (Sheehan, 2014) and interconnectedness between the subject and the world, thus there is meaning in the world around us that is correlated to the mind (Cerbone, 2020). From the life-world view there is a correlation between the subject and their world and within that correlation lies the meaning of one's life world (Zhang, 2021). With the previously deployed veterans, the study will use the meaning in their activities (the world they are in) that are connected to their mind (the combat-trauma, military culture, and connectedness to others). Among veterans that experience deployment to combat zones, there will be individual differences in processing of the trauma, experiences during combat, experiences with the deployment(s), levels of loss, and injuries; their interpretations of their deployment experiences will vary due to these and other life influencing experiences.

A combination of philosophical assumptions will be applied in the research: epistemological and axiological. With the epistemological assumption, the researcher gets to know the participants more personally and have less separation between themselves and the

research (Creswell & Poth, 2018). The relationship between me and the research focus are my military and law enforcement careers, and my current work helping veterans in mental health crises. The information obtained from the participants will be seen as their individual experiences; how they feel with PTSD symptoms, before and after their activities, will be used as justification for their knowledge. While I spend time talking to and observing the participants, I will be able to see and hear their responses to the activities and use their direct quotes to interpret the meanings in the use of their activity.

The axiological assumption looks at the values of the research from the role of the observer and an interpretation of meaning from the information obtained from the participants (Creswell & Poth, 2018). With the research, I am aware of my role in it and my personal knowledge and experience with veterans with PTSD. Through the interviews and observations of the activities, the values of those activities will be discussed with the participants. In addition, the interpretation of their narratives to find meanings will be done and defined in conjunction with the participants to ensure the interpretation best represents their values and meanings.

The social constructivism framework adds to the design of the study as participants will answer open-ended semi-structured questions and there will be an examination of how they live with PTSD (Creswell & Poth, 2018). What makes social constructivism important to the research is that the meaning of things in the world is different in the individual perceptions. By obtaining the meaning from the veterans' perceptions, the truth in their reality and shared context are presented in the study (Fleuridas & Krafcik, 2019). This will be in addition to examining previous studies related to the matter.

This framework aims at obtaining the descriptions of experiences the veterans have with their PTSD and the use of activities. Also, it aims to obtain their meaning of the activities they

engage is, as this is one thing that those who have experienced combat struggle to do – find meaning in things they participate in. By presenting their experiences and meanings of sports and exercise, it can be shown these are effective ways of helping the veterans reconnect to meaning in life, in belonging, and surviving after the deployment to a combat zone.

Literature Review

This literature review presents the mental health effects veterans experience from deployment exposure that carry into other mental health and physiological effects in their lives. There are many risk factors that can increase PTSD symptoms and even increase the risk of suicidal tendencies or actions. OEF/OIF veterans have higher rates of PTSD and TBI compared to veterans from any of the previous wars/conflicts the US was involved in nationally and internationally (McGlinchey et al., 2017). Unfortunately, there are barriers to mental health that can make it difficult for veterans to seek care and can have an impact on their lives long term. Mental health professionals have produced multiple ways to approach PTSD and its comorbidities; trauma-focused therapies have become more common amongst mental health professionals. Not all trauma-focused therapeutic approaches are equally effective for every veteran, and there can be post-therapy struggles. There is a need to look outside of the clinical and office setting when trying to help veterans with mental health issues. These alternative therapy approaches can be in the form of sports and exercise. Studies, discussed in the literature review, have presented support for the use of sports and exercise resulting in positive post-therapy change due to the activities environment, the similarities in military culture, unity, challenges faced, and diverse needs being met.

Impacts of Deployment Exposure

Exposure to combat during deployment can leave impacts on military members that go

beyond the deployment and transitioning out of the military into civilian life. As enemy combatants are getting more advanced in their attacks with the use of technological and advanced warfare tactics, there are higher rates of D-PTSD and comorbidities (Green et al., 2016). At least 500,000 soldiers and veterans of OEF/OIF/OND have been diagnosed with PTSD (Reisman, 2016). Studies have identified increasing PTSD rates of 25-30%, within OEF/OIF infantry units that experienced direct combat (Rizzo & Shilling, 2017). A study on 60,000 of OEF/OIF veterans discovered that 13.5% of both deployed and nondeployed veterans met PTSD criteria. Other studies reported that those enlisted during these wars were diagnosed with PTSD at rates of 20-30% (Reisman, 2016). Approximately 8-21% of soldiers that have experienced combat in OEF/OIF/OND have been diagnosed with PTSD, and six months after returning from deployment are four times more likely to experience interpersonal struggles (Beidel et al., 2019; Kelly et al., 2020).

Military personnel that are deployed to combat have high risks of moral injury and physical injury/physical disability, and these can enhance the effects of D-PTSD (Frankfurt & Frazier, 2016; Shirazipour et al, 2017). OEF/OIF military members reported higher than 75% of them experiencing threats to their lives and/or severe injury (Albright & Thyer, 2010). What a soldier experiences at war can have psychological effects from moral injury causing questioning of meaning of self and purpose, maladaptive adjustment upon returning, high traumatic distress in life, survivor's guilt, and loss of trust (Keller et al., 2020). There is a coexistence with veterans' disability and masculinity, as there is a perception that disability results in depending on others for help and the masculinity means one must be strong, powerful, and take care of oneself in any situation. These two perceptions must be examined together as they work towards the mindset of working through things on their own struggles, this is resiliency in the face of

adversity (Evans et al., 2020).

OEF/OIF/OND veterans have reported experiencing repeated events that involved threatened death or severe injury (Fogger et al., 2016). Between 2002-2008, the Department of Veteran Affairs (VA) reported there were 120,049 OEF/OIF veterans with mental health disorders, such as general anxiety disorder (GAD) and depression, and approximately 60,000 veterans with PTSD (Albright & Thyer, 2010). OEF/OIF veterans develop PTSD at a rate that doubled the average of civilians, and it was estimated that in the previous decade treatment costs were over $3 billion per year (Adams et al., 2020; Ramchand et al., 2008 as cited in Maren & Holmes, 2016). Research identified that US OEF/OIF troops rates of PTSD were as high as 31%, and the rate for UK troops was 6.9%. This disparity could be related to the restriction of service members in the UK seeking mental health support (Caddick et al., 2015a).

Zang et al. (2017) conducted a quantitative study that examined existing correlations between OEF/OIF related PTSD symptoms and use of personal resources with PTSD cognition as a mediator. The personal resources were identified as social support, unit cohesion, and trait resilience. The results of the study demonstrated a decrease of PTSD symptoms when personal resources are utilized. The study examined if negative posttraumatic cognitions with the PTSD will mediate the relationships between personal resources and PTSD. Results of the study identified that participants with minimal personal resources demonstrated more negative posttraumatic cognitions, which caused an increase in PTSD symptoms. For members that had a higher rate of personal resources, there was a decrease in PTSD symptoms. The personal resources can be aligned to the social support and unit cohesion that can be identified in sports and exercise. This study provides support to the present research by demonstrating the need for military members and veterans with D-PTSD to have social support and unit cohesion.

Risk Factors for D-PTSD

Research identifies that within the veteran population there are certain risk factors that increase rates of being diagnosed with PTSD and the recurrence of PTSD symptoms. The age the veteran was enlisted and experienced combat is one of the higher risk factors. Holding lower rank, having higher deployment counts with moderate to severe combat exposure, being enlisted in Army or Marines, and long deployments increase the risk of PTSD even more (Armenta et al., 2018). Other risk factors are lower education, lower socioeconomic status, lack of family support, and any prior-to-enlistment mental health issues (Armenta et al., 2018; Poulsen et al., 2018; Reisman, 2016). There is a risk when transitioning out of the military of not being able to make new connections due to the difference of civilian relations versus the bonds developed in combat, (Kintzle et al., 2018). Persistent PTSD can increase due to the lack of social and/or family support, preexisting mental health conditions such as depression and anxiety, history of traumatic or stressful experiences, and having multiple physical symptoms (Armenta et al., 2018). Another risk that is not mentioned often is not being honorably discharged from the military. There is more focus on mental health services for those that were honorably and/or medically discharged. Veterans that receive non-honorable discharge are at a risk of adverse mental health outcomes as they do not receive the needed transition resources (Kintzle et al., 2018).

Armenta et al. (2018) identified existing factors that cause persistent PTSD in veterans, and active military members, with a consideration of comorbid conditions that increase the risk of persistent PTSD. This study was conducted from 2001 to 2013 using the Millennium Cohort Study, and data were collected every three years. The PTSD Checklist–Civilian Version was used as a baseline and involved 2,409 veteran and active-duty participants. The data for the first

and second follow-ups were based on the number of participants that completed the three questionnaires – baseline, first follow-up, and second follow-up. The first follow-up (2007-2008) revealed that 47% (N = 2.409) had met criteria for persistent PTSD. The second follow-up (2011-2013), it was determined that 71.2% (N = 822) met the criteria for persistent PTSD. Through multivariate logistic regression, the consistent risk factors were identified as age, less than four hours of sleep a night, exposure to combat, comorbid mental and/or physical health conditions, psychotropic medication, obesity, lower exercise, history of stressful or traumatic experiences, military separation, and lack of social and familial support (Armenta et al., 2018; Lind et al., 2017).

Veteran Suicide Rates

Suicide is something that is not unknown or uncommon to veterans that struggle with PTSD due to their exposure and experiences during deployment. The risk factors discussed play a role in the risk of veterans having suicidal behavior and are risks that can be addressed. Even though suicide is a preventable death, it is the third leading cause of death for military members (Tripp et al., 2016). Veterans that suffer from PTSD are four times more likely to have suicidal ideations and have a 66% higher suicide rate than the general public (Poulsen et al., 2018; Tripp et al., 2016). An average of 18-22 veterans a day commit suicide, with those in the age range 18-24 years old being four times at risk for suicide (Reisman, 2016). One of the key factors in increased suicide ideations and behavior for veterans is low levels of social support, as they see the world as a constant danger and do not trust others in their social support system as being safe (Kelly et al., 2020). The lack of social support can come from the distrust that comes from moral injury.

Moral injury is one impact from combat that can make a veteran question their own

values and beliefs. This questioning of self can bring them to suicidal thoughts as they do not see themselves as good. Frankfurt & Frazier (2016) identified gaps in research on moral injury and the relationship between transgressive acts and moral injury. This was one of a few studies that included Vietnam veterans. When compared to Gulf War veterans, Vietnam and OEF/OIF veterans experienced combat and were at higher risk of experiencing transgressive acts through witnessing, direct experience, failing to prevent, or hearing about (Brown et al., 2016). These acts go against the individual's moral beliefs as the acts are seen as cruel, inhumane, or violent towards others, such as firing their weapon and having to take another's life (Frankfurt & Frazier, 2016;Shea et al., 2017; Tripp et al., 2016). Those that suffer from moral injury, have potentially higher life-threatening psychological distress, resulting in higher suicide risk. For those that experienced firing their weapon and killing in combat, there is an increased risk of suicidal ideations, alcohol abuse, and PTSD symptoms (Tripp et al., 2016).

Veterans that experience pain from physical injury, PTSD, and depression are at higher risk for suicidal behaviors (Giordano et al., 2018). Approximately 50% of OEF/OIF veterans suffer from chronic pain, causing an increase their use of health care services and increase in suicide risk. When there is a triad of chronic pain, PTSD, and TBI, there is an increase in agitated and violent behavior, in which there is greater isolation and suicidal behaviors (Blakey et al., 2018; Giordano et al., 2018).

Importance of Mental Health Support

Therapy is important as it can provide veterans with a better transition out of the military and help them with social connections, either maintaining current ones or finding new ones (Kintzle et al., 2018). Many veterans will lose a sense of hope in changing their behaviors due to the feelings they develop from combat and from what they experience. There is military mental

health support by medical approaches, but with a dependency on pharmaceutical and psychological interventions (Peacock et al., 2018). There are many differences in approaches to mental health in the military but minimal holistic therapy approaches.

Armenta et al. (2018) discovered in a study that out of 2,409 service member and veteran participants, 47% that were positive for PTSD still showed symptoms at three-year follow-up and over 70% at six-year follow-up. This indicates the need for a holistic approach to D-PTSD. PTSD can be comorbid with substance abuse disorders (SUD), and with SUDs there are treatment challenges with the veterans, such as treatment engagement and even relapse rates being high (Marchand et al., 2018). Of the veterans that experienced combat, approximately 12-15% of them report struggling with alcohol use three to six months upon returning from war, and this continues, even increases in use, with separating from the military (Poulsen et al., 2018). There is a push to move mental health treatment for military and veterans from clinical, hospital, and rehabilitation center settings and hold holistic alternative treatments in settings that encourage more participation during and post-therapy (Peacock et al., 2018).

There are two areas of psychological health that should be looked at when helping veterans with PTSD – subjective well-being and psychological well-being. The subjective well-being is an overall concept at evaluating life quality and the frequency of pleasure over pain. In this concept, the veteran looks at their overall satisfaction in life and the emotions (both negative and positive) they feel. Psychological well-being is a reflection of the psychological growth and the individual reaching their full capabilities in life (Caddick et al., 2015b). The application of hope in therapy can help bring the veteran a sense of control and the ability to identify their paths to goals in changing their behavior, along with helping with their overall well-being (Capone & Cameron, 2020). A holistic approach can help support the overall well-being of the veteran. This

is possible when there is a trusted relationship developed with the therapist which supports the veterans feeling they have their independence and strength through the therapy as they develop coping skills. When there are a group of veterans involved, there can be more positive results with a holistic approach rather than civilian-veteran based interactions as there is difficulty with the veterans communicating their experiences into the civilian parlance (Kanzki-Veloso et al., 2021).

Military members that received a physical disability from combat must experience the transition out of veteran life, retraining for civilian jobs, and not being able to relate to those that are disabled civilians (Shirazipour et al, 2017). Those that suffer with chronic pain from an injury will struggle with social withdrawal, depression, adverse sleep patterns, negative impacts to their social relationships, struggle with pain management, irritability, and even phantom limb if one was amputated (Giordano et al., 2018). Evans et al. (2020) conducted a study with Danish disabled combat veterans that demonstrated connections between masculinity and physical disabilities were fluid. Even wounded, the veterans reflected on the physical training that was the military standard, representing being dominant, ready to go to war and the hard training with others to reach the physicality. The struggle when they become veterans is that who they were does not exist, as being a soldier was a warrior mindset but, for example, having legs allowed them to enact that warrior mindset. There is masculinity attached to their physical abilities, therefore being able to partake in a masculine practice, such as wheelchair rugby, allowed them to connect in the group in a hyper-masculine sport based on their mental and physical experiences not their disabilities.

There is a risk of avoidance behaviors due to the bodily sensations that are produced from exercising, making exercise a pivoting point to exposure and desensitization to the physiological

cues that are similar to PTSD symptoms (Hegberg et al., 2019; Bosch et al., 2017). Due to the isolation seeking behavior some veterans will have, there is the importance of encouraging group exercise with other veterans or exercising in public to encourage social interaction (Bosch et al., 2017; Ley et al., 2018). Avoidance can be due to the physiological reactions, untrusting of the environment, or physical limitations due to injury.

Interpersonal struggles are faced by many veterans; they seek isolation out of safety and lack of trust of others. Veterans have a higher rate of therapy success when they have a support system and when they have members of that system included in their therapy process and community integration (Drebing et al., 2018). Thompson-Hollands et al. (2019) analyzed the importance of support persons (SP) in a veteran's life that can help them stay consistent in PTSD therapy. The SPs were able to provide information as to why some veterans had poor adherence to therapy, a provision of insight that the therapists do not have and examined how this information could be used to determine what therapeutic approach is best to keep veterans engaged. This research focused on qualitative analysis of data collected from interviews with SPs of veterans who struggled to complete cognitive processing or prolonged exposure therapies. The SPs were identified through a process of identifying veterans, out of an initial 598 survey responses. There were 31 veterans interviewed that struggled with less than half of homework compliance from therapy or left the therapy early or quit and were asked if their SP could be spoken to. There were 19 SP that participated in the interviews (Thompson-Hollands et al.,2019). The SPs were asked of their opinion of the treatment the veteran was receiving, factors that impacted the veteran's participation, family role in veteran's treatment, and how they felt treatment could be improved. The study revealed that the SPs did not understand the goals of the therapy, felt there was an importance for the veteran to share the trauma they experienced, and

for there to be a balance with life and distress. The SPs felt left out of therapy as the veteran would not talk to them about what went on in therapy and there was little inclusion of SPs with the homework. The SPs reported that some of them were not aware when the veteran quit therapy, but there were those that were highly supportive the quitting therapy. There was minimal contact with the therapist, contact with therapist was either helpful to the SPs or they could not remember what the therapist stated. There were several SPs that did not like the therapist and felt they were too rigid. Many of the SPs reported that they wanted to participate to help improve the therapy for the veteran (Thompson-Hollands et al.,2019). Having this support system works towards preventing the decline in social support. When the SPs are other veterans, or individuals that are close to the veteran, there is retention of the interpersonal connections and a developed ability to connect to new social networks (Drebing et al., 2018).

Barriers to Mental Health Support

Even though there are mental health services that have been created to help veterans and military members, it does not mean they are something utilized with ease. There are times when the access to the services is restrictive or knowledge of them is limited. In addition, one of the biggest barriers to veterans with utilizing mental health services is the strength stigma has in how it is perceived if they seek help.

Access to Resources

As there is limited in-person mental health support for veterans, the use of telemental health is starting to help reduce the barriers in getting access to mental health therapy and increasing the participation in the veteran's own recovery (Reisman, 2016). Kanzki-Veloso et al. (2021) summarized findings from multiple studies and concluded that there are times when there are scheduling time off from work issues and struggles with long waiting times with large

amounts of paperwork to get in with a therapist at Veterans Affairs (VA). In addition, a non-honorable or dishonorable discharge can make it difficult for veterans to receive mental health care services (Kintzle et al., 2018).

In a VA study, it was seen that mental health specialist tend to group in urban areas, veterans that are in rural areas are less likely to have access to mental health support. There are higher results in reduction of PTSD scores in six-month and one-year periods for those veterans that do access on-site mental health treatment (Reisman, 2016). It has been a common theme to see there are many veterans that are unaware of some trauma-focused therapies and effectiveness rates for veterans with them, as clinicians do not promote them out of concern the veterans will not want to participate (Kehle-Forbes et al., 2020). Access to resources of therapies and alternative therapies need to be promoted within the military and outside of military, such as through VA or therapists. When alternative therapies, such as yoga or other forms of exercise, as not promoted to veterans or active duty, they are unaware of them and therefore will not access them to obtain the benefits (Hurst et al., 2018). This brings a need for integrative approaches to help through community veteran reintegration with developed physical activities, including veterans helping veterans, with individuals that understand military culture, impacts from deployment, manage with physical injury/pain, and the significance of cohesion (White & Hill, 2022).

Stigmatism

Veterans and active military members struggle with seeking mental health therapy due to the stigmas that come with seeking help. The stigma starts within the military, and then follows into the veteran's life. Military culture, masculinity, and feelings towards mental health are some key barriers to seeking mental health support.

The military culture impresses on active service members that mental health struggles make them unfit for duty. While on active duty, seeking help is hindered due to a number of things: military culture, masculinity, reliance on others, self-sufficiency, perception of being sick to get out of duties, and the need for operational readiness (Sharp et al., 2015). A sense of shame and embarrassment for seeking treatment and not pushing through what they are feeling may develop (Reisman, 2016). Of military members that experience mental health issues, approximately 60% do not seek mental health support and the highest stigmas comes from fear of repercussions from units and being seen as weak (Sharp et al., 2015). There is an underlying concern that if they seek treatment and disclose any mental health issues that there could be a negative impact on their careers and they would be viewed poorly by their peers (D.G. Campbell et al., 2016). This concern can hinder an active-duty member from seeking mental health help, and it continues over into the civilian life. There are alternatives to therapy, such as yoga, but it is not sought after by veterans due to the military culture of if not being masculine (more feminine) nor a sport or real exercise (Hurst et al., 2018).

Shields et al. (2017) examined the hyper-masculine culture in the military and the pressure there is for men to maintain that masculinity as seeking mental health support makes them less than in the eyes of the military and their veteran peers. Using literature and 15 veterans' narrative analyses, the authors were able to identify a connecting theme and a driving force of mental health and factors creating a struggle to adjustment. Amid the hyper-masculine military culture, it is engrained in the military members that they are weak or unfit for duty if they are struggling mentally. Mental health struggles are stigmatized by the military hegemonic masculinity attitude (Peacock et al., 2018). Those that are seen as not fitting the masculine model face abjection and exclusion from peers and leadership (Shields et al., 2017). The study

examined four themes: struggle when faced with abject identity, safe social bonds with their peers – need of belonging, culturally appropriate therapy settings, and reaffirmation of personal agency with being motivated for self-care. A main theme seen through the narratives was the veterans trying to find a balanced version of themselves where they were seen as competent and honorable in the context of mental health struggles and the instilled military views of masculinity (Shields et al., 2017). O'Loughlin et al.'s (2021) study lends support to the view of masculinity as a barrier for male veterans for seeking mental health support. It is seen that this belief of the hyper-masculine culture can be associated with the risk of them developing PTSD. The study identified that veterans that avoided femininity and clung to dominance struggled with reduction in PTSD symptoms pre- and post-treatment. The individual belief in masculinity in a group influenced PTSD symptoms, not the group dynamic. There is a view that military members/veterans should discuss their issues with *their own* (O'Loughlin et al., 2021), thus isolating them from others close to them and not opening up to therapists.

This mindset of stigma does not go away, thus leaving many veterans without seeking or receiving mental health help. Veterans feel they will be viewed as mentally unstable or blamed for their mental health, in addition to concern of being labeled with a diagnosis (D.G. Campbell et al., 2016). Veterans that experience D-PTSD struggle with seeking mental health assistance through individual counseling or group therapy due to social stigma and the feeling of limited impact it has on their symptoms (Reisman, 2016; Armenta et al., 2018). A standing issue with veterans is the stigmatism that is experienced with having mental illness and talking to a therapist. Approximately 60%-70% of veterans do not receive mental health care with the main factors being stigma, negative attitude towards mental health, recognizing or admitting the need for mental health help, and logistical barriers to care (D.G. Campbell et al., 2016; Sharp et al.,

2015). The higher the stigma experienced, the lower the preferences of the veteran seeking mental health treatment, taking prescription medication, or depression care (D.G. Campbell et al., 2016). As mental health professionals work to combat stigma to help veterans, they have attempted to develop more advanced methods of therapy. When using alternative therapies, such as sports and exercise, there is more of a relatable dynamic for veterans and military members, increasing their participation rates.

Therapies Used for D-PTSD

Several therapies have been developed over time as the demand for mental health support for military members and veterans has risen from the ongoing deployments and redeployments to OEF/OIF/OND. Trauma-focused therapies have become more common to assist veterans with their PTSD (e.g., exposure therapies, eye movement desensitization and reprocessing, and cognitive processing therapy). When it comes to trauma-focused therapies, they have a higher dropout rate for veterans compared to civilians (Peterson et al., 2018), with some estimates as high as 36% (Alpert et al., 2020). Therapies developed for PTSD can face challenges when treating veterans with D-PTSD due to their traumatic exposures potentially involving constant elevated levels of trauma exposure (Peterson et al., 2018). Technological advances have augmented the capabilities within these therapeutic approaches; however, there are some limitations that come with these approaches that lead to the gap in therapy for PTSD. These limitations are what the research focus of this study works towards with the use of sports and exercise for longer positive effects post-therapy.

Exposure Therapy

Prolonged exposure (PE) therapy consists of 12-weekly sessions of repeated engagement of the memory of a traumatic experience to gauge how the client reacts and help them manage

their emotional responses to triggers. This therapy has a reported 60% effective rate with veterans with PTSD (Reisman, 2016). There are different variations of PE that mental health professionals have adapted with the use of technological advances. Also, PE has been combined with other therapeutic approaches to increase the effects of the therapy.

A form of PE is virtual reality exposure therapy (VRET) where veterans are exposed to virtual scenarios of deployment locations to engage traumatic triggers that elicit hyperarousal and desensitize the arousal through repeated exposure (Beidel et al, 2019). Rizzo and Shilling (2017) identify two specific programs that were developed to help provide virtual reality therapy to OEF/OIF veterans. In 2004, the USC Institute for Creative Technologies, being funded by the US Office of Naval Research, developed the Virtual Iraq VRET that was a virtual Iraq and Afghanistan in four scenarios. It used a head mounted virtual 3D visual stimulation process. In 2011, this program was funded by the US Army to be expanded upon to develop BRAVEMIND and added 10 additional scenarios (Rizzo & Shilling, 2017). These scenarios were individual locations in Iraq and Afghanistan ranging from rural villages, industrial zones, Bagram Airfield hospital, road checkpoints, to a forward operating base. The exposure was enhanced to use the 3D visual stimulation in combination with vibrotactile (vibration through touch) and olfactory (sense of smell) stimuli (Rizzo & Shilling, 2017).

Beidel et al. (2019) conducted a controlled study of OEF/OIF veterans and active-duty members compared the efficacy of trauma management therapy (TMT) which is VRET combined with group treatments, and VRET with a psychoeducational dynamic by evaluation mid- and post-treatment and two follow-up points. Both approaches to therapy had impacting results in lower certain symptoms of the PTSD, with VRET being highly effective but not always as a standalone therapy. As TMT and VRET are effective individually due to the different

symptoms they influence. The study determined that VRET is highly effective for combat PTSD. The portion of the study with the VRET and psychoeducational approach, there was twice the dropout rate than then TMT with group element.

Exposure therapy and mindfulness-based therapy are both effective with helping decreasing PTSD symptoms in veterans. In a group setting, mindfulness-based exposure therapy (MBET) is effective by non-trauma focused *in vivo* exposure as there is increased confronting, perceptual and emotional processing of social threats, or trigger cues (King et al., 2016). Social support is a key factor for military personnel that transition out of the military life and into becoming civilians. The transition removes them from the camaraderie they experience while in units and on deployment. Those that participate in peer support groups can experience an increase in social support, self-efficacy, coping skills, and complying with their treatment (Drebing et al., 2018). A study with female veterans and soldiers identified there is the high conditional probability of symptom retention with PE, which can lead to depression or a difficult sleep disorder. In addition, there is still retention of some numbing, physiological reactions, and hyperarousal symptoms (Schnurr & Lunney, 2018). Other research has indicated that exposure therapy alone does not successfully address interpersonal struggles or social anxiety post-therapy (Power et al., 2015; Kelly et al., 2020). For many clients that received exposure therapy, they can still have some symptoms post-therapy, and some are not as responsive to the therapy; however, adding exercise to exposure therapy allows the clients to continue the process post-therapy (Powers et al., 2015). A study demonstrated that exercise enhances fear extinction learning and decreases symptoms of PTSD and anxiety that continue to be impacted post-therapy (Powers et al., 2015).

Eye-Movement Desensitization and Reprocessing

EMDR has been increasingly used with veterans diagnosed with combat-related PTSD. The process of the therapy is to have the client revisit the traumatic event and reprocess how they react to the experience. This removes the psychological disruption, such as removing the connection to the memory and reducing the associated triggers (Reisman, 2016). One study demonstrated after the use of EMDR, in conjunction with war scenario virtual reality on combat veterans, there was an increase in the precuneus metabolism and improvement with PTSD symptoms (Rousseau et al., 2019). EMDR is seen to be more effective in desensitizing the client from the emotions connected to the traumas experienced. A limitation to this method is that as different experiences and exposure in combat can affect veterans differently, there is no specific dose-treatment for the various levels of exposures (McLay et al., 2016).

Cognitive Processing Therapy

Cognitive processing therapy (CPT) works to elicit the experiences individuals experience first-hand, such as the traumatic events veterans experience deployed to combat zones. CPT works towards reducing PTSD symptoms, removing self-negatives or hindering beliefs (Hundt et al., 2017). There have been advancements with CPT being used in-home with the therapist at the veteran's home, to help veterans avoid stigma, with lower dropout rates and increased improvements in PTSD symptoms (Peterson et al., 2018). In addition, it has been proven effective when adapted to be used for PTSD comorbid with substance abuse, such as alcohol (Straud et al., 2021). CPT has been become a form of therapy promoted by the VA as they have pushed for their clinicians to be trained in it, but it is not sought for by veterans (Kehle-Forbes et al., 2020; Litz et al., 2021, Straud et al., 2021). Some veterans report that the CPT process is too stressful and too time consuming (Hundt et al., 2017), thus increasing dropout rates. The cognitive therapy has been seen in clinical trials as being less effective on D-PTSD

compared to civilian trauma PTSD (Litz et al., 2021).

Alternative PTSD Therapies

There are alternate PTSD therapies that are not as conventional and can connect to veterans in diverse ways. The different dynamics in the use of nature can help the veterans feel reconnected to military training they do in the field. The use of art allows a safe way for them to access and express their traumatic memories in ways they cannot express in words.

Nature environments are calming and reduce adverse effects of triggers (Poulsen et al., 2018). Nature is something that veterans are familiar with in military training and provides a sense of freedom when they are in it (Poulsen et al., 2018). The use of nature in therapy for veterans was first seen in therapy for World War I soldiers in the form of horticulture for those with shell shock (Poulsen et al., 2018). Nature-based therapy uses experiences and activities in nature settings; two concepts from attention restoration theory (ART) relevant to this work are direct attention and soft fascination. Direct attention is when someone dedicates focus on an activity and soft fascination is when something engages an individual's attention easily, such as imagination (Poulsen et al., 2018). Nature-based therapy has the elements of physical horticulture and body-awareness activities while incorporating individual therapy. The therapy helped the veterans take more initiatives, find life solutions from the struggles of PTSD, understand and acceptance of self, and develop healing relationships with other veterans (Poulsen et al., 2018).

Art therapy can open up the mind to locked memories and emotions, sensory memories, safe trauma recollection, and processing the trauma; this can be seen as speechless terrors (M. Campbell et al., 2016; Walker et al., 2016). Art therapy allows for those with PTSD and TBI to externalize their memories, express their emotions safely with managing overwhelming emotions

and memories, and for more effective processing of fears (Walker et al., 2016). When combined with CPT, there is minimal dropping out of therapy, decreased PTSD and depression symptoms, traumatic memory recovery, and improved trauma processing (M. Campbell et al., 2016). Individuals with TBI have demonstrated a progression with art from basic to more advanced as they improve with emotional expression and adaption, socializing skills, no feelings of challenging or threatening therapy, and accepting their physical and mental disabilities (Walker et al., 2016). Different styles of artwork can help the veterans express what they are feeling with a representation of symbols and can help provide a more visual understanding of things they experienced on deployment and inside of themselves (Walker et al., 2017). Veterans can use the art to interact with their own perception of experiences as the art can be seen as an extension of themselves. In addition, a study shows that the use of CPT with adjunctive art therapy can greatly decrease the PTSD symptoms in veterans (Decker et al., 2018).

Sports and Exercise as PTSD Therapies

One thing that is consistent through all military branches is the approach to physical health with exercise. It is seen that exercise is beneficial to approaching PTSD and can reduce barriers to therapy due to the locations it can be done at and the removal of stigma by not being monitored by a mental health professional (Caddick et al., 2015b; Whitworth & Ciccolo, 2016). Sports and exercise can be seen as a holistic approach to therapy, providing more and longer lasting benefits to the physical and mental health (Peacock et al., 2018). Veterans and military members that have physical disabilities still desire to maintain physically active lifestyles, making exercise as a form of therapy more appealing and gaining more ground in use (Shirazipour et al, 2017). Exercise helps with the minimizing of substance use and SUDs amongst veterans. This is important as the rate of SUDs can be extremely high due to chronic

pains (Whitworth & Ciccolo, 2016).

Forms of cardio exercises and disability inclusive exercises can have a positive effect on PTSD symptoms. Studies on the impact cardiorespiratory fitness (CRF) had on cardiometabolic health and the impacts those had on PTSD demonstrated there was lower cardiometabolic risk and possible prevention in PTSD symptoms (Bosch et al., 2017; Whitworth et al., 2020). The use of aerobic activities has the potential to reduce symptoms of PTSD and anxiety symptoms as the exercise creates the same bodily sensations experienced during moments of anxiety. This is moving the feelings as distressing from catastrophic and reducing avoidance behaviors (LeBouthillier et al., 2016). Exercises that are inclusive of those with physical disabilities helps veterans that are struggling and isolating themselves through avoidance of how the exercises make them feel when they are alone. They can receive the benefit of group cohesion, mental and physical challenges, and having a social role (Shirazipour et al, 2017).

There are combat veterans that struggle with sleep deprivation (≤4 hours), thus resulting in lower quality of physical health and activity, decreased job performance, decreased mental health status (Lind et al., 2017; Ley et al., 2018). Sleep deprivation and intrusive nightmares are prominent symptoms of PTSD, resulting in negative impact on cardiovascular health. The use of routine exercise is proven to have physiological changes, such as elevated releases of serotonin and endorphins, burning of physical energy, wearing down of muscles, reduction of PTSD symptoms; all resulting in promotion of sleep (Bosch et al., 2017; Ley, 2018). Sleep disruptions can improve with consistent exercise, and this can improve other PTSD symptoms; even though there is proof of shirt-term sleep improvement, it could possibly take over a year for there to be a significant impact to the sleep disruption (Bosch et al., 2017).

As there are some veterans that engage in risk-taking behavior, high-intensity activities

are more attractive as therapeutic approaches that fulfill the need for risk-taking behavior and can fill the void from the military culture of athleticism and engagement (Rogers et al., 2014). In the UK, 22 veterans participated in a 5-day program that incorporated adapted sport (AS) and adapted adventure training (AAT) as the researchers identified the meaning and value of the therapy approach. The experience was described as participants finding hope again, gaining camaraderie, experiencing teamwork with staff and other participants, feeling supported, and finding laughter (Peacock et al., 2018). The concept of the "blue gym" is where there is the use of exercise outdoors as to connect to nature with positive impact on mental and physical health (Caddick et al., 2015b). The use of surfing in the blue gym for veterans with combat-related PTSD, was effective as it provided relief to the veterans as they focused on the present experiences and removed the focus on the past trauma. The surfing also helped the veterans develop relationships with other veterans by connecting to each other on the positive activities involved and removed focus on the PTSD (Caddick et al., 2015b). The use of sailing adventure therapy for veterans with SUD, comorbid with PTSD and anxiety, was not associated with an increase in symptoms even with the risk of injury during the sailing activity. The veterans, at 100% rate, reported to have felt relaxed and calm during the activity of the sailing adventure (Marchand et al., 2018).

Rogers et al. (2014) examined the effectiveness of a sports-oriented occupational therapy. by using surfing as an acceptable risk-taking behavior alternative to help veterans with D-PTSD to transition to civilian life. Military personnel and veterans have a drive to fulfill risk-taking behavior to meet the needs of feeling invincible or to fuel an adrenaline rush sensation and how the use of high-intensity sports are an alternative to traditional counseling approaches. There is an identified correlation between military culture with athleticism and engagement on physical,

psychological, and environmental levels.

In a narrative study, using interviews and observations of a group of veterans with PTSD at a surfing charity, Caddick et al. (2015b) examined masculinity in how combat veterans talked about their PTSD, how they participated in the masculine themed exercise of surfing, and how it impacted their life and well-being. The interviews obtained the veterans' life history and narrative analysis was applied. Even though masculine performance activities can be viewed as a danger, this study demonstrated they can be a positive resource for the combat veteran's health and well-being with their PTSD. The study illustrated narratives of veterans that dealt with the masculine approach to mental health with being stoic, being brave, and dealing with attitudes from other veterans and superiors while enlisted (Caddick et al., 2015b). The narratives identified the need for group interaction with other veterans to offset the negative consequences and views on masculinity when it comes to PTSD.

Weiss et al. (2017) conducted a study at a residential treatment facility with both male and female veterans. The study examined the effectiveness of Aikido self-defense group-based instruction on reducing the symptoms of combat PTSD. Aikido is a defense form of martial arts and is utilized in self-defense courses, especially for women. The study held non-Aikido and Aikido guided group therapies. There was a greater effectiveness in decreasing the PTSD symptoms for the female veterans. However, there was very little impact to the male veterans. This can be seen as self-defense can be a form of empowerment for women (Weiss et al., 2017) and help them feel stronger to face their struggles. This form of martial arts may not be as masculine as male veterans may need to regain their strength over their symptoms.

The use of combative sports is not highly researched and is overlooked in its effectiveness as to what it provides the veterans with therapy decreasing PTSD, depression, and

anxiety symptoms. Combative sports can be another form of exposure therapy, but it is something that is continued and not limited to therapy sessions. Veterans that experience D-PTSD will experience an impediment on their fear extinction and struggle with recovery from the trauma they experienced. Extinction learning will not remove the stress memory but will recondition the response to the stimuli (Maren & Holmes, 2016). Applying a form of exposure therapy that engages their fears through problem solving can increase their chances of recovery and developing reconditioned responses. Martial arts can help to utilize combative techniques to draw out the PTSD attached to combat and help the veterans engage it with logical techniques. This has been used with Vietnam veterans at different VFW's, where it helped some in active crisis suddenly engage the techniques with focus, using their forearms and elbows, where they are grounding in behavior and connection to their partners (Williams, 2020).

Willing et al. (2019) examined the effectiveness of BJJ as a self-defense curriculum that was seen as exposure therapy to reduce PTSD symptoms and related comorbidities. This study was conducted with having participants taking part in 40 sessions over five months, without having prior experience in BJJ. There were a total of 29 US service members and veterans ranging from ages 22-60, all with combat-related deployments and PTSD identified through screening tools: clinical interviews, the PTSD Checklist (PCL-5), and the Psychiatric Diagnostic Screening Questionnaire (PDSQ) which were conducted and analyzed pre-, mid-, and post-BJJ sessions points (Willing et al., 2019). The analysis at each point showed there were significant improvement in the symptomology for PTSD symptoms and comorbid disorders - generalized anxiety, major depression, and substance abuse. It was concluded that BJJ provided the veterans a way to practice problem solving in a difficult situation and re-learn how to be effective when facing adverse situations. In addition, it was seen that BJJ forces social interaction which is a

counter to the social withdrawal affiliated with PTSD as an avoidance strategy (Willing et al., 2019). This study supports the research sub-focus of the use of combative sports with decreasing symptoms of PTSD in veterans and how it provides a sustained decreased post-session, indicating that the continuation of the sport can increase the positive impacts on veterans.

Supportive Sports and Exercise Media

There was media reviewed that focused on the effects different physical activities deployed veterans use to help them with their D-PTSD. These are personal interviews of veterans and their narratives explaining their physical activity, and the veterans are from different places in the world.

Terry Brazier is an MMA Bellator fighter who served in the British Army and joined the parachute regiment and was deployed to Afghanistan 2010-2011. What he experienced in war caused PTSD, and he was discharged from the military. Due to the experiences in what he saw, he had nightmares and flashbacks. He experienced rage, anger, anxiety, depression, and was suicidal (TYT Sport, 2019). He found that MMA was his way to manage all he was feeling. In the video he stated, “I can be self-destructive, but I see it as energy. Back when I left the army, I had so much negativity. I needed to release it and I felt like I needed to lash out. I don’t know where I’d be without MMA” (TYT Sport, 2019).

Hershel Shultz is a Navy veteran who is a BJJ instructor for veterans with PTSD, located in Texas. For his struggle with PTSD, BJJ “brings me to current, brings me to right now. Whatever issues I have, they’re right now, they’re in present time. I can’t worry about those little things” (Kris 6 News, 2019). He brings to light the importance that exercise helps the health of the veteran and can reduce suicide rates.

Lisa Bodenburg is a USMC veteran who discovered boxing after being on the brink of

suicide as she struggled with depression from combat experience. She returned from combat with a leg injury, and she sunk into depression to the point of tempting herself to suicide with a loaded handgun. When a neighbor just happened to come by, she opened up on how she felt. She knew she had to turn her life around, so she started to lift weight because she knew there were positive effects, "I know that there's a physiological effect, endorphins will be released, and they will make me feel better" (Grotto Network, 2019). To further stay in shape, she came across boxing and fell in love with it. She does not see it as feeling pain, but there is a challenge mentality with it (Grotto Network, 2019). And in turn, her faith in God has been restored as she feels He is there loving her and believing in her.

Dave Delano is a retired Navy veteran with deployment related PTSD. He experienced sudden anxiety and realized he was struggling with PTSD. Golf got him out and became his savior (Cronkite News, 2019). It gives him the chance to appreciate what he has in life and relax from the stressors of life; it even strengthened his relationships with his wife and son. He joined the Veterans Golf Association that works to help veterans like him. He then became a leader within the program and has used the position to fill the void by helping other veterans keep going (Cronkite News, 2019).

Major Gediminas Grinius of the Lithuanian Armed Forces served in Iraq and struggled with PTSD. He chose to run as "it helps your brain to relax" (NATO, 2018). For him, PTSD meant many negative things always going on in his head and running "just cleans it out…helps release the pressure" (NATO, 2018). He ran for two years and one time he ran 170km over 27 hours. He is an ultra-runner for Lithuania.

Future Considerations

Future considerations in therapeutic approaches to treating D-PTSD, need to extend

beyond the clinical settings. The therapies need to look at what the veterans miss from the military culture, and more alternative therapies should be developed based on what can be used in conjunction with trauma-focused methods to increase the success post-therapy. Sports and exercise, including combative sports, provide a healthy physical outlet, decrease interpersonal struggles, and increase the feeling of being a unit when engaging in these activities with others. As the stigma to mental health remains, alternative methods are important to develop and ones that include groups of other veterans that have D-PTSD. Further research into post-sport/activity can lend additional support that the effects are more long-term than trauma-focused therapies alone and can be engaged in continuously or with different activities that supports the veterans' needs and growth. Furthermore, more research should be conducted examining female veterans using exercises that are not designated aerobic, more with powerlifting and other physically demanding sports or exercises.

Summary

OEF/OIF/OND veterans are experiencing higher rates of D-PTSD compared to veterans of other wars. There are many trauma-focused therapies that are utilized; however, there are times when these approaches do not appeal or make the veterans feel comfortable due to stigma surrounding seeking mental health care and other concerns. By looking at non-traditional methods, such as sports and exercise, participation in these approaches can work towards mental and physical health support, social support, a sense of agency, and a decrease in mental and physical symptoms.

Chapter Three: Research Methodology

Overview

The use of a qualitative study is to allow the participants to be in their own environment and not in a clinical setting (Creswell & Poth, 2018). A qualitative phenomenological study will focus on learning the meaning of sports and exercise experiences veterans are actively engage in to manage their D-PTSD and comorbidity symptoms. There has been some research, in recent years, examining the use of nature-based and exercise-based therapies as alternative treatments for D-PTSD (Adams et al., 2020; Mehling et al., 2018; Peacock et al., 2018). Many studies with use of exercises are controlled studies where the researcher develops the exercise program and evaluates the effects during and after completion. This study works to obtain the meaning US Army and Marine veterans have with their established use of sports and exercise; this is extended into combative sports where there is minimal study into the practice. By being established, this means the veteran has taken part in the sport or exercise for a period of time (ranging in years) prior to initiation of the study, thus bringing more information to the effectiveness of long-term effects versus only short-term effects. Through observation, cognitive imagery, and in-person interviews, more in-depth information will be obtained. It is hypothesized that the information obtained will provide meaning interpretation that has impacting results and brings support to the use of sports and exercise as effective short-term and long-term alternative PTSD therapies.

Research Design

There are studies that look at examining the effects of sports and exercise from the start and end of a program; this study will encounter veterans that have actively been using sports and exercise to manage their PTSD symptoms. This is done to identify any long-term impact with use and the short-term impact from the days following the activities through their own

descriptions. A qualitative phenomenological approach for this study is seen as the most effective way to research and identify the meaning of what veterans describe with their experiences with sports and exercise for D-PTSD and including experiences with combative sports. The phenomenological approach will help to obtain the conscious meaning with the veterans' experiences in the activities and, hopefully, find that deeper connectedness to themselves and their life world (Horrigan-Kelly, 2016; Sheehan, 2014).

The phenomenological structured design will allow for in-depth exploration with personal narratives and described meanings of sports and exercise with veterans. The design will further use research of existing studies on the use of sports and exercise with veterans and PTSD. It will work to make connections between the literature and personal testimonies. Clusters of meanings will be identified and reported that are central to the kinds of experiences veterans describe from their participation in the activities and impact on D-PTSD symptoms. In addition, it will allow for introduction of new insight on the effective use of combative sports with D-PTSD symptoms through recording experiences from veterans who utilize them. The study will describe the experiences 12-15 veterans with D-PTSD have with sports and exercise, including combative sports, who are living in Central Texas, majority in the Fort Hood area.

Research Questions

This study aims to answer four specific research questions. The questions will guide the focus in obtaining necessary meaning and the importance of sports and exercise, with data on the use of combative sports, for D-PTSD. There will be unscripted investigative questions used in the methods process of the research to answer these research questions effectively and add valuable data to address the gap in the literature. The unscripted investigative questions will be used when there is a need for more clarity on a response and to get extensive responses where

pertinent. When unscripted investigative questions are utilized, they will be added to the Interview Questions/Guide (Appendix A) and submitted with the findings.

RQ 1: How do veterans describe the impact sports and exercise have on their D-PTSD?

When there is consistent engagement of an exercising routine (3-5 days/week), there can be decreased PTSD symptoms and less days of mental health struggles (Adams et al., 2020; Hall et al., 2020b). Obtaining narratives of the veterans describing how they feel using sports and exercise, including combative sports, can lend to understanding how they experience the decrease in symptoms and what other ways they are impacted.

RQ 2: When there are PTSD symptoms being experienced prior to engaging in a sport or exercise, how does the veteran feel after the sport or exercise is completed?

There may be times when a veteran is experiencing avoidance, dissociation, and other PTSD related symptoms prior to engaging in a sport or exercise (Adams et al., 2020; Lukoff & Strozzi-Heckler, 2017). The research works to answer this question by obtaining the veterans' mental health status prior to their engagement in the sport or exercise, and if there was an increase or decrease in the symptoms upon completion.

RQ 3: What do veterans describe as the primary catalyst that draws them to engage in combative sports?

There is a masculinity in the military culture (Shields et al., 2017) that can be found in sports and exercise for most veterans. Combative sports provide a hypermasculine environment where there is a safe place for aggression and anger release, problem-solving, and self-confrontation (Green, 2016). Each veteran that engages in combative sports can have unique needs that drive them to the sport and what they receive from it.

RQ 4: What is the holistic connectedness with sports and exercise for veterans with D-

PTSD and how are those defined?

Veterans that have engaged in a form of sport or exercise had increased rates of well-being, motivation, sense of purpose, and finding a new sense of peace. The use of martial arts can result in humility, positive psychological well-being, promote positive moods, increase energy, and connect to others (Willing et al., 2019). To obtain the answers to these questions, the phenomenological approach will be most effective in obtaining first-person described experiences from veterans with using sports and exercise as alternatives to traditional therapy. The personal descriptions will provide in-depth meaning that cannot be captured otherwise.

Methods

The direction of method was to obtain the most information from veterans and their experiences with the use of sports and exercise. To obtain the proper demographic of participants and training centers, the snowball sampling method was utilized to connect to other veterans and centers for the highest participation to occur.

Design and Rationale

The phenomenological approach was most effective in obtaining first-person described experiences from veterans with using sports and exercise as alternatives to traditional therapy. The personal descriptions provided in-depth meaning that cannot be captured otherwise. The use of a blend of interpretive and transcendental phenomenological approaches revealed how one sees their being in the connectedness of the world around them and in their experiences, and it identified the consciousness of their experiences and the meanings they see in them.

Sites

Locations for the sports or exercise were a mix of public gyms and private gyms. Managers of locations were contacted based on referral from veterans using the facilities. The

sites were open to have observer on site without membership and approved in-person observation. The indoor facilities facilitated individual, group, or instructor guided trainings. There was space at the facilities to observe without interfering with the activity.

Participants

A total of 6 participants were obtained for the study; 5-25 are recommended for phenomenological studies at it is best for data saturation (Creswell & Poth, 2018). Participants were selected through my personal network and through the participants networks (snowball technique). The participants were contacted via phone, email (Appendix D), and text message to clarify their voluntary participation and how they would like to be contacted from that point forward. In addition, they were asked if they were willing to receive an email to review and sign the Consent form (Appendix C) prior to initial interview. In addition, they were told their names were to not be disclosed and a pseudonym name was provided to them (Appendix F). Participants were established in their relative sport or exercise for an extended period of time. They took part in the sport or exercise several times a week at one or two locations. Through the recruitment questions, their physical injuries from deployment were annotated (Table 1) and their associated D-PTSD symptoms (Table 2) were identified.

Participants were required to be a veteran with diagnosed D-PTSD, any gender, age range from 23-65, US Army and US Marine Corps (USMC) branches, and actively engaged with the sports and exercise. With the USAF, the USAF Special Tactics units have higher rates of combat exposure and involvement than the other USAF unit (Ogle & Young, 2016), which makes this a smaller selection pool that of Army and USMC participants. The reasoning for the selection of Army and USMC branches are their high deployment rates, high combat engagement statistics, and they are the higher population of veterans in the Central Texas area. Participants were not

excluded if there are physical injuries, this can add further information as to benefits of physical activities for those with physical limitations. The facilities names were disclosed in the study to protect their privacy.

Though more than 6 participants were desired for data saturation, the number of participants still provided the potential for response saturation to the questions posed in the interviews. As all participants engaged in a consistent physical activity, with all of the sports or exercises engaged in being highly physical, there was an expectation there would be commonalities in what the sport or exercise provided to them. These commonalities were to be used to identify themes based on the response saturation to determine if there are shared experiences veterans had when engaging in a physical activity to manage their D-PTSD that could be applicable to many more veterans.

Procedures

The snowball sampling method was used to obtain participants through the network of veterans I know personally. The veterans have experienced multiple deployments, have D-PTSD, and are currently active in sports and exercise with other veterans. As I live in a veteran-rich community being by Fort Hood, the veterans I know are familiar with other veterans they train with or are friends with. I will use the networking to obtain email information for potential participants, who willingly provide email for me to initiate contact, and have my email provided to them if they prefer to initiate contact.

After obtaining their email addresses, the potential participants received the formatted emails (Appendix D). The email was used to ask the potential participants about military affiliation, deployments, deployment related injuries, and diagnosed PTSD. Also, they were asked if they currently participated in a physical activity. The purpose and process of the study

and requirements to participate were explained. The email further explained the process for providing signed informed consent to the potential participants.

Once the participants were screened and chosen from their responses to the email questions, they were informed via email that they were selected to move forward with participating in the study. They were asked what sport or exercise they take part in and established times and locations for the interviews and observations.

There were two observations, at the beginning of activity week and at the last activity of the week, this is when they start their sport or exercise after their down days and the activity on the day before they go into their down days (days they do not work out for a break). There will be pre- and post-activity interviews conducted at both observations. At the interviews, there will be scripted open-ended questions asked to obtain verbalized insight to the participants' experiences with PTSD and partaking in sports or exercise (Appendix A). Any unscripted investigatory questions used to clarify a participant's response to the scripted questions will be recorded. Prior to the first interview, the participants were requested to draw a cognitive image that best represents how they feel with the PTSD. This was requested to be provided at the first pre-workout interview and observation. Then it was discussed at post-workout interview with second observation.

The data was collected through the responses provided through the open-ended questions and any additional clarifying questions. The interviews and description of the cognitive imagery were audio recorded to ensure the proper understanding and interpretation of the responses. Information from field notes written when observing the participants during their sport or exercise were a way of collecting data. The audio recording, reflecting with the participants, and bracketing will be used to reduce bias in the analyzing of the information (Creswell & Poth,

2018).

Considered Procedure Factors Due to Present COVID-19

In the present time, there are issues throughout the world with the COVID-19 epidemic. Safety precautions were always taken by the researcher. There were no limitations with location access. Nor were there mandated shutdowns in my state, Texas. There was no need to alter the process of interviews or observations. This is noted to ensure this study was conducted in safety of researcher and participants.

Considered Procedures to Observation due to Location

Considerations were made to self-placement at each facility to observe. There were various locations that participants do their sports or exercise. The size of the locations determined my proximity to the participants. At each location, I placed myself in the furthest spot to reduce interactions or disturbances with participants or others taking part in the sport or exercise. When an observation took place in a small gym, causing me to be within arms distance to those present, I remained quiet and maintained focus on the participant(s).

Role of Researcher

For the study, I recruited the participants with the snowball effect starting with the veterans I know. I conducted in-person interviews and observation of the sport and exercise. Together with the participants, I developed coordinated interpretations and meanings, while asking and recording additional clarifying questions. The interpretations, meanings, and overall research were typed and stored by me.

Reflexivity

The purpose of using reflexivity is for me to actively acknowledge any individual experiences and knowledge that are similar to the participants in the study. Through awareness

of my personal position, I separated my knowledge from the developed independent knowledge, experiences, and meanings the research aims to obtain (Berger, 2015). I openly acknowledge my personal military and deployment experiences will be different from the veterans that participate in the study. It is important to express experiences on deployment did not result in D-PTSD, and I was not exposed to active combat. My military experience is only similar to the participants in the way of military structure and having deployed for OIF/OEF, as the participants will be Army and Marines. The use of reflexivity is used to show my experiences will not influence the interpretation of meaning and how the participants express themselves and to provide trustworthy meanings. It is important for the reader to see that, as the researcher, I am aware of my individual experiences and how I will bracket them to provide accurate interpretation and representation of the meanings from the veterans that participate in the study.

Data Collection

The data was collected in multiple ways were most effective in obtaining necessary information. The information collected was obtained from the semi-structured questions, allowing room for clarifying questions to be used to obtain a better understanding of what the veteran explained. The data was recorded on audio; this was to avoid use of video that would risk violating the privacy of the site and to protect the identity of the nonparticipants. Interviews and observations were done on the timetable of the participant, the observation times varied from 1-2 hours. There were some post-interviews that had to be conducted by phone after the observation, but those were also recorded. The information obtained from the text and email messages was included in the data in the study. Other data guidelines for data collection are in Appendix B.

Interviews and Observations

The study is designed to meet with participants at their training facilities. There were two

times of observation during the week. The interview and observation time ranged from 2-3 hours, as it includes time for interviewing and time to observe them in the activities. The interviews are estimated to take approximately 30 minutes pre- and post-activity. There was an allowance of interviews to take place only after the activity based on the schedule time frame of the participant. The interviews were open-ended questions, with fluctuation to ask clarifying questions (Creswell & Poth, 2018). The list of questions for the interview can be found in Appendix A. Participants will be asked to describe what drew them to sports and exercise and what overall results they have from them.

The observations took place two times in a week, once at the beginning and once at the end of the participants' activity week. This procedure allowed for observation of any indicators of struggle for the participant, such as if they were experiencing PTSD symptoms, entering their activity week, during, and ending activity week routine, and how the activity helped decrease any PTSD symptoms.

For each observation, there were two interviews, prior to the participant engaging in their activity and after they completed their activity. The first interview was intended for participants to identify how they felt on their workout break, if there were any times of increased PTSD symptoms and how they coped with them. It helped to identify the mindset the veteran was in when entering their activity routine. The second interview intended to identify how or if the activity helped decrease any elevated symptoms, how the participant felt through the activity, and any struggle moments during the activity they felt they overcame. The end of the week interviews intended to measure how engaging in the activity helped with any PTSD symptoms during the week, the effectiveness of the activity, and how they felt going into their downtime. This helped to illustrate the effectiveness of continuous activity and how life is impacted outside

of the training due to the participation in the activity.

Following is a sample of the open-ended semi-structured questions that were asked at the interviews. The full set of questions and when they are to be asked are detailed in Appendix A:

1. What is your activity of choice for coping with PTSD?
2. What made you choose this activity as a way to treat your PTSD?
3. How long have you been taking part in this form of activity?
4. Have you tried other types? If so, how were those with your PTSD symptoms?
5. How would you describe your overall PTSD symptoms since you have engaged in this activity?
6. What are some key things that you could describe about the activity that have helped you?
7. Who is your support system that supports your use of sports or exercise? Describe their level of support? How do you feel it impacts the effectiveness of the activities on the PTSD?

Before the activity (Same questions asked at for both observations):

1. How would you describe how you feel mentally prior to engaging in this activity today?
2. Prior to the activity today, have you experienced anything in relation to PTSD? Would you be able to explain some of it?
3. What would you describe as the strongest reason for engaging in this particular activity today?

Cognitive Imagery

The cognitive imagery of D-PTSD visually showed comorbid symptoms the participants experienced and illustrated what best represented what they feel inside that words could not

articulate effectively. It is a way of providing perception of negative experiences of the participants without the use of other percepts (Holmes et al., 2016; Ji et al., 2016). The internal and external stimuli that the veterans struggle to understand and manage are expressed in the images in a manner that cannot be truly expressed in words (Creswell & Poth, 2018). All participants were asked to draw an image that best represented how they feel when they are experiencing D-PTSD. The use of the image worked to make sense of the participants' beliefs, behaviors, and attitudes (Hagerty et al., 2018) about their symptomology, and how they see those symptoms after the activities. There are differences in how one verbalizes their experiences versus what is reflected in the imagery provided from what they feel mentally, a way to provide the "mind's eyes and ears" (Holmes et al., 2016; Ji et al., 2016). The imagery can give perception of the triggers and what they make the participant feel (Ji et al., 2016). The images that were provided were drawn prior to the observations occurred, some provided me the physical image and some text me the image. The participants were asked one time to create an image. The image was discussed within 24 hours after the last activity as to not risk triggering the D-PTSD before the observed activity and to not impact the effects of the activity when concluded. Following are the questions asked for the cognitive imagery (Appendix A):

Discussion of image drawn

1. The image you drew prior to the interview and activity was asked to represent how you feel when you experience the PTSD symptoms. How did you feel drawing it?
2. Do you feel it impacted how you arrived for your routine activity? If yes, how did you feel different?
3. Having completed your activity routine, how would do you feel about the image now?
4. What are ways that the activity allows you process the things you expressed in the

image?

Data Analyzing

Constant Comparison of Data

Comparisons of what the participants stated during interviews and what I understood them to say were discussed with the participants. Participants had final approval of the preciseness of the interpretation of meanings that best represented how they felt towards the sport or exercise. A communication time frame was created with the participants to ensure that they are contacted at the best times and not inconvenienced if they are at work or during a routinely busy time. The purpose of the communication time frame was to maintain a respectful boundary with the participants and maintain the rapport for extended communication after last day observation.

Interview Transcription

To ensure accuracy of analyzing and understanding, the audio recordings were transcribed manually. It ensured proper understanding of interviews from the two observations and to accurately quote the statements of how the participants expressed what they experienced in the sport or exercise. In addition, it ensured for accurate recording of participants' explanations of their cognitive images to avoid misquoting. The transcription was used to better assist with coding and obtaining themes through the use of qualitative software analysis.

Open Coding

Data was organized into categories with open coding. Themes were revealed and each theme had subthemes. This identified the effectiveness of the study approach in obtaining data that revealed the essence of the sport or exercise veterans use for combat-related PTSD. The open coding used in the qualitative software, following this section, were able to illustrate the

ranking in which the themes were the strongest and which were weakest in regard to supporting what meant the most to participants.

Qualitative Software

There are two kinds of qualitative analysis programs that will be used to assist in the analyzing of information received from the open-ended questions from the interviews. Each have different methods of analyzing the information and both provide assistance with identifying meanings and human reflection. The transcribed interviews and open coding are entered into both the programs and the results will be used as supportive evidence and assist the researcher with categories and meanings identified.

Dedoose

Dedoose is a qualitative analysis program that works with grounded theory. The coding schema and transcripts are entered into the software where it is organized into essential concepts (Berridge, 2016; Hurst et al., 2018). These essential concepts can be seen as dominant themes that are revealed through open coding and axial coding (Berridge, 2016). This software can assist in providing more accurate rational reflection on themes with priority on them.

Xmind

Xmind is a qualitative mind-mapping program that will be used to analyze information from inputted coding and the interviews. Images can be placed into the program, and it allows for brainstorming with different types of content inserted into it (Mammen, 2016; Mammen & Mammen, 2018). Themes can be supported using the map as it can assist illustrating identifying patterns, which can result in analyses credibility (Mammen & Mammen, 2018). The software provides an image of organized themes and categories with a centralized point, and it can be exported to document.

Trustworthiness

Credibility

The groups of participants were identified as military veterans. The veterans were US Army or USMC due to a higher concentration of this population in the Central Texas area and higher rates of deployments and D-PTSD. This process enhanced the credibility and reliability as it kept a smaller focus on a population. Trying to locate an USAF or Navy veteran would have provided a very small representation of the two branches due to the small number of squadrons or units that engage combat on deployment.

Dependability and Confirmability

The internal audit was conducted by reviewing categorical codes to ensure they aligned with the themes and meanings. The identified themes and essence were presented to the participants to ensure proper representation. The themes were supported by discussion of what the participants stated in the interviews, quotes were used from their interviews to confirm the credibility of the results of the open coding in identifying the themes. The individual meanings were conferred with the participants to ensure the accuracy of representation.

Transferability

The information that was obtained from the participants was evaluated for understanding and interpretations. Through the process, each participant was contacted so information and interpretations could be reflected back to them for their feedback. Terms and phrases they use were incorporated into the interpretations to best represent what they relayed to me through the interview process and the reflection of the cognitive imagery.

Ethical Considerations and Concerns

IRB approval was received on December 14, 2021, to move forward with the study.

Starting Study

The purpose of the study was disclosed to all participants. This was a summary via email, which was voluntarily provided through my veteran network, as a form of recruitment and screening of potential participants. When email addresses were obtained through networking, it was validated they were willing to participate in the research.

Due to confidentiality and meeting in public facilities, the facility management was contacted to obtain permission to conduct the study on the sites. In addition, the participants were reminded of confidentiality used. Interviews were conducted in private, either in a vehicle outside of the facility or on the phone away from others. Sites where the interviews and observations took place were provided permission request and response formatted emails (Appendix E). The permission response provided the options to allow for the study to be conducted and if they wanted a copy of the results of the study.

As this study probed into D-PTSD alternative therapy, the participants were reminded that the participation is voluntary. They were informed they can stop at any time they feel it is a struggle to them or they could not continue. Each received an informed consent form that identified in detail their rights and the process of the study.

Collecting and Storing Data

When collecting information from participants, there is always a concern that leading questions may be asked, as they can unintentionally sway the information provided by the participants. The questions posed were open-ended semi-structured so the participants could answer in their own words. It was understood that the information obtained may counter the expectation of results with the study, and any information that does not support the use of sports and exercise was included to prevent biasness of data. As I am a veteran, it is important to

bracket as to not present my own experiences or assume what the participants will say and answer for them.

The data will be stored for three years. The material will be stored at a singular and secure location for five years (Creswell & Poth, 2018). The main location the information will be stored will be on an external hard drive that I will personally maintain at my residence and in a locked safe. When the information on the hard drive is accessed, I will annotate the date, time, and purpose for accessing the information in a spreadsheet dedicated to tracking access to the information. The data will only be provided to and used for Liberty University studies.

Recording and Reporting Data

The interviews and observations were audio recorded and the reported information from the collection was compared to the recordings. Audio recordings were transcribed to better assist in accuracy of recording and reporting information to minimize any errors in what was initially heard in the interviews and ensure the information provided used a supportive data was not misquoted. The interviews were open-ended semi-structured questions and worded clearly and straightforward; the participants asked for clarification of what is being asked and clarification was provided. This approach in questioning provided for more in-depth information gathered and assisted in getting a positive understanding and representation of the participants' voices and meanings.

To ensure proper representation of information, information was provided in different formats – verbatim quotes, tables, and data output images. The information obtained from the interviews was reflected upon with the participants to present the best interpretation and representation of meaning. The meanings were presented in a table to make reading each individual meaning easier to read. The data obtained from Dedoose and Xmind were reported as

an output-images as produced from the program itself to avoid any misinterpretation or misrepresentation of data. Xmind produced an image identifying brainstorming of the different theme and subtheme connections, along with more supportive wording. This image was also used to illustrate the research questions being answered . Dedoose was presented as the table image from the data output of the program which ranked the themes and subthemes according to their numerical scores. The data was interpreted and presented according to the results of both software.

Cognitive Imagery

Most participants provided a cognitive image that represented how they feel when they experience D-PTSD symptoms. As there was a concern this may possibly trigger PTSD symptoms and alter the way the participant engages in their activity, it was addressed at the beginning by asking how they felt prior to the activity when the image was turned in. The drawn image was not discussed until after final activity was concluded to avoid triggering symptoms. In addition, there is a list of therapy resources that could be provided to the participants (see Appendix G). The after-care resources are veterans themselves or military knowledgeable to help the participants feel more comfortable with the therapists than being referred to therapists that do not have military experience or knowledge.

Interviews

There was the risk that the pre- and post-activity interviews could feel like counseling sessions, the participants were informed that the interviews are not a simulated or therapy approach. The rapport that was already established removed there being a negative impact with the questioning. The questions were formatted to address the connection between D-PTSD and the particular sport or exercise, there were no questions that probed beyond the scope of this

study.

Anonymity of Participants

Participants expressed concerns of their identities and activity locations being revealed and the fear of negative effects it could have on their careers and lives. In addition, sites where the activities took place received the protection of identity, too. Participants were provided the consent form that provided information on the study, the low risk involved, confidentiality of personal information, and option to select if they wanted their name to be disclosed in the study (Appendix C). For those that wanted their name confidential, they were provided a pseudonym form to receive their pseudonym initials and the form is maintained in the research files (Appendix F). Participants were sent questions about information of their deployment tours – war campaigns, country deployed to, and how many times they went to be allowed in the research study, they provided this information voluntarily and were able to not answer the questions if they felt it was too much information about them.

After-Care Resources

Due to the acknowledged risk of the cognitive imagery drawing and discussion triggering the participant's PTSD, outside resources were offered. The resources (Appendix G) are military affiliated, either therapists who are veterans themselves, military knowledgeable, or active military chaplains. The resources have the ability to speak with the participants in-person or virtually. The intention of having the resources be military affiliated is to reduce the feeling o stigmatism and provide the participants the ability to talk to someone that understands military culture. Yet, the participants were not wanting these as they either had their own therapy or had a negative view on therapy. It was also seen conflicting to the purpose of the study, as one participant voiced. The costs for the outside resources are not deferred or compensated. If there

are outside therapists that are willing to waive their fees for the participants, they will be added to the resource list indicating waived fees.

Summary

The choice of a qualitative phenomenological study was seen as the best approach to provide an in-depth illustration to the internal impact sports and exercise have on decreasing D-PTSD in veterans. It is felt that the best way to obtain the most effective data to help increase use alternative therapies to help veterans with PTSD is to obtain and provide the meaning sports and exercise have for veterans. This study is expected to validate sports and exercise as a source of internal and external support, and meet the veterans' needs of being with other veterans sharing a phenomenon. This study will reveal that sports and exercise are a coping mechanism that provides a masculine approach to therapy. This study will also reveal that sports and exercise have a long-term effect of decreasing PTSD and comorbid symptoms and reducing physical ailments that impact the PTSD symptoms. As an additional focus to the study, it is expected to reveal that combative sports are effective for reducing PTSD symptoms and provide the veterans with structure, control, and ways to manage their D-PTSD symptoms. Finally, it will reveal there is a holistic connectedness with other veterans that engage in the sports and exercises together.

Chapter Four: Results

Overview

The purpose of this chapter it to present the results of this research study. This phenomenological study explored the purpose and meaning veterans identify for the use of sports and exercise to manage their deployment-related PTSD. Four research questions were used to guide the direction and focus of the study: *How do veterans describe the impact sports and exercise have on their D- PTSD? When there are PTSD symptoms being experienced prior to engaging in a sport or exercise, how does the veteran feel after the sport or exercise is completed? What do veterans describe as the primary catalyst that draws them to engage in combative sports? What is the holistic connectedness with sports and exercise for veterans with D- PTSD and how are those defined?* Through the use of interviews, observations, cognitive imagery, and Dedoose and Xmind programs, certain themes came to light. The themes were Effects of the Activity, Military Resemblance, and Confronting Triggers. The themes are further discussed in this chapter, along with a discussion of the observations of the participants. The chapter will also have a breakdown of the findings from the interviews that describe the themes. Finally, the responses to the cognitive images and the images themselves will be provided.

Participants

Participant overview

There were only 6 participants obtained for this study. All participants were provided pseudonyms and they are as follows: E.G., C.D., F.M., L.K., N.R., and G.Z. Participants were of different races/ethnicities. The age range of participants was 32-47 years. Participants had been in two main military branches – USMC and US Army. The time in service ranged from 4-14 years, and the number of deployments ranged from 1-4. There were 3 participants that received

injuries while deployed. The deployment demographics for each participant are listed in Table 1. The table outlines the veteran's (participant) pseudonym given, their current age, gender, race/ethnicity, branch of service they served in and rank they held when they exited the military, the job title they held in the service, how many years they served, the dates (years) they deployed, the locations those deployments were to, and any injuries they sustained while deployed. A majority of the participants trained together and have known each other for years.

Table 1

Deployment Demographics

Veterans	**Age**	**Gender**	**Race/ Ethnicity**	**Branch/ Rank**	**Military Job**
(P1) E.G.	46	M	White	USMC/E-7 GySGT	Infantry
(P2) C.D.	32	M	White	USMC/E-5 SGT	Aircraft Rescue/ Fire Fighter/ Section Leader
(P3) F.M.	39	M	Black	Army/SGT	Ambulance, ER Medic
(P4) L.K.	44	F	White	Army/E-5 SGT	Light Wheel Mechanic
(P5) N.R.	37	M	Black	Army/O-4 Major	Artillery Battery Commander
(P6) G.Z.	39	M	Black	Army/E-4 P	Radio Transmission Operation Maintenance

Veterans	**Years Served**	**Deployment dates**	**Locations**	**Injuries sustained**
E.G.	13	1996 2001-2003 2004-2006	Africa, Afghanistan, Iraq	Back, knee, leg, shoulder
C.D.	4	March-October 2013	Helmand Province, Afghanistan	TBI, knee
F.M.	5	2003-2004	Iraq	None
L.K.	6	2009-2010	Taji Iraq	None
N.R.	14	2009-2010 2012	Iraq Afghanistan	Rotator cuff, knee,

G.Z.	4	2003, 2004 2005	Afghanistan Kuwait Iraq	None

Sport and Exercise Participation

Due to the snowball effect of veterans known at the start of the study, there was majority of participants that took part in combatives. There were some that used a form of weight training – powerlifting, Crossfit, Strongman competitions. An unexpected result occurred where there were two participants that did coaching, along with participating, in combative sports. Coaching was not originally seen as a form of sports or exercise participation; however, the participants identified the therapeutic results they felt with coaching and their PTSD.

Each participant was asked about the different sports or exercises they have taken part in; the ones they were observed in are in bold print in Table 2. In addition, they were asked if they have utilized counseling to assist with their PTSD, their views on the different on the effectiveness of counseling versus their activity, and the PTSD symptoms they experienced. The participants were asked questions before their activities and after their activities were concluded. These were done in two observations. The observations and interviews are blended in description of each participant.

Table 2

Activity and Therapy

Veterans	Counseling	Physical Activity	Difference between counseling and activity	PTSD symptoms
E.G.	No	Weightlifting, **MMA, Boxing – observed**	"I am able to manage my PTSD with the release, versus talking about them in a group of other veterans when my stories are nothing like theirs."	Intrusive dreams, sleeplessness, depression, loss of time, withdrawal, emotional numbing

C.D.	VA few times a year	**Weightlifting, MMA - observed**	"Traditional counseling sucks compared to lifting. Lifting/combatives does so much more than a traditional counseling session could ever be for me."	Withdrawn from those close, depression, anxiety, bursts of anger, sleeplessness, mood swings
F.M.	VA	**Combat sports, primarily boxing (training and coaching - observed**	"Combat sports, especially striking the back brings a relief or accomplishment. You feel the effects right away. Counseling seems to be a hit or miss."	Anxiety, flashbacks, depression
L.K.	Both VA and outside counselor	Strongman training, **Crossfit**, **powerlifting - observed**	"Talking helps clear the mind but exercise releases the endorphin rush we all need to calm down."	Major depression, anxiety, anger, frustration, mood swings, bipolar
N.R.	Use to go to VA but found it ineffective	Weightlifting, ***combative sports - observed,*** cardiovascular training	"Sports therapy is way more effective if for no other reason than the fact that the physiological responses is immediate"	Nightmares - causing sleep loss and anxiety
G.Z.	No	BJJ, ***MMA (coaching and training) - observed***	"I would think that it's easier to go and have physical activity invent your frustration rather than talk to most times a stranger about feelings and thoughts that you may or may not understand."	Short temper, disconnected feeling, lack of emotional sympathy, irritability, controlled

Results

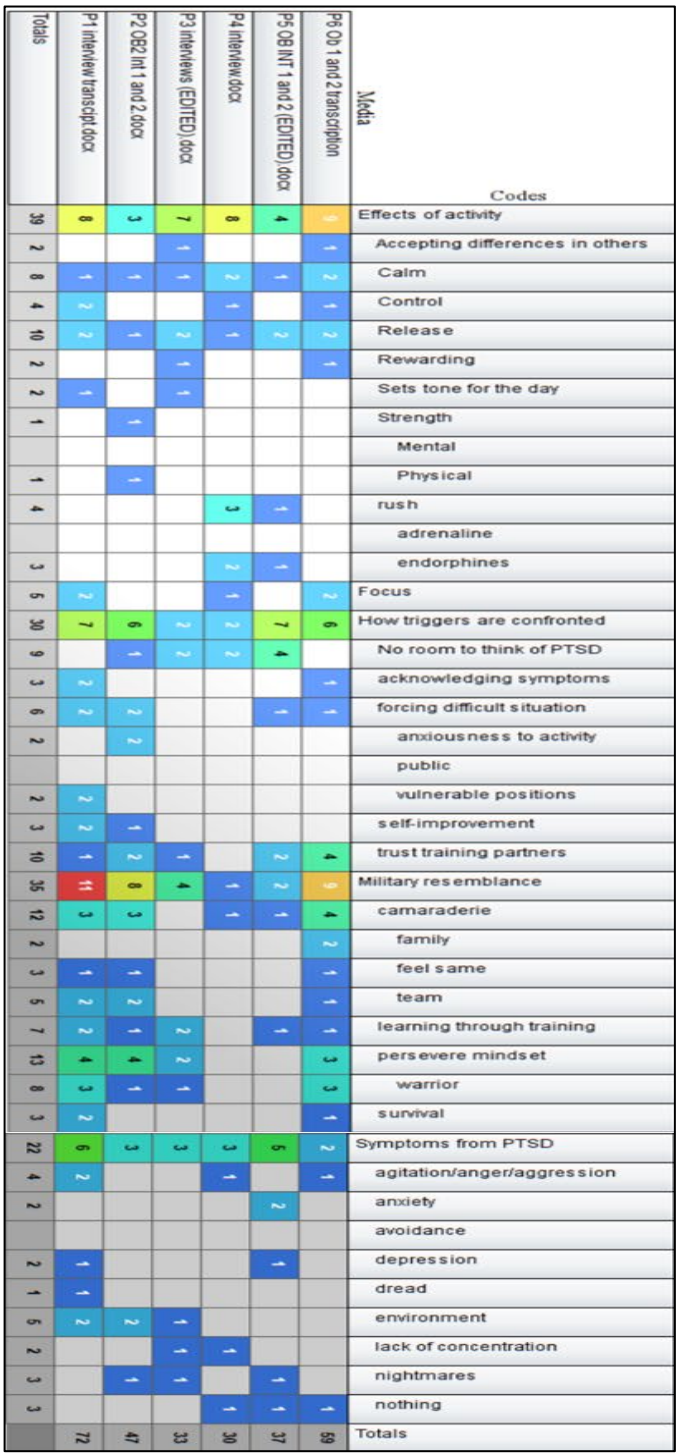
Theme Development

There were three key themes that were identified: Effects of the Activity, Military Resemblance, and Confronting Triggers. The themes are developed through multiple approaches. First, the participants were obtained through the snowball effect with the veteran network I was connected to. A total of 6 participants were obtained and a majority of them trained together. Next, I sent them emails with demographic questions and a request they draw a cognitive image

of what PTSD looks like inside for them. After that, I met with them for their sport or exercise for the first time at the start of their weekly sport or exercise routine. I interviewed them before they engaged in their activity. During their activity, I observed them at a distance where there was no interaction and annotated observations made on their behavior, things they said, and other things that were seen. I then interviewed them after the activity was completed and asked them additional questions and things I observed. After a minimum of two days, another observation was conducted at the end of their weekly sport or exercise routine, with the before and after interviews where there were some questions on the cognitive images they drew. With participants that trained together, their observations focused on them individually such as observing them at different sparring sessions where the focus was singular and not obtaining information from multiple participants at once. Due to participants training together and knowing each other for years, there were references to each other in interviews. When they referred to other individuals that were in the training sessions, those individuals' names were removed, and they are referred to as "training partner" to provide confidentiality to all not just participants. The interviews were audio recorded, with consent, and were transcribed to better identify themes with proper accuracy. The transcriptions were then imported into Dedoose, where the data were analyzed to provide key focuses of the participants. The information from Dedoose (Figure 1) identifies the different code words used and the ones with highest numbers. The Dedoose program also developed a packed clouded (Figure 2) from the code words, the bigger words are the ones most associated to from the interviews. The three themes identified were: effects of the activity, military resemblance, and confronting triggers. The themes are further explained with identified sub-themes. These themes and sub-themes are support by direct quotes from the interviews in the way the participants expressed their responses.

Figure 1

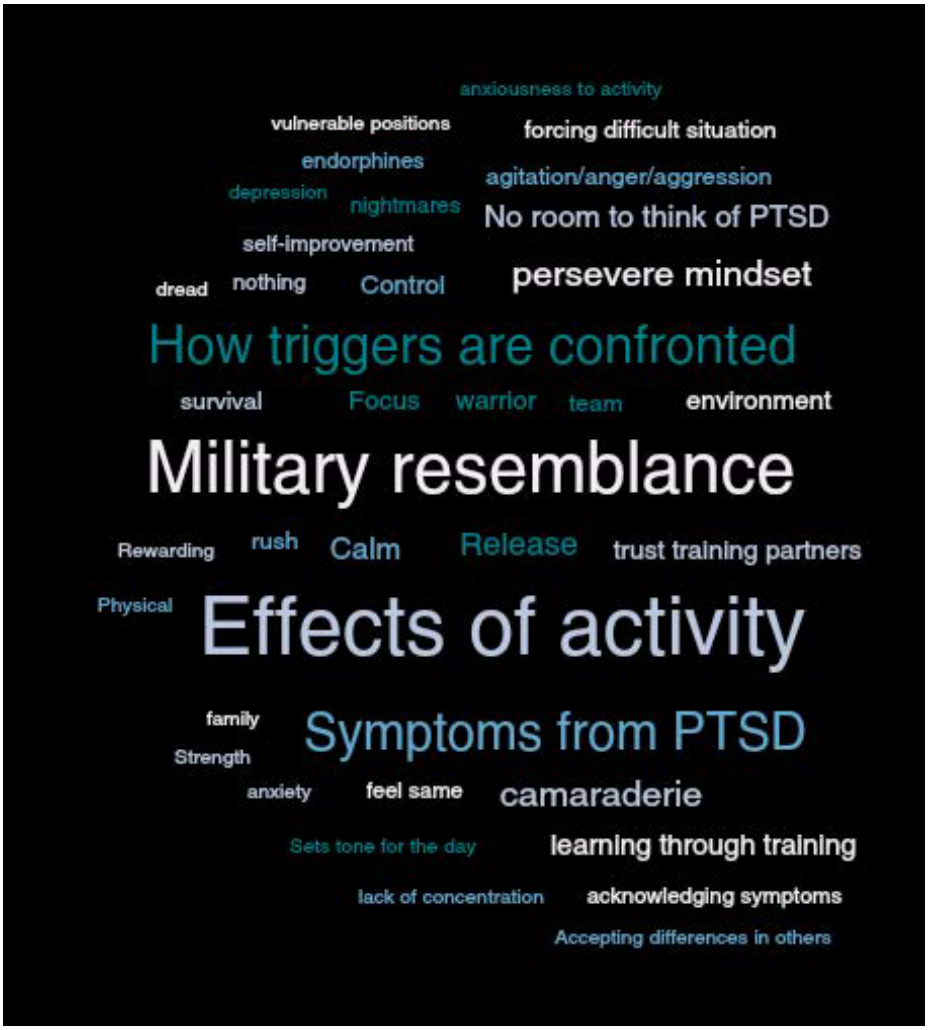
Dedoose Code Application



Codes	Totals	P1 interview transcipt.docx	P2 OB2 Int 1 and 2.docx	P3 interviews (EDITED).docx	P4 interview.docx	P5 OB INT 1 and 2 (EDITED).docx	P6 Ob 1 and 2 transcription
Effects of activity	39	8	3	7	8	4	9
Accepting differences in others	2			1			1
Calm	8	1	1	1	2	1	2
Control	4	2			1		1
Release	10	2	1	2	1	2	2
Rewarding	2			1			1
Sets tone for the day	2	1		1			
Strength	1		1				
Mental							
Physical	1		1				
rush	4				3	1	
adrenaline							
endorphines	3				2	1	
Focus	5	2			1		2
How triggers are confronted	30	7	6	2	2	7	6
No room to think of PTSD	9		1	2	2	4	
acknowledging symptoms	3	2					1
forcing difficult situation	6	2	2			1	1
anxiousness to activity	2		2				
public							
vulnerable positions	2	2					
self-improvement	3	2	1				
trust training partners	10	1	2	1		2	4
Military resemblance	35	11	8	4	1	2	9
camaraderie	12	3	3		1	1	4
family	2						2
feel same	3	1	1				1
team	5	2	2				1
learning through training	7	2	1	2		1	1
persevere mindset	13	4	4	2			3
warrior	8	3	1	1			3
survival	3	2					1
Symptoms from PTSD	22	6	3	3	3	5	2
agitation/anger/aggression	4	2			1		1
anxiety	2					2	
avoidance							
depression	2	1				1	
dread	1	1					
environment	5	2	2	1			
lack of concentration	2			1	1		
nightmares	3		1	1		1	
nothing	3				1	1	1
Totals		72	47	33	30	37	59

Figure 2

Packed Code Cloud



Theme One – Effects of the Activity

The first theme that emerged was the effects the activities provided the participants with their D-PTSD symptoms. There was a variation in sports and exercises the participants engaged in and there was a connecting focus on how the activity allowed them to manage their symptoms and function in their day-to-day lives. There were expressions of looking forward to the sport or exercise and how they felt overall with it. How the participants explained what the activity provided them varied in levels.

L.K. said she was, “Always seeking some type of rush or kick of endorphins” and “I feel kind of excited and looking forward to working out and seeing what unfolds”. N.R. described the effects of the activity as “physical exertion, physical activity releases endorphins that are physiological aspect”. With coaching, it was best described by G.Z.:

> My strongest reason probably for coaching is, is probably my need to help, but this is, this is my good Samaritan act thing I do is I did whole reach one, teach one thing. The world is a shitty place. So, I try to, but my little bubble of influence, I try to make them, see, and be better people and hope that they go out and do the same.

F.M. adds to the aspect of what coaching gives:

> I do know the class sometimes if they need it, but, um, that's so rewarding to me, you know, if somebody really wants to learn, there's not really like negative attitude. Like everybody, they were pretty nice. They got nice guys, nobody had an ego on them or anything like that. I'm willing to help those guys... So, of course I want to want to help. It brings me more, it's more rewarding than my actual job, helping people, you know, just fighting this way like that. But it's so rewarding helping people.

The four main sub-themes with the effects were the release, calm, control, and focus the participants felt from the activity. Participants expressed in different ways how they were impacted by the activities. There are participants that mentioned other activities they felt effects from but were not observed. Their experiences with the other activities are included as extra mentions.

Release. Feeling a form of release was described in different ways in relation to combative sports, coaching, and weightlifting. Obtaining a release has been used by the participants to allow them to function with less stress and less focus on the negatives in their

minds. There is a connection with the physical engagement of the activities and the way the releases are experiences. The differences in expressions of release give a more defining view of how veterans view the effects of their sports or exercise. E.G. said, "…my symptoms of hypervigilance and irrational anger are greatly addressed in my training" and that the training was an "outlet to get out anger and disappointment".

G.Z. had said that with using MMA, "…would describe it as a release and a way to unwind and reset" and other times engaging in paintball "…to get my violent urges out and get to run around and do things. And like, that helps out". N.R. described the effects of MMA as, "The physical, the physical taxation actually helps relieve some of their mental focus". When it came to weightlifting/powerlifting, there were some expressions of release. C.D. expressed, "I always feel some kind of a release after lifting" and L.K. explained it as "A rush or sense of release form bottled up emotions".

There was a point of correlation with sub-themes of release and calm expressed. F.M. and G.Z. illustrated the physical release and the striking is more preferred to choking as it takes more control and technique and the release and calm experienced from it.

F.M. stated:

> …it just helps release the stress. So, it's something to look forward to as well. I'm like, you know, let me just, I finish a day of work or whatever. I can't wait for that, that release that, that calm after training, although training can be, you know, tiring after it's just something to really look forward to.

He shared a same thought with G.Z. about striking with training (MMA, BJJ), F.M. stated:

> …like hitting a bag is and people, there's just something you know relaxing about it. Like it brings back, you know, the calm itself getting it like you get it out of your system, you

> get that anger, whatever you feel, you know, a release,

and G.Z. said:

> …I didn't really have a problem helping – sharing, it's what I do with people, especially if I see you doing it wrong around me, I try to help you out. And then it is just like, kinda like, I enjoy punching and hitting people more so that choking people, like hitting body parts and all that.

Calm. Calm is a state that was described in variety of ways with the sports or exercises. By releasing the tensions, stress, and/or negative emotions a calm can be obtained that varies. There appears to be a mentality that is connected to enveloping oneself into their activity and existing within it, not outside of it. It was interesting to see how combatives provided a mental calm to participants and even peace. E.G. had described calm as, "I really enjoy that time. It is similar to when I 'loose time'. My mind is oddly at peace". As expressed above in the correlation of release and calm, F.M. said with MMA, "Like it brings back…you know the calm itself getting it like you get it out of your system". N.R. stated that MMA sparring was, "calming" to him. G.Z. described calming after MMA coaching as:

> Um, I feel relaxed afterwards. Believe it or not. I was like, I, I like, we, we all sit and laugh. It's, we're kind of weird. We all sit, laugh as we beat each other up and learn different things…

Weightlifting was described as providing a sense of calm. C.D. said, "I like to feel the push of the weights and know I lifted good when I am calm and tied afterwards". L.K. said that after seeking a rush of endorphins from her heavy lifts, "Afterwards it's calming". There was a mention by E.G. with using weightlifting in addition to MMA, along with having tried yoga before, and he stated, "I have tried DDP Yoga with my son. The weightlifting has an immense

benefit to my physical health as well as dopamine production. The yoga yielded more of a calm and wellness feeling".

Control. The sports or exercises have shown to help the participants obtain control over their emotions and D-PTSD symptoms. There is a use of the activity to suppress or distract from their symptoms but also a way to utilize the feelings from the symptoms and displace them into the activity. This control helps them continue on with their day and function. E.G. described it as, "I think it keeps you grounded to what you can really do, to what reality really is" and that MMA helps him obtain "control of my emotions". F.M. expressed having control of his PTSD symptoms as, "It's harder to make me mad and upset. It, like, and since I have a physical outlet. I don't, I don't feel like, I don't feel the need to break stuff and punch people as often". N.R. described the experience of control over PTSD symptoms in training, "Yeah, you don't feel that at all. There's no, there's no possibility of like flashbacks, negative occurrences…". When it came to powerlifting, L.K. described control for her as it "keeps me grounded, clear headed".

Focus. Focus comes for the participants during and after their activity. There are aspects of the activity that draws the participant's mind into the intention and goal of the activity. There is another aspect where the physical engagement in the activity assists with focus after the activity. With coaching, G.Z. explained his mentality before his activity, and focus seemed to be described in relation to focusing on his class. For the class, he focuses on them and what he needs to help achieve in the class, rather than focus on himself and what he may be feeling:

> …I'm like, 'All right, this is cool. This is a big class. This uh, it's a diverse class. We got a lot of different skill sets and levels of, uh, proficiency here. This is gonna be fun.' And then I was like, we have enough, like when all the girls come it's all cool, we going to have enough girls. So now that the little girl doesn't feel so bad, it's like all these big,

> scary dudes trying to tell her to punch and do stuff. And then we have like my veteran people was like, 'All right cool, I got enough people that I've done, but majority of these drills with, so like I could show them or tell them what I want and then move on, and I could tell somebody else what I want and then move on to, we have all these little literature groups that everybody's getting it from, like their peers, rather than just be screaming about, 'Do this, you're doing this wrong and doing that.' And it's like, it's easier to take and digest that way.

One way he described what engaging in sports or exercise gave with focus was, "…all your extra pent-up aggression and energy is let out you'll be able to focus better on other things". L.K said that powerlifting "keeps me focused and driven which keeps me going back to the gym to work out". E.G. explained that the use of MMA training is "a series of problem solving exercises", this allows for focus in the activity. He also stated that "I also attempted and rare, old, techniques which make my mind focus" while engaging in the activity.

Theme Two – Military Resemblance

The second theme that emerged was the military resemblance experienced during the different styles of sports and exercises. The military resemblance came from words used and patterns normally associated to the military. The sub-themes illustrate the connections between the activity and the common terms that are related to the military. Three sub-themes: camaraderie, persevere mindset, and learning through training.

Camaraderie. This sub-theme was seen through three identifiers: family, feels same, and team. Camaraderie has always been important for to military members as it helps them to keep going, gives them a sense of belonging, and helps them feel protected. Family can be seen as a group of people that make one feel welcome and accepted. There is a connection when others

feel the same; there is a mutual understanding of D-PTSD. In the military, there is training that is repeated to correct errors and to perfect it increases survival on deployment.

After being told he sees things different than another veteran before his activity, G.Z. felt agitation and turned his focus to making himself feel normal when around those that think like him with his activities:

> So I try not to let it bother me, but I see that like, I'm kind of like, and when that's what I find other people that are like-minded, we're kind of like kindred spirits and I'm like 'alright cool I could be me', I'm drawn to them because we all basically have went through that same thing and this goes back to that whole camaraderie, who's your family thing.

G.Z. further identified that his training teammates and veteran students are a team to him and give him support. The training he does with these individuals helps with the effectiveness the MMA and coaching has on his PTSD symptoms:

> I think it does because like, it's, it's that you're not, you're not alone. Like people like got that, that I, I get the same thing out of doing this as my other friend that copes with it and stuff. He's like, 'this is my outlet. This is my outlet.' Because like you said, just like uh normal, he was like 'I really don't like people' like you're like some of the dudes I've met that. Like I like clicked with, we both do this but we could both have all these little other conversations that I probably wouldn't have had if we weren't punching and kicking each other in the face for a couple of years.

He sees this connection with others he trains with and that "It's like a second family that you get to choose, not that you're just lumped in with by circumstance". N.R. said that the activity provided key things MMA did to help with PTSD for him, "there's over things like comradery".

C.D. had been away from the MMA training for several months and when he returned, he was not sure of how things would go.

> at first very unsure and because this has been my first time back in…5 months maybe, 4-5 months…and felt uh hmm almost like uh just uneasy like I didn't belong, like when go to the first whenever you go a gym for the first time you just feel like, like awkward right?...yeah kinda like that and then once we started going um I started feeling much more relaxed and I just I just felt relaxed…

The team accepted him back and that is what helped him to relax:

> it just took a minute and then you know and once we started going ya know, everyone's like hey just (inaudible) oh there your good man, you got it now, you're just working through and just training with each other and it just kinda really just leveled that all off and just felt, felt good ya know.

C.D. further explained how there was an understanding amongst his training partners who are other veterans who deployed to combat zones. "Misery loves company, right? And some of the strongest bonds between people are developed through some of the worst of times, the shittiest of situations, right?" E.G. added to this connection when looking at the appeal of MMA training, "the appeal is camaraderie in misery". When E.G. felt his PTSD triggered due to new people attending the MMA training, he expressed the value in his team:

> …know you have your team as kinda your place of peace and um there's good um (3 team members names) who have all experienced war and then (1 team member) was involved in the SWAT shooting (referring to officer involved shooting E.G. and team member experienced) so you kind of have a, you have a good environment.

After completing the training, when asked about how he felt in regard to his PTSD, E.G. stated,

"I had a good cardio push at the end and my training partners made me laugh". When it came to powerlifting routinely with a group of people, L.K. stated the activity gave her, "Routine, part of a community, encouragement, part of something".

Persevere Mindset. The mindset to persevere looks at how the participants pushed through different situations and identifying the existence of the warrior mindset. The warrior mindset brings not backing down, problem solving in crisis, and accepting the pain of growth that can be experienced. C.D. disclosed experiencing lots of pain in his lower back and knee that are combat related. "I am having knee and back pain, it is why I have this brace on my knee. My lower back and knee were injured from the Marines with the helicopter jumps and the impact on my body from landing". Even with the pain, he lifted weights and participated in aspects of MMA training:

> I guess it's hard to explain like when I'm doing it, it hurts ya know, all my injuries ya know all that stuff it hurts so it sucks because it hurts, but the just I don't know if it's necessarily physical exertion that I get while doing the workouts or at least with the combatives um that helps but it's more of the team aspect of it that really plays into it.

He pushed through the pain as he was encouraged to perform certain MMA standing moves:

> …that's like where sparring really, the combatives in general, really sucks because I don't know if you noticed, um one of the guys (team member name), when we were when I was throwing the um left hook kept telling me 'hey turn your body' ya know 'turn your foot'…

He explained as getting back in there and getting through the anxiety as "almost like combat mindset again". E.G. supported this in saying "A lot of vets call this "embrace the suck". When identifying the benefits to the use of MMA, E.G. explained it as "warriors go thru hard times and

not avoid them and this training is a good place to really deal with those issues". During the training, there has to be ability to make quick decisions when in vulnerable positions or situations. E.G. states, "There is a similarity in combat to the training, for me things move slower but my mind speeds up". He further explains how one has to think to push through the training:

> …you're kind of um learned that learned in war that this is a marathon and you would see young Marines put up all this energy ya know and then not understanding that this gun battle is going all day, so managing that energy is very important skill.

The aspect of not backing down, F.M. described himself as someone that does not do that even with age:

> I mean…shoot, I'm 39. I mean, I should be out of it. But I know that, but I mean I had a fight two weeks--two and a half weeks ago—and uh, and I won so I mean that actually, cause after, I, I'm actually better now. Yeah I'm more knowledgeable about it. Not as athletic as I was, of course when I was 23, but I took a 10-year layoff of, of competing and stuff, you know, I still train…So, I kind of got back into the game late, but you can tell it's very important to me cause I'm still in it. You know I still want to compete.

He prefers the training of MMA because of what it brings him and feels different about doing a sport like Crossfit as he sees MMA as fighting with not giving up, competing to the end, and doing it the way he wants in his style:

> I'm just not a fan of it. I say it's like where, where athletes go, and like you know into the pasture that's where athletes that's when you know they're done. You know, because it's a place of, of people who almost made it and been getting world competitive, and that's what they do now. You know, I just don't believe in it because I don't want to throw heavy weight around like that because I'm very competitive. So, if I have to squat I'll be

> competitive and I'll do it too fast, break form, it's a bunch of stuff…

G.Z. developed a mindset from youth and adapted it into present time:

> It's like, isn't it that I wasn't coddled or whatever it is like. Yeah. That happens. You get mad, but you still, there's still things you have to do. Things you can't let what's going on stop you, hinder you so much. You still gotta perform.

This mindset translated into how he finds himself responding to MMA or BJJ

> It is…that fight or flight thing kicks in. And that's kinda cool, but it's, it's this like safe or whatever. Like my friend picks at me, he calls it a, your little warrior mode kicks in or whatever it is. Like, you're not really like, it's, it's right now. It's like kinda, it's kind of tamed as that like low level and stuff. What you're getting comfortable with the contact is like, everybody's scared to get hit until they get hit. I'm like, oh, that's not so bad. They're not scared of it no more. So, there's like, yeah, you still don't want to get hit, but now, like you, you felt it, so like it's, it's much worse in your head, that actuality stuff.

He was able to explain further his mindset when it came to when he learned how to face a difficult situation when it came to a coach that he had to spar individually when everyone else left the class:

> That's like, that was my mindset was like, all right, I can't run from it or I can't like keep getting in the end of the line cause there's no line, there's just me and him. It, it forces me to either…either you're going to run away from it or you're gonna embrace it and get over it. But I chose to embrace it, get over it.

G.Z. was able to take this and turn it into his style of coaching that is understanding of others.

Learning Through Training. The participants described how they learn from their training with their partners. They use losses as growing points. In some observations, there were

individuals video recording the training sessions, and those participants use the video footage to watch how they performed and what they felt needed to be corrected. E.G. stated about the main reason for engaging in MMA, “MMA is what I know. The training has a familiarity to it and yet it forces growth. I cannot problem solve the same way I could in my 20s as I approach my 50s”. He elaborated farther:

> I think that…um…if something about me is done, it orders the weak, it orders um…I would equate it to someone who plays chess their whole lives, where their life and the way they think and manage money and everything goes through that vernacular, that they’re familiar with, and so for me is just setting out…ya know I will go through all the film and say “wow”. So you know there was a point in time where…I don’t remember if I was going for something high-risk, there was a point in time with (training partner name) I was going for something high-risk, and a point with (second training partner name) I was going for something high-risk, but with (training partner G.Z.) I don’t think I was going for anything high-risk at all and he reversed me and I was getting out of it as the round was ending, but I will obsess and magnify that sequence for the next six days and then probably put myself in that sequence and then correct it. And I will obsess over it, it doesn’t matter how many good things happen in the round, any of the other rounds, I will magnify that what you would call a defeat.

C.D. talked about the MMA training and his view on the learning process with the instruction:

> Like we were working on our head movement ya know and being able to pick combinations out of pushing people here or controlling the other person’s hands and capitalizing on that kind of stuff ya know. Like, and it and it builds ya know we just started with punching and moving, right, ya know that forwards and backwards, and then

> we built into the forwards and backwards throwing the cross, and then we built into the um adding the hook set and then we worked into the push down, the hook, the weave under, and then the hook again That worked into working that stuff with an opponent and it's just it's a constant build on what you're working and it reinforces all that other stuff that we've been learning and it's just progression ya know.

With MMA and boxing training with other partners, F.M. explained the learning in the training as, "Not only are you hitting a bag or people, you all learning new activities, which is just really, really fun, you know?" It was asked about if coaching gave him the same in the way of training combative. F.M. stated:

> I rather be coached then that'd be my own coach. That's why I'm there. That's the whole, uh, forgot the analogy, but it's like, if you your own lawyer, you have a fool for a client type of deal. You know that type of, that type of mentality. You want to have…um, that's why I'm there, you know, it's for (training partner E.G.) to help my flaws and to get better.

The MMA training has helped N.R. in many ways, "also the idea of still learning. So, having to keep your, your brain engaged to gain more, more expertise is another thing too". When it came to coaching, G.Z. saw many good things that came from the training:

> I like that, that, that whole, like, after action review thing is like, cool, like you did, this did this. This is where we grow. This is how we get better. This is how we all approve. And we all learn from each other and go on. So, I'm kind of like, I'm happy at the end. Not because it's done it because I see the look of like, I see that light bulb moment click on for a lot of people's like, ah, I know what you're talking about now. This is cool.

The participants saw learning through the training in different ways. There was a commonality

that growth came from looking at what was done wrong and what worked when done.

Theme Three – Confronting Triggers

The third theme that emerged were the ways the participants confronted their D-PTSD symptoms through their sports or exercise. This theme comes full circle from the other two themes and sub-themes. By knowing and expecting the way the activities will impact them and how they connect to others and the push of the activities, the participants are able to safely confront their triggers The ability to confront their triggers works with the camaraderie and persevere mindsets that participants have expressed. Confronting the triggers can bring calm, control, and focus as the PTSD symptoms are then better managed. There were three main sub-themes: trusting training partners, no room to think of PTSD, and forcing difficult situations.

Trusting Training Partners. Some of the participants expressed the importance of their training partners and how they help in different ways. Trusting training partners is a representation of trusting those in your units in the military, those they had to deploy with. It can be hard to trust that others will understand and trust others to support them if they are struggling with PTSD. Many veterans face having to hold things in because of stigma, so having training partners that can be trusted allows them to have a place they can feel safe. It can take a lot that one will trust another with hitting them in combative training. Ina group training session, C.D. explained it as:

> …so, I like, so the small group like that, cause I mean what there was 8 of us maybe, I think, ya know 8 of us and I have been fighting with all those guys for quite some time now, so I am comfortable with the guys and I know nobody in there is gunning to hurt anyone. Ya know…it's not like you were walking into another boxing gym or MMA gym or whatever, you don't know anybody in there now everyone's got something to fucking

> prove, right? We already know everyone in there can whoop some ass and some much better than others, but we all know that 'hey we're here' we have a feel for each other's skill levels and everything. So, when I'm in there sparring with everyone it's very comfortable because of that and then having (name of coach) be the that guide, the coach, teacher, whatever you want to call him ya know it really…it just kinda gives you that direction that 'hey this is what we're doing' ya know 'this is how we're training today' 'this is our focus and get a goal'.

C.D. further states on his training partners: and how it helps him:

> I think, for me at least, it'd the idea that you know we're in there getting our asses kicked together, we're kicking each other's asses, but we're there to better each other. And I think that is what helps out the most for me.

E.G. connected camaraderie to trusting training partners by saying, "When camaraderie is about mutual problem solving it puts the vet back in charge of his/her life, or to quote Joe Rogan 'Be your own hero'. This shows there has to be working trust to solve the problems together, and in turn they help themselves. F.M. adds to this trust in each other as he explains how MMA training can be viewed when it comes to use of strength:

> I mean, I'm trying not to hit everybody hard, like, but striking is my, is my forte and I really, I really, I would just say…they're hitting hard because they know they don't know there's other ways to it. They believe is the only way to get better. I mean, (training partner E.G.) and I, we don't have to get hard to know we can get the job done, ya know, we are kind of similar to that.

N.R. was able to present how he trusts his training partners by placing them as his support system, "It's those who are, or to the left and right at me when I'm participating in it". He further

says about having trust in his training partners as, “That's I mean, I don't, I don't think it would work without it. And as much as you, like, it's kind of compulsory to have the structure of the sport’s…to go along with the activity”. With the use of activities of both paintball and MMA, G.Z. said he felt “relatively safe” when doing them. He stated that his training partners were his support system and he trusted them to help him and provide him training guidance. With coaching, G.Z. finds comfort in it and trusts he will not experience PTSD symptoms:

> …the gym area that's my second home. That's my safe space and stuff. So, it’s like, it all that goes away. It's like, as soon as I come in the room or whatever, and you all the faces and all the people I know, I’m like alright it's going to be a good day. It'll be a good class and stuff, but it's like, it goes back burner, basically.

In the dynamic of the gym and coaching, G.Z. relies on his veteran students to help him to coach other team members:

> It's like it, it does…Uh, that's the, that's happy when they're there and I’m like ‘All right, cool I can rely on him for this’ or like, ‘this is his skill set, so I'm going to put him here’, cause I think cause I think he will get more out of showing this than me showing it. I don't know all the names for them all the time all the time.

No Room to Think of PTSD. Participants did activities that kept their minds occupied, focused, and did not leave room for the mind to veer off into the negatives of PTSD. There seemed to be an agreement of how there is both something for the mind to grab ahold of to focus on and the activity making them too tired to think of anything else. When it came to engaging in MMA to manage his PTSD, N.R. stated, “the aspect that it takes total focus, so you don't think about anything else”. He is active in multiple physical activities, “I think the one thing that they have in common is the fact that, like I said, they're all, they're all”. Since taking part in MMA, he

described his overall symptoms as:

> Um, the lesson is, as much as, uh, they, they're not existing during the time in which I'm participating in the activity. Um, and they're lessened in general, uh, by the activity because I don't know, maybe because I'm pooped out and I don't have the time to think about anything else.

F.M. elaborated more on the impact of his activity with MMA on his symptoms. His explanations provided more substance to what other participants stated:

> During the week yes. That morning, no. When it's early like that, you know what I mean? Some of my stuff comes up more in the nighttime when the place gets quiet, so you get into your thoughts and stuff that that happens. But when you just woke up and go into training, you know, between that period of time, wake up, jump in the shower, head to training, my minds not thinking of that. But later on, you know, as the day gets slower and stuff like that and it's coming on to nighttime, at least for me, you know, your mind starts racing.

When he trained, he did not feel his PTSD triggered, his mind does not focus elsewhere. He further explains this and the joy the activity brings him.

> None at all. No. My mind, my mind is not there fighting and training yourself is really—my mind is just really not on anything else, but that moment, and—and I, as you can tell, I laugh and joke a lot when I'm there and so on, you know, that stuff just really brings me joy, I guess, you know, it's training. So um, my mind is no, nothing PTSD related at all when I'm training.

With powerlifting, L.K. simplified the same thing as, "When you are tired it is hard to be mad" and "the feelings don't exist during or after the workout". C.D. felt that when it came to

weightlifting for him that "Nothing else matters in the time I am at the gym".

Forcing Difficult Situations. Where some avoid situations that trigger their PTSD, these participants willingly placed themselves in trainings that made them face their PTSD and not give in to it. There was a described vulnerability in the activities and how anxiety and their environment were a commonality. With MMA sparring, E.G. stated that he "constantly put myself in the worst possible positions in my training and not panic when dealing with that 'trigger'. He explains that he is aware his symptoms are there and are or can be triggered:

> there is a reality of, ya know, combat sports that no amount of talk, ya know whatever talk is, you have to walk so you um…you know that reality is the same in combat too so you just..it just keeps you very sharp ya know…um..and I don't have any…it helps me take the reality of combat and put it into a sporting context. Um…the um…I do a lot of high-risk maneuvers just to put myself in bad situations and that I think you can push the trigger point a lot further away.

C.D. explained how he felt entering sparring and the mindset that was mentioned earlier, in Military resemblance section, is included in the statement. "It's like at the beginning I have that really high anxiety you know being put into that like almost like combat mindset again and then once we get going it's just, I relax quite a bit". He entered the sparring knowing he will experience anxiety of being accepted and being struck in sparring, "I always feel on edge when going into the sparring. I'm always on edge right out the gate than I normally am". N.R. did not sleep well the night before due to nightmares, but he arrived at training. Due to not being there when the team was warming up with practicing techniques, N.R. arrived and entered the sparring stage:

> I was mentally tired and physically not prepared. If that makes sense. I wasn't physically

> tired so much as I was, I wasn't like ready. I wasn't warm physically when I--beforehand. And then, but I was mentally tired, like I was mentally taxed

thus, placing himself in a difficult situation to either sit back knowing he was not warmed up and mentally taxed or face it and do the sparring. With coaching, G.Z. forces himself to work with a large number of veteran fighter and rookies:

> At first, it's a little overwhelming. I'm like, damn now I gotta, like, I…it's obviously all those moving parts. It's kind of hard sometimes and stuff but, like, that's what I, I kinda like rely on my, uh, older veterans have been there.

Observations and Interviews

The observations provided additional information to what was obtained from the interviews. The following information is a combination of the observations and the interviews. There were many things that were noticed during the observations and are mentioned in the description of the observations. There were additional questions asked to participants to obtain more clarified information. The majority of participants did train together, but their observations were done at different times even when training together to provide singular focus on the individual participant. There were some commonalities that were observed across all participants: humor, teamwork, encouragement, and challenging will of self and others.

E.G. – Participant 1

E.G. was observed at a training location he owned that is used for boxing, MMA training, and LEO defensive tactics training. He has been training in MMA for over 40 years and there is also training in boxing. The use of MMA helps him with the PTSD symptoms of hypervigilance and irrational anger. E.G. utilizes the sport to “control my emotions and an outlet to get out anger and disappointment”. He has been able to “take the reality of combat and put it into a sporting

context". The training allows him to "place myself in bad situations through high-risk maneuvers as it helps me push the trigger points back further".

When conducting the first observation for E.G., there were two LEOs and E.G. There was a focus on a specific style of BJJ training that was used as a training tool for officers and other MMA fighters. There is a boxing ring in a garage with a compact space outside of it. All fighters were in the ring at the same time. E.G. walked the two LEOs through the training and had them practice the movements. He both participated in the training and coached it. With responding to how he felt about his PTSD prior to the activity, he stated that it was tough with the training because he had to "teach new information rather than focus on my own exercise. I did not have my normal".

In addition, being observed heightened his PTSD as it was in his controlled environment and created a dread for his MMA. At the end of the training session, he was able to get a "cardio push" with his training partners as they did timed rounds of sparring. Everyone took turns sparring with each other while the other partners waited outside of the boxing ring in a compact area that was available; there was lots of laughing and encouraging. It was observed he moved behind everyone while waiting his turn. There was positive encouragement of those in the ring sparring. He expressed he was able to attempt rare and old techniques which forced his mind to focus, which in turn his "overall feeling is one of prepared

for my day".

At the second observation, there was a total of eight individuals which was a mix of LEOs and MMA fighters, two of the fighters were not part of the normal team and were new. E.G. was doing a lot of focus on training the group, especially the two new fighters. This altered his environment, and he felt his PTSD triggered from it, "…a bunch of people that weren't really

supposed to be there" and that took way from his "place of peace" with his normal teammates. "…you have a good environment and then you interject people you don't get along with socially…it made me irrationally angry". He worked in his own time to do the drills, but he was not able to get the focus on his own training, "You're managing people rather than managing yourself and that makes me angry". F.M. and G.Z. were present and assisted in providing coaching to group and E.G. as he worked on moves. E.G. stopped and asked questions to the group of the intention and purpose of the drills they were working on. He interjected humor and "trash talk" in the training which seemed to elicit a relax in the environment. Safety was used in sparring with head gear, boxing and grappling gloves, and shin guards. They did 30 second sparring rounds with each other and E.G. would give guidance in the sparring and interject more humor.

C.D. – Participant 2

C.D. was observed at two locations, a gym and then at E.G.'s training location. C.D. has more of his mental health invested in heavy weightlifting, and MMA is conducted every now and then. He has been involved in weightlifting for many years, especially when he was in the USMC and uses it to push himself harder. There is a struggle with avoiding sleep due to the nightmares and finds himself drinking a lot in the evenings. The weightlifting gives him a reason to "have something to look forward to" even though he was in pain, "My lower back and knee were injured from the Marines with the helicopter jumps and the impact on my body from landing" and tired, "I try not to sleep because of the nightmares. So, I am really tired and hungover". The MMA pushes him to face the anxiety of "being put into that like almost combat mindset again and then once we get going it's just I relax a bit".

When conducting the first observation for C.D., it seemed to appear that there was stress

when too many other gym patrons crowded the area of the participant. C.D. was off to the side of the gym doing lifts at the rack station. There were minimal individuals around him, and he had stepped away from the station and sat in the corner. He looked around the room and then went back to finishing his sets/reps. C.D. then went to a weight station in the front of the gym, at the mirror, and in the middle. As he was lifting, a group of men started to hang out behind his station working at another weight station. "I was getting nervous with them standing there and had to calm and wait for them to move. It interrupted my lift and agitated me. I do not like people at my back like that". C.D. started to stall on his weight presses, and even stood up at a point with his back to mirror before settling back into his lift. When he was done a that station, he went to the other side of the gym where the cables were and as he did his workout, he would stand facing the center of the gym and appeared to scan the room. He talked about knowing it was his PTSD about now always feeling secure in his surroundings, and there are times when he has to step back and assess when room. He pushed through the pain with his knee brace on but the pain did not matter to him. When it comes to weightlifting, "It keeps me going and alive. When I am lifting weight, I am not drinking and not having flashbacks or depression. Nothing else matters in the time I am at the gym" and this weightlifting session "I like to feel the push of the weights and know I lifted good when I am calm and tied afterwards".

When conducting the second observation for C.D., he said he had a good week between the observations and was not experiencing PTSD symptoms. However, before entering the training, there is the feeling "on edge when going into sparring…it triggers those nerves like the hypervigilance and just something coming…". For this training, there was a group setting in which MMA fighters and LEO's were present. There was training in combative tactics for LEOs and for MMA fighters. He was familiar with others that were present in the training. Others that

were present acknowledged him joining in the training. The team welcomed him, and it appeared brotherly with humor and positive support, "…yeah exactly, it just took a minute and then you know and once we started going ya know, everyone's like hey…oh there, you're good man, you got it now". C.D. took part in the practice of the movements, he appeared to be focused on the repetition of the movements and getting them correct. He did not appear to worry about those around him, like was observed in first observation at a public gym. As G.Z. was giving him instruction, C.D. was pushing to do the movements to the point the pain was too much, "I can't rotate on my knee like that because my knee's gonna go out, and my back doesn't rotate like that because my back's shot, so it's difficult for me to throw punches correctly" "I tried to do it and it hurt". He continued practicing the moves that pain would allow him to do. There was sparring with no head gear, and this is when C.D. stepped out of the ring to be an observer and encourage other fighters. Due to a TBI from combat, C.D. maintains caution to only spar when safety gear is utilized.

F.M. – Participant 3

F.M. was observed in two locations, the first was E.G.'s training location for MMA and the other was a MMA/BJJ/boxing training location for coaching boxing. F.M. has been doing martial arts, specifically karate, since the age of seven. He eventually got into boxing and worked at it until he was good. Boxing and MMA helps him with PTSD as "there's just something you know relaxing about it" when it comes to him hitting the bag and people, "it brings back, you know, the calm itself getting it like you get it out of your system, you get that anger, whatever you feel, you know, a release". Over the years it "helps release the stress…something to look forward to as well". He refers to the boxing and MMA as being fun for him and a way to help others.

The first observation was at E.G.'s training location with MMA. There were several other MMA fighters and LEO's in the training group. F.M. injected a lot of humor in the training with the others. Earlier in the week he felt his PTSD, but not the morning of the training. "When it's early like that, you know what I mean? Some of my stuff comes up more in the nighttime when the place gets quiet, so you get into your thoughts and stuff that happens." The training takes his mind off of the nightmares, it is outside of the training when the day goes on that he feels the PTSD triggered, "But when you just woke up and go into training…between that period of time, wake up, jump in the shower, head to training my mind's not thinking of that". He gave focus to the techniques and appeared to be comfortable and calm. "My mind is not there fighting and training yourself is really – my mind is just really not on anything else…I laugh and joke when I'm there…that stuff just really brings me joy." There were techniques where fighters held pads for each other and F.M. provided guidance to others as he was training, too. "I coach, I mean I do a lot of personal lessons…especially with the teenagers…that's so rewarding to me, you know. If somebody really wants to learn, there's not really like negative attitude." When training with the others, he took the coaching from E.G. and advice from other fighters, he even asked questions on techniques, "…that's why I'm there, you know, it's for E.G. to help my flaws and get better".

The second observation was locally owned training gym for combative sports – BJJ, MMA, and boxing. F.M. conducts coaching there with group or individuals for boxing and MMA. He was coaching an individual with the observation. There were several other fighters present for other training being conducted. F.M. was off to the side of the ring with the fighter but was not looking right at the fighter. There was a mirror to one side of them on the wall and the ring of the other side of them. F.M. was positioned between them with each at a side. He looked in the mirror as his fighter went around him tapping his body with their gloves. When

asked if he felt hypervigilant or uncomfortable at any point, “Nah, not at all” “…that kid is my focus…and um I was looking, I could see his form because there’s a mirror to my left that I was looking at”. After the group left the ring, he and the fighter moved into the ring. It was observed that F.M. did not place his back to the crowd, even as they shifted to different side of the room, his position shifted in the ring as he held striking mitts for the fighter. When asked if he does it because of combat experience, he stated, “I have no idea, people always say never. So, if you watch uh one of the videos…people have told ‘What are you looking at?’…I don’t know what it is”. He further added, “…I didn’t even notice, but yeah I really don’t like people…Like my parents would say out there, like you are not the same person…a lot of the things I don’t see until I’m like in um counseling”. Like with MMA training, with coaching “my mind is always elsewhere with something else”.

L.K. – Participant 4

L.K. was the only female that participated. She does Crossfit and powerlifting. During the observations she was also doing training for the Strongman Competition that was upcoming. She was at a locally owned gym that both observations took place at. Her husband and son were there rooting her on and even reminding her of her weights, “(Husband) chooses the weights for me so I can just focus on lifting”. For the heavy weightlifting, she loves “…the rush of the endorphins, when you are tired, it is hard to be mad.” She has tried BJJ before but has felt powerlifting was more fulfilling and has done it for two years. When doing CrossFit and powerlifting, it has helped with her PTSD as it provides “routine, part of a community, encouragement, part of something”.

When conducting the first observation with L.K., she was in a training open floor with other individuals who were doing Crossfit. There were other military veterans present at the

training and active duty. There was a coach present and on a computer screen at the front of the room was the metabolic conditioning of rounds/rep as many rounds/reps as possible (MetCon AMRAP). The routine was light weight lifts, box jumps/step down, and kettle bell swings. L.K. started with a light weight – 172 lbs. - on the lifting bar for clean pulls. There was encouraging amongst the other members in the group. She knew everyone in the group and there was a comfortability amongst them that was shown by their laughing and support of each other, "We don't let each other quit. It is great with how people support each other". After the routine, she worked on her deadlights at 222 lbs. After lifting, "I am too tired to be mad, I feel accomplished and there is a good feeling with pushing your own boundaries. I am training for the Strongman competition, so it is always to push harder". Her good friend was there and pushed L.K. to pull her weights, she interjected humor to motivate L.K. The two did deadlifts together and L.K. would increase her weights. The workout gives her "a rush or sense of release from bottled up emotions".

At the second observation, she was focusing on her deadlifts training for upcoming Strongman competition. "I feel kind of excited and looking forward to working out and seeing what unfolds." husband, son, and best friend were the only ones that were present. There were no PTSD symptoms experienced between the observations, "Nothing. I blocked it out. It had no effect on me". She was not feeling well due to the preworkout she took, and her lower back was aching, but she did not allow herself to stop. She felt her PTSD for this observation, "Yes not able to choose my weight…there is always confusion or doubt". The powerlifting with deadlifts, her weights were around 245 lbs. Her best friend, husband, and son were encouraging her and pushing her to pull maximum weight. When asked on what the exercise gives her, "Always seeking some type of rush or kick of endorphins. Afterwards it is always calming". When the

workout was concluded, she described her PTSD with it as “Nothing, because the feelings don’t exist during or after the workout”.

N.R. – Participant 5

N.R. was observed in E.G.’s training location for MMA. He has done MMA for 14 years while in the military and BJJ or about 17 years starting in college and wrestling in college and the military for 25 years. He still trains in all of them. For N.R., the sports are all encompassing and “They make me focus on specifically what I’m doing and nothing else”. He does not feel a struggle with PTSD symptoms when engaging in these sports, “…they’re not existing during the time in which I’m participating in the activity…they’re lessened in general uh by the activity…maybe because I’m pooped out and I don’t have time to think about anything else”.

The first observation, N.R. arrived after the practice of techniques had been completed and the fighters were going into sparring. There was a combination of trained fighters and LEOs. Prior to entering the training, “I was mentally tired and physically not prepared…I wasn’t warm physically…beforehand. And then I was mentally tired, like I was mentally taxed”. He had dealt with PTSD prior to the training, “…last night I, I had the same frickin shitty ass dreams I normally have actually. So, yeah, it’s one of the reasons that I was mentally taxed…”. When he got into the sparring, he was striking hard but was also listening to the guidance of other fighters. He was focused on his sparring partner and did not look away. While waiting on his next turn outside the ring, N.R. stated he was pushing himself on purpose, “The physical, the physical taxation actually helps relieve some of their mental focus”.. There was laughter used by him and the other fighter. Even though he was mentally taxed and physically not warmed up, he expressed he did not feel PTSD symptoms while in the activity. “Yeah, you don’t feel it all. There’s no, there’s no possibility of like flashbacks, negative occurrences”.

At the second observation, N.R. was there with the practicing of techniques and sparring. He engaged with others and worked on his techniques, even asking to make sure he was doing them correctly. There was a co-coaching with E.G., F.M., and G.Z. with the techniques. The sparring helps him during the week, and he experienced stress between the observations, "You know, just putting more pressing issues of, of anxiety I guess more than anything", "the idea of anything um, implying to, um, outside the physiological response of immediate endorphin rush". When he was out of ring, there was a comfortability with being in the small area with several individuals moving and yelling. He was proving guidance to fighters in their sparring rounds and encouraging them as a team. There was a calm as he sparred and a focus on his partner with where to strike. "It's absorbed in me. It is the best – yeah, like I said it's the number one thing that I would go for when you talk about dealing with those us stressors…" He likes to be able to use the videos made of the sparring to have more stress relief, "…you get to king of relive the experience by watching the videos later on during the week".

G.Z. – Participant 6

G.Z. was observed in his location where he coaches/teaches groups of fighters, veteran and new, with MMA. He has also done training with BJJ and done paintball to assist with his PTSD "…it's uh relaxing and uh relatively safe. So, I get to, I get to get my, my violent urges out and get to run around and do things. And like that helps out". His students were a mix of military veterans, active duty, and civilians ranged from child to adults. He has been coaching since 2009 and teaching since 2014. There is an appreciation for coaching for G.Z. as "It helps. It uh it forces me to like uh be understanding or, or pursue an issue from a different angle". This understanding makes him bring his focus away from self and place it into the needs of his students. He not only coaches, but he also takes part in the training where he takes part in

striking and grappling "…if I see you doing it wrong around me, I try to help you out. And then it just like…I enjoy punching and hitting people more so than choking people, like hitting body parts and all that".

At the first observation, there were 15 students. The floor was open with no ring like on the other observations. Prior to the activity, he was feeling agitation he felt could be PTSD after a conversation with his father about PTSD, feeling that what he feels and how he deals with it is different, "I thought everybody was this way, but then I see since like the whole little uh thing…I'm kind of jacked up a little bit". He entered the training mentally prepared, as he explained, "I guess, 'expected'…I'm like 'all right, cool, this is a big class. This uh, it's a diverse class. We got a lot of different skill sets and levels of, uh, proficiency here. This is gonna be fun". Everyone started with stretching as G.Z. led it from the center of a circle. As the group worked on the techniques he demonstrated and explained, he would go around and provide corrections where needed. He explained how it helped with his PTSD, "…it's harder to make me mad and upset. It, like, and since I have a physical outlet, I don't, I don't feel like, I don't feel the need to break stuff and punch people as often". There was a focus as he walked around the floor and observed the students as he appeared to be calm in constant moving individuals. Doing this has "helped me be a little bit more sensitive to other people and I was like 'All right, it's, it's cool…I know today is my…punch day…so I'm not going to worry about what it is that's bothering me right now'". His veteran students helped with the other students as they did technique stations. Having those students there to help as it is a team and "you're not, you're not alone". The activity of coaching and engaging in MMA, with those he knows provides a place of trust, "we could both have all these little other conversations that I probably wouldn't have had if we weren't punching and kicking each other in the face for a couple years".

The second observation was a smaller class. He did not feel PTSD symptoms between the session and was more curious about the observation and if more was needed from his role. He, again, was prepared mentally to engage them and having more contact training with the students. This time they were placed in groups and each group made a circle where there was light sparring/grappling in the center. It was seen that techniques G.Z. did in the training with E.G. and other fighters was being conducted in his class. He was more engaged physically with the training. There was an individual that attended, who was not normally there, and was going hard at the light sparring and caused an injury to a student. G.Z. handled it calmly, "I talked to the individual after and let him know how things go at the training and that was not acceptable". At the end they all sat around in a circle, and each were given positive feedbacks and recommendations for what to work on, "This is where we grow. This is how we get better. This is how we all improve, and we learn from each other…I'm happy at the end…I see that lightbulb moment click for a lot of people".

Personal Responses

Each participant had different responses to the interview questions. Some of their responses were incorporated into their observations above. They each provided unique insight into how their sport or exercise makes them feel and how it helps them with their D-PTSD. It was shared across the majority of participants that without their sport or exercise to help with their D-PTSD, they do not think they would be in a good place. Participants expressed entering one or both of the sport or exercise, that were observed, different levels of stress. However, all identified they felt better and relaxed coming out of the sport or exercise. There was a mix on the use of counseling and using the physical activities. There were commonalities in their symptoms with D-PTSD.

Table 3

Support System

Participants	Who is your support system?
E.G.	My partner at work. The level of knowledge and the amount of time spent together gives an accountability chain that is needed. Other vets loose this and problems ensue.
C.D.	My wife. She will make sure I get up and go to the gym. If I do not, she tells me how I am being a jerk when my depression and agitation act up.
F.M.	I'm on my own…I'm kind of a loner in that aspect. I mean, I really don't care about anybody supporting all that like it's going to happen. And I know that from them, that's kind of harsh to say…it's just me.
L.K.	My husband and my son and my best friend. It keeps me focused and driven which keeps me going back to the gym to work out.
N.R.	Probably the people who participate in it with me…It's those who are to the left and right of me when I'm participating in it…I don't think it would work without it.
G.Z.	Probably my older students and my training partners…I'll ask E.G. some tips and pointers…I don't really have to teach…just do the drills and move and improve upon myself. And then N.R., my old training partner, I ask him all my wrestling stuff…And I like my other students that have, that have been there with me for the longest.

Table 4

Without Sport or Exercise

Participants	Where would you be without the sport or exercise?
E.G.	I don't think I would be in any good place.
C.D.	I would be in a bad place. If I had to cut out weightlifting, I don't know what would happen.
F.M.	I've never thought about it…I would have found another route. I would say…it would have to be something, something intense.
L.K.	I would have a destroyed marriage and unable to control my anger.
N.R.	I'm gonna go with fucked.

G.Z.	Without it I'd probably be in a bad spot. I'd be kinda like confrontational, combative more likely.

Table 5

Advice to Veterans

Participants	Advice to other veterans about the sport or exercise
E.G.	MMA - I would describe the camaraderie to them and explain that warriors go through hard time and not avoid them, and this training is a good place to really deal with those issues.
C.D.	Weightlifting - To give it a chance and do not judge it before trying it. To keep an open mind and see how it works for them. That there can be a great release of their pain and leave it all at the gym. To try anything that keeps them strong and going each day. MMA – Do into it with a goal in mind, ya know, if something hurts, ya know, physical pains, all that stuff that you got going on…don't do what's going on to increase your injury, but do what you can and just give it a shot…I just tell people, ya know, try it…what's the worst that's gonna happen? You're gonna get punched in the face…and guess what you have a headache the rest of the day maybe and you're fine. Ya know, you might get punched in the face and you might go "Oh man, this was a whole lot of fun…everyone here, they have your back, yeah they punched me but they weren't trying to hurt my but they all motivated me through it".
F.M.	MMA – I would tell them…it's a good place to release your anger, but really have to check the ego before you start…It's a great way to, to get rid of some of that energy. I mean…that anger…anxiety, it really, you face your fears. I mean it's you face your fear…after one thing about fighting, you're really not afraid of anything else. I mean…somebody tried to punch you in the face. You grow accustomed to violence…it gives you, it's a confidence booster, you know you can fight, protect yourself, defend yourself…it enhances the person you are…So I mean if you're a douche it will make you a bigger douche…so if you're a good person…and happy if you want to see others win and do that type of stuff. It's all-around confidence boost over everything else.
L.K.	I would tell them my story. The ups and downs. I would suggest for them to come and join me at the gym and give it a try to see for themselves. I would make sure to say that this activity is not for everyone or has the same results. It is always best to try something, instead of asking yourself "what if".

N.R.	That kind of training is necessary and the best.
G.Z.	MMA - I would describe it as a release and a way to unwind and reset. And basically come at you after this, all your extra pent up aggression and energy is let out, you'll be able to focus better on other things.

Table 6

Meaningful Statements

Participants	Meaningful statements
E.G.	The use of combatives allows me to push myself to face my PTSD, manage it, and make my skills grow as I get to the next day.
C.D.	Weightlifting allows me to exist in the present time and reminds me I have to fight for myself through all my pains.
F.M.	It is the strength of my knowledge, and it keeps me focused on me in a positive way, as it holds a lid on the effects of my nightmares.
L.K.	Through the challenges and pain of my physical growth, I can mentally release my negatives and find a calm to live happily with my family.
N.R.	Being able to physically engage others or challenge my own techniques helps me to release the anger from nightmares and manage my PTSD.
G.Z.	Coaching others helps me not focus on my anger and PTSD as I focus on my trainees needs, and trusting others to coach me gives me release and a calm.

Cognitive Images

The cognitive images are a representation of what the veterans feel PTSD looks like inside for them. There was no analyzing of the images nor asking their meaning, as to not agitate the veteran or make them feel they were being counseled. Participants C.D. and N.R. opted to not provide an image. The images were to be provided willingly, not out of pressure or coercion, thus agitating the veteran and decreasing the reliability of meaning in the image. There were no deep discussions into what they drew and why. The responses are limited to the questions asked and provided as such. The images are used for the powerfulness image can present versus words alone. The images are left to the interpretation of the reader and how they might see what PTSD

looks like to the participants.

E.G. Cognitive Image Response

The following are the responses from E.G. about the image he drew that best represents how he feels about his D-PTSD.

1. The image (Figure 3) you drew prior to the interview and activity was asked to represent how
2. you feel when you experience the PTSD symptoms. How did you feel drawing it?

   "I felt annoyed and unqualified. I am not an artist. I remember this drawing from my resiliency class I took and felt it is accurate for my PTSD."

3. Do you feel it impacted how you arrived for your routine activity? If yes, how did you feel different?

   "I think it heightened my dread of being monitored. I used humor and showed my drawing to my training partner."

4. Having completed your activity routine, how would do you feel about the image now?

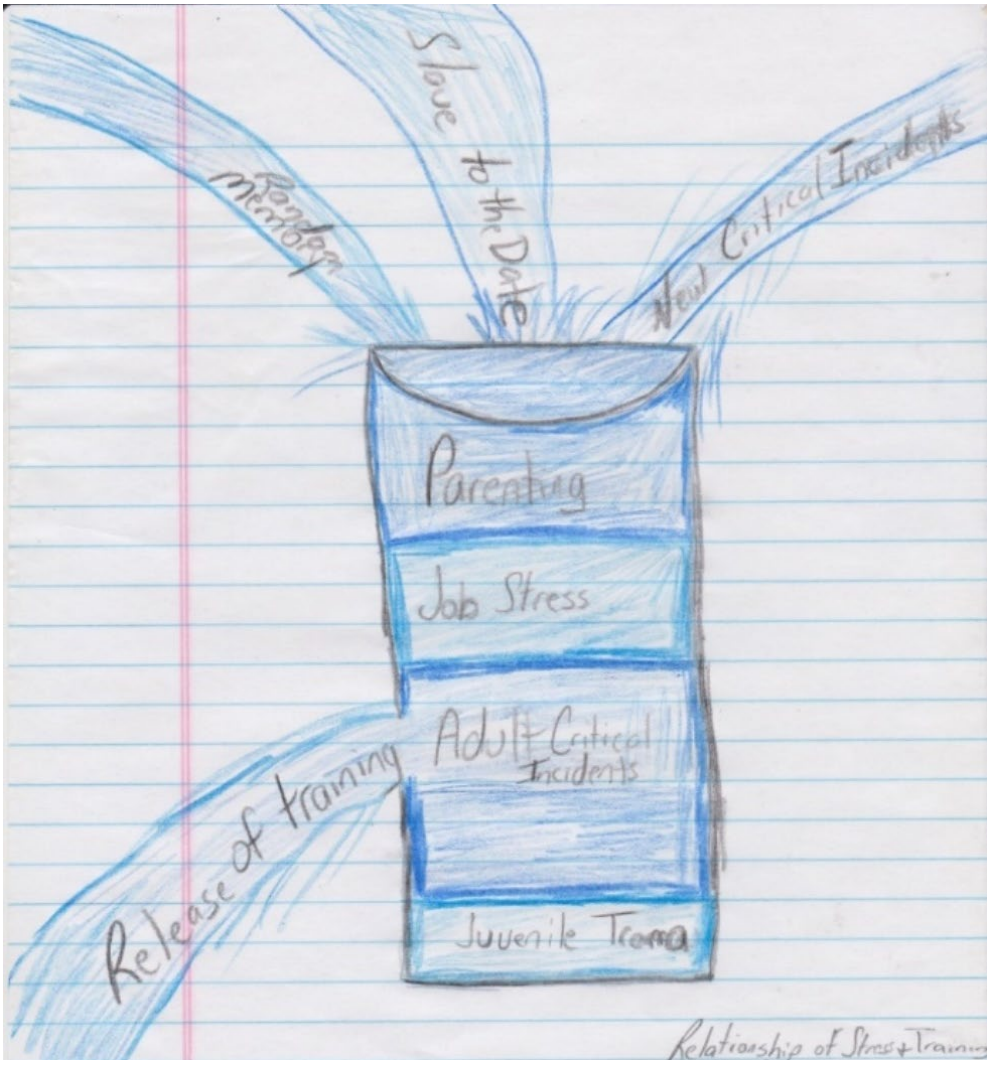
   "I feel a little better and agree it represents my PTSD."

5. What are ways that the activity allows you process the things you expressed in the image?

   "My MMA is the release valve to continue life on. In my drawing, it keeps the glass from overflowing."

Figure 3

E.G.'s cognitive image of D-PTSD



F.M. Cognitive Image Response

The following are the responses from F.M. about the image he drew that best represents how he feels about his D-PTSD.

1. The image (Figure 4) you drew prior to the interview and activity was asked to represent how you feel when you experience the PTSD symptoms. How did you feel drawing it?

   "So yeah, it's like battle going on, you know what I mean? And this constant battle of, you

know what I mean, that, that, that storm and that calm."

2. Do you feel it impacted how you arrived for your routine activity? If yes, how did you feel different?

   "No."

3. Having completed your activity routine, how would do you feel about the image now?

   "The same, best represents that inner battle of peace and storms."

4. What are ways that the activity allows you process the things you expressed in the image?

   "Gives me a release and I don't have to think about any storms."

Figure 4

F.M.'s cognitive image of D-PTSD

L.K. Cognitive Image Response. The following are the responses from L.K. about the image she drew that best represents how she feels about her D-PTSD.

1. The image (Figure 5) you drew prior to the interview and activity was asked to represent how you feel when you experience the PTSD symptoms. How did you feel drawing it?

   "It was calming and disturbing. Seeing the difference actions or scenarios when I am having a mania moment. Hurt."

2. Do you feel it impacted how you arrived for your routine activity? If yes, how did you feel different?

   "No."

3. Having completed your activity routine, how would do you feel about the image now?

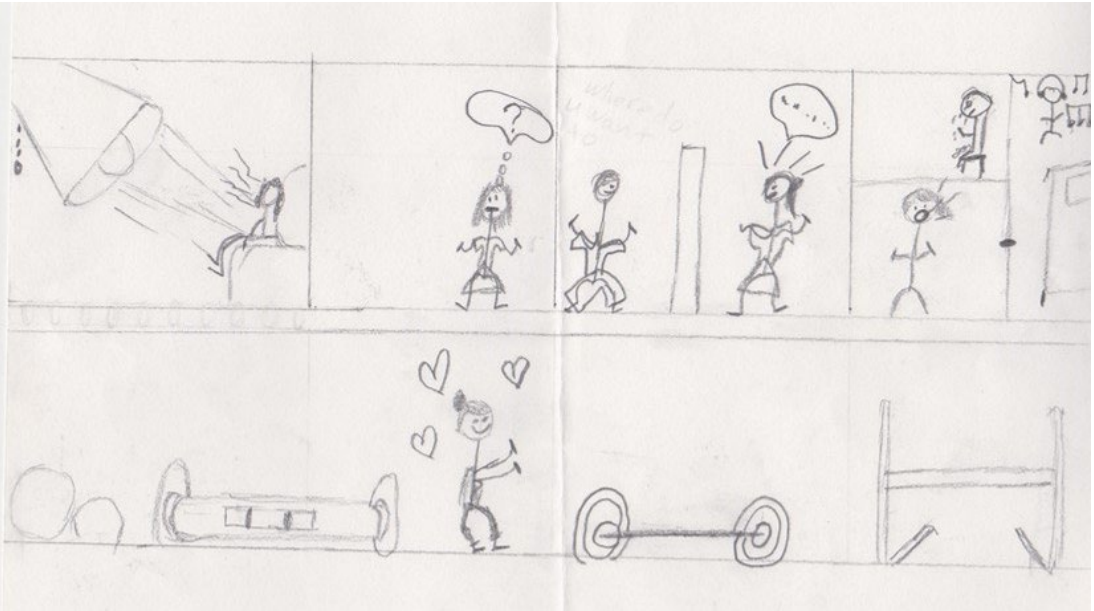
   "The image just signifies how much lifting means to me and how much better is makes my life each day."

4. What are ways that the activity allows you process the things you expressed in the image?

   "It helps to get it out and not bottled up just waiting to explode."

Figure 5

L.K.'s cognitive image of D-PTSD



G.Z. Cognitive Image Response

The following are the responses from G.Z. about the image he drew that best represents how he feels about his D-PTSD.

1. The image (Figure 6) you drew prior to the interview and activity was asked to represent how you feel when you experience the PTSD symptoms. How did you feel drawing it?

   "It wasn't as easy to think of how my PTSD represents itself, but when I notice it, I feel kind of antsy or expectant."

2. Do you feel it impacted how you arrived for your routine activity? If yes, how did you feel different?

   "I think I am so used to my routine that when I have moments of PTSD the flow or regularly scheduled activity helps balance me out."

3. Having completed your activity routine, how do you feel about the image now?

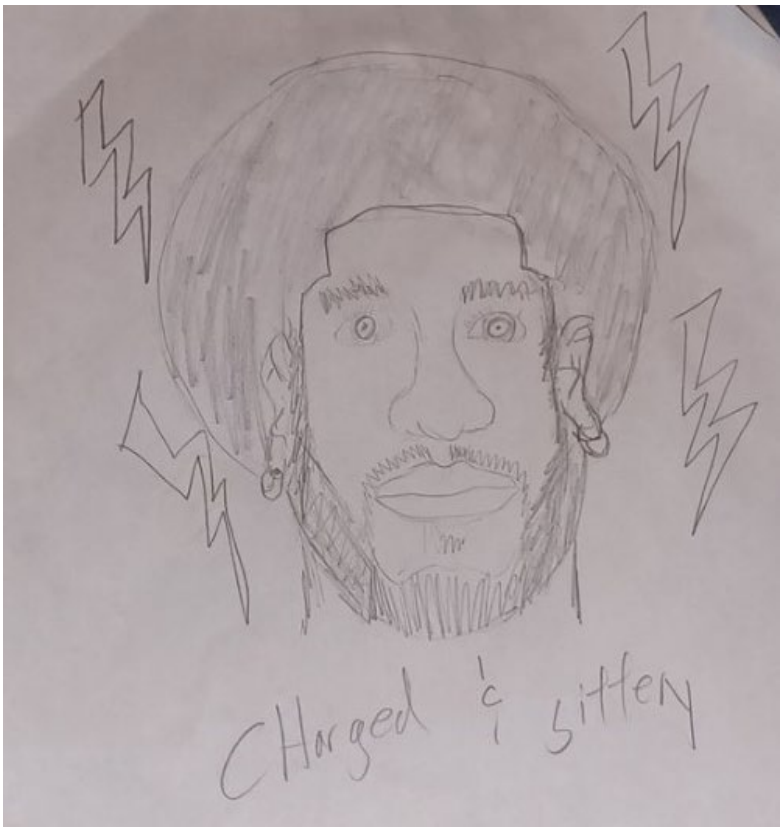
   "Right now, I feel normal. and a sense of calm comes over you after good healthy physical exertion."

4. What are ways that the activity allows you process the things you expressed in the image?

   "It really just helped me work out all the jitters and anxiety that I have when I feel about some anger stress and depression coming on."

Figure 6

G.Z.'s cognitive image of D-PTSD



Research Questions Answered

The research questions were answered using the interviews, observations, and cognitive images. In addition, the themes developed helped to support and answer these questions.

Research Question 1

How do veterans describe the impact sports and exercise have on their D- PTSD? A majority shared the result of the sports and exercise providing them the ability to manage their D-PTSD symptoms. They have obtained a way to release their anger and gain control over their symptoms as it creates a feeling of being more in control over themselves. There was a shared

response that without their sports or exercise that the veterans would not be in a good place mentally, demonstrating the sports or activity keep them going in life and reduced veteran suicide. There is a development of camaraderie when they train in groups, especially when there are other veterans present that quietly understand the inner struggles and accept them into the team.

Research Question 2

When there are PTSD symptoms being experienced prior to engaging in a sport or exercise and how does the veteran feel after the sport or exercise is completed? The main symptom that was experienced prior to some of the sports or exercises was anxiety, which was associated to the impending activity or the results of nightmares they experienced. Once they started to engage in the activity, their anxiety calmed, and they obtained focus on techniques and what was being coached. There were some that were experiencing a form of anger, either by agitation or change in environment. After the activity, there was a shared feeling a sense of calm after they concluded their routines. There is the knowing that endorphins will be released in the exercise that is looked forward to.

Research Question 3

What do veterans describe as the primary catalyst that draws them to engage in combative sports? There were several things that drew the veterans into engaging in combative sports. There is a camaraderie that comes with the sport as there must be trust in training partners and shared understandings of what they each feel. Then, there was the engagement of the military mindset of persevering and learning through training. These help the veterans confront their triggers and what they were feeling prior to the observation. In addition, combative sports help the veterans release their pressures, force them to focus on the techniques, leaves no room

for them to think about anything else, and there is a rush with engaging in the sport. When looking at the cognitive images, it can be seen there are pressures and inner storms that some fight and the use of MMA helps provide some release for them.

Research Question 4

What is the holistic connectedness with sports and exercise for veterans with D- PTSD and how are those defined? It was shared that the sports and exercise decreased the negative thoughts the veterans were experiencing by lessening their anger and anxiety and making them have a more focused mind. There was also a shared feeling in the sports and exercise being a way of self-improvement as many of them watched videos of themselves training and they saw what they saw as mistakes or weaknesses to improve their skills on. The sports and exercise had the veterans pushing themselves through their exhaustion, physical pain, and mental struggles which, in turn, gave them the reward of calm and feeling in control afterwards. The veterans felt there was importance in trusting their partners because they see them as someone there to help and support them, not harm them. Coaching was seen as a way to help people as a way of giving back to others and with trusting those they trained with by letting them teach class.

Summary

The participants provided in-depth personal narratives and cognitive imagery to best represent what they experienced with D-PTSD and the process of using sports and exercise to manage their symptoms. The in-person observations allowed for observance of certain behaviors which the participants were asked about and to provide more insight to the mindset of the participants. Their narratives were used to answer the four research questions Four research questions were used to guide the direction and focus of the study: *How do veterans describe the impact sports and exercise have on their D- PTSD? When there are PTSD symptoms being*

experienced prior to engaging in a sport or exercise, how does the veteran feel after the sport or exercise is completed? What do veterans describe as the primary catalyst that draws them to engage in combative sports? What is the holistic connectedness with sports and exercise for veterans with D- PTSD and how are those defined? Furthermore, the narratives were used to obtain data to place into the Dedoose program to better identify the three key themes that emerges: effects of the activity, military resemblance, and confronting triggers. Each of the themes connected together to strengthen the support of using sports and exercise for D-PTSD. The meanings for what the sport or exercise means to participant was created from the observations and interviews and collaborated with the participants to ensure it captures how they feel. The cognitive images provided a look inside the minds of the participants as words cannot always express what is felt inside.

Chapter Five: Conclusion

Overview

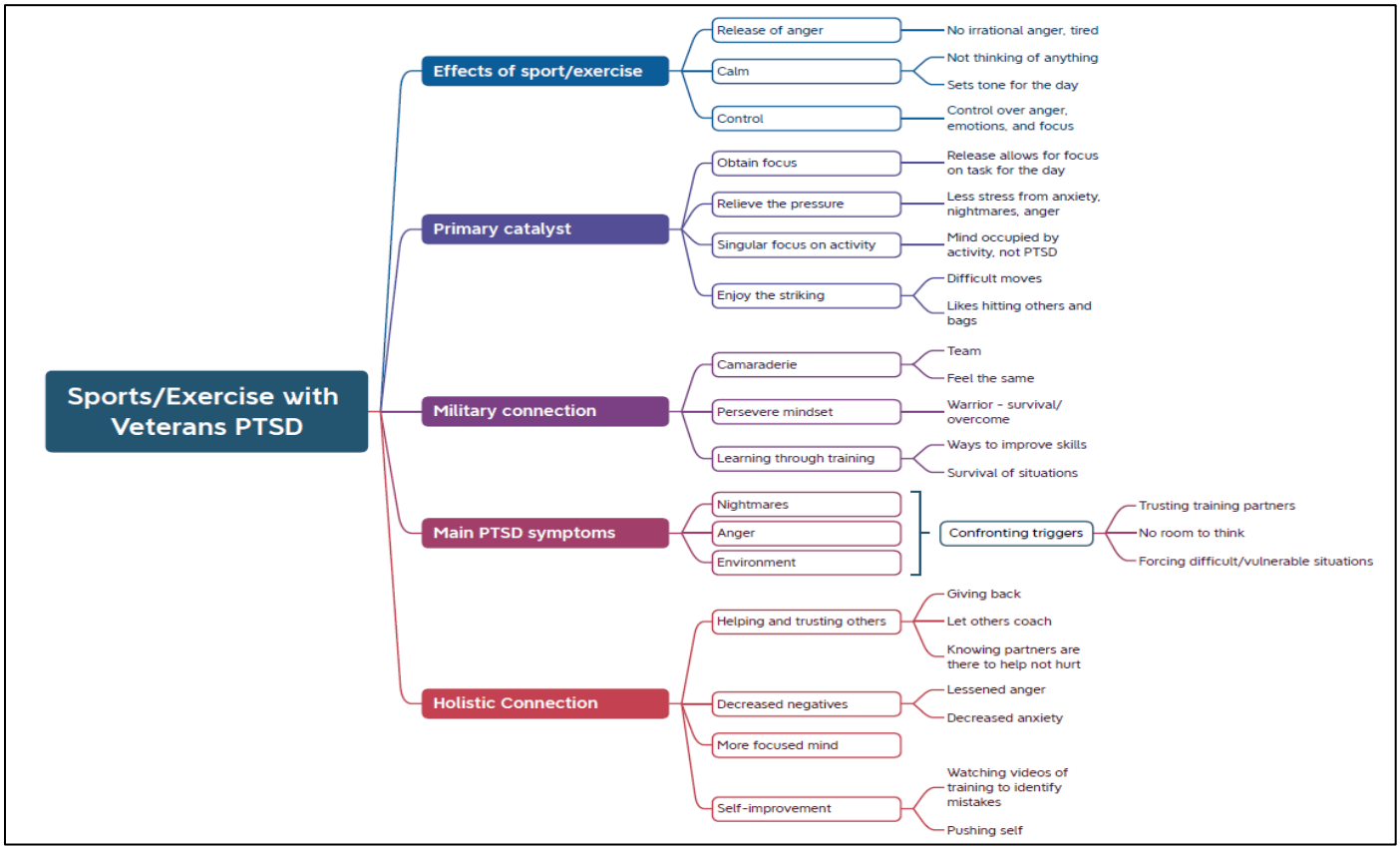
This chapter presents the discussion of the findings of the observations and interviews and further discussion of the implications of this research study which focused on how the use of sports and exercise help veterans manage their deployment-related PTSD. The results in chapter 4 are supported through this chapter with how the study answers the research questions, what therapists can learn regarding needs of some veterans, the struggles experienced in the process of the study, and more. The chapter has been organized to best present the conclusion of results: summary of findings, discussion, implications, recommendations to therapists and veterans affairs, delimitations and limitations, and recommendations for future research.

Summary of Findings

The study aimed to answer four research questions to provide more of an understanding of the effectiveness of established sports and exercise routines veterans with D-PTSD with managing their symptoms. The open-ended interview questions, observations, and cognitive imagery were used to provide answers for each research question and are given more support with the use of the Dedoose and Xmind programs. Below are the research questions and the answers. The Dedoose Code Application (Figure 1) and Xmind Mind Mapping (Figure 7) help to illustrate connections of themes and how the research questions were answered via a analysis of content generated by the interviews. The themes developed helped to answer the research questions.

Figure 7

Xmind Mind Map



There were three main themes that were revealed through the interviews: effects of the activity, military resemblance, and confronting triggers. In the first theme, the veterans described the effects of the activity on their D-PTSD as them being able to obtain “release of anger”, “calm”, and “control”. The release of the anger gives the veterans no irrational anger to contend with and they are too tired to be angry. They were too tired in their sports or exercise to think about their PTSD and the calmness they had after the training started the tone of the day for them. If the training is interrupted, it can set a negative tone for them. The sports and exercise assist them in obtaining control of their mind and what they were feeling from PTSD, such as nightmares and releasing the anger.

In the second theme, military resemblance, some of the veterans noted connections with their prior military experienced because of relations to their sport or exercise with “camaraderie”, “perseverance mindset”, and “learning through training”. Having camaraderie gave the veterans a way to be with others who understood them and felt the same way found the same value in the shared sport or exercise. They obtained the feeling of being part of a team they could trust, felt they were supported within, and accepted them.

The third theme was “confronting triggers” which is what helps the veterans get through their activity even if they face a struggle. There is a warrior concept within the military to overcome difficult times and get through the fight. When there was physical pain, a disruption of environment, or PTSD symptoms triggers from nightmares or agitation the veterans pushed through the sport or exercise and did not give up. With learning through training connects to the discipline seen in the military training. The veterans took coaching from each other and worked to not make the same mistakes. There were some veterans that watched videos made during their training and used those to identify errors they made in training in order to correct them.

Discussion

This study aimed to examine if veterans that took part in routine sports and/or exercises experienced effects on their D-PTSD symptoms, such as if the results are short-term or long-term. The in-person observations allowed for more in-depth portraits of the individuals and how they appeared in their normal routines. The use of open-ended interviews allowed the participants to elaborate more on their responses and allotted for further investigative questions if necessary. The cognitive imagery gives a visual perspective of what the participants feel inside that words cannot fully capture to have others on the outside understand. The study presented results that added to the gap in literature related to BJJ, MMA, and powerlifting. In addition, this

study presented a female veteran that participates in powerlifting and powerlifting competitions; further research into finding other studies with this subject did not yield any results.

The Benefits to the Sport or Exercise

This study presented the importance of sports and exercises, including combative sports, for management of D-PTSD symptoms and that as long as the participant engaged in the activity then they were able to manage their symptoms. Participants in this study were able to obtain calm, control, and release with their sport or exercise. The use of the exercise and sport provided participants with release from things they were feeling, such as depression, nightmares, anger, and anxiety. Some felt they lost time while they engaged their activity and felt a peace in their mind, and others awaited the coming release of endorphins from their activity. Lisa Bodenburg expressed that in her boxing she understood and looked forward to the physiological effects where the endorphins were released and the effects it had on her (Grotto Network, 2019). Studies that focused on aerobic exercises and PTSD identified reductions in PTSD and anxiety symptoms, along with the exercises assisting in reducing avoidance behaviors (LeBouthillier et al., 2016). There was a connection with the striking in the training that helped some participants focus on their control which resulted in release and calm. The sports and exercises were described as outlets for PTSD symptoms – disappointment, aggression, stress, anger, and hypervigilance. The use of BJJ, adapted techniques used in the MMA training participants took part in, the participants practice problem solving skills to face adverse situations and results in a decrease in symptoms post-workout (Willing et al., 2019).

Many of the participants identified they would “not be in a good place” if they did not have their particular sport or exercise to take part in. This is supported with research identifying that low social support of peers increases the risk of veteran suicide (Kelly et al., 2020). With the

coaching aspect of the observations, the coaching brought a reward to helping others, allowed there to be focus on the needs of the trainees, calmly sit in a group and reflect on the training session, and provided positive energy. This works to help provide a peer support system for veterans.

This study presented new information towards MMA and coaching to assist with D-PTSD symptoms. MMA is seen as a brutal sport due to the level of injuries received in it, yet the participants that engaged in the sport felt more positives despite the pains they experienced in them. There was a welcoming to the sparring and the pain through strikes to the body, and the participants willingly used it to face their own inner aggressions. They relieved their aggression through this sport, found control over their own minds, and they found a peace after they finished the session. The coaching was not found in research as a way to manage D-PTSD symptoms and this was revealed in this study. There was a cross between coaching and engaging in the activity to be coached by others. This was a new way to see how helping others allowed participants to focus on the needs of others and remove their own negatives associated to D-PTSD. Reward was a strong positive connection to coaching others and the unit cohesion with helping others and trusting others to help them coach.

Obtaining a Military Connectedness as a Veteran

Participants were able to obtain camaraderie while engaging in their sport or exercise where other veterans were included. The veterans who trained with other veterans were able to quietly understand each other, there was a silent understanding of what they each experience inside. All of the participants found support in others believing in them and encouraging them to keep going, this was demonstrated through the correction of moves, encouraging of weights, and even being verbally acknowledged. This aspect can be aligned with Zang et al. (2017) by

identifying these training groups at unit cohesions and social support as there was admitted decrease in the participants D-PTSD symptoms after they concluded their activity. Those that trained in the groups were able to focus on their techniques and accepted critiques from others that were trying to help them and there was trust within the dynamics knowing others were not there to hurt them. Contributions from Armenta et al. (2018), O'Loughlin et al. (2021), and Reisman (2016) align with these results as they discussed the masculinity aspect of veterans where they feel safer to talk to each other rather than therapists and how being in a group dynamic can create a decrease in symptoms.

Military training pushes for soldiers to push through things they are battling, this lends to the persevere mindset. The participants had different experiences at war with the same outcome – struggling with the experiences of combat in deployment zones. Most of the participants had multiple deployments and received injuries. This study revealed that the participants did not focus on their injuries but worked to push through them. The masculinity in the military brings a stigma of talking about what the military member/veteran is experiencing – mentally and physically. The participants pushed through their symptoms, thoughts, and even physical pains. Some of the participants felt some anxiety before engaging in the sport but they pushed through it and was able to obtain the release they needed and felt inclusion in a group of others that understood them. This is consistent with the finding from Evans et al. (2020) that when disabled combat veterans took part in close contact sports, such as wheelchair rugby, the veterans were able to be competitive, feel part of something hyper-masculine, and were able to have shared commonality based on experiences mentally and physically. They were not defined by their disability, but what they experienced at combat and what they are experiencing in the new world they live in.

The participants learned through the training as they did when they were in the military. The participants coached each other, were encouraged by others in the activity, relied on themselves when they trained alone to get through difficult moments, and learned from their own mistakes. In a majority of the activities, there was a particular individual recording the training sessions and the participants used those videos to identify their weaknesses, mistakes, and growing points. Evans et al. (2020) and Zang et al. (2017) contend that when veterans have personal resources and a feeling of unit cohesion, they have an increased resiliency to overcome difficulties and have the mentality to work through them. The participants did not dismiss others being there for them and were supported when they struggled, which resulted in them getting through difficult moments as their "unit" did not let them fail.

The study presented a familiarity to military mindset and training with weightlifting and combatives. Weightlifting works towards physical fitness to be ready for war and can be seen as ensuring survival with physical strength in deployment. Combatives training is seen in the Army and Marines as survival skills. This can be seen as carried over into the present training observed in the study as they are surviving the PTSD use what they are familiar with to combat it. This study presented new information in the camaraderie with female veterans and powerlifting/ CrossFit. There was a mix of civilians and veterans in the exercise and there was a team cohesion that gave the participant safety and security in knowing others supported her. The female aspect to powerlifting presented another way to look at finding that military resemblance with the persevere mindset. When she was ready to stop, she pushed even harder to pull the weights up.

Managing the PTSD

The engagement of a physical activity allowed the participants to think of other things and not focus on their PTSD symptoms. The long-term engagement of their sport or exercise can

be seen as a form of exposure therapy as the participants have to face their symptoms and manage them. Some participants felt that the training left no room for them to focus on how they felt, they just focused on the weights or the techniques they had to do and there was no focus on what they were feeling or any emotions there were before. There was no ability to sink back into the negatives of the past with PTSD and allowed them to focus and exist in the present moment. This was illustrated in Caddick et al. (2015b) study on surfing where the veterans felt removed from the past and were able to focus on the present as they connected to other veterans as they enjoyed laughter and team building.

In the activities the participants engaged in, there was a sense of mindfulness of their bodies and awareness of symptoms they were experiencing prior to the training. King et al. (2016) can be used to support this aspect with the MBET approach as the activities were not focused on trauma and participants willingly faced their D-PTSD in an in-person active group setting. Some of the participants said they intentionally placed themselves in difficult positions in MMA to force their triggers and obtain control to not give in to them. They allowed vulnerability to engaging in their activities knowing they were already experiencing anger, anxiety, lack of focus, or agitation, thus forcing themselves to make a choice of avoiding the situation or facing it entirely. Hegberg et al. (2019) and Bosch et al. (2017) explained there was a connection with exercises causing bodily sensations that veterans would want to avoid but it would be beneficial to engage in an exercise that works as exposure and promotes desensitization to the triggers and symptoms. This makes a connection to the participants trusting each other in training to help them face these triggers.

In the sports and exercises, there was assistance and coaching from others, this was seen in both the powerlifting and MMA training. There was a trust in knowing others were there to

support the participants and encourage them when they struggled. Drebing et al. (2018) and Thompson-Hollands et al. (2019) felt that when veterans have support systems that they had a higher success rate for consistency in therapy to manage their PTSD and having others in the veteran community integrated together in the process was important to increase the veterans' success. The coaching aspect helped development of trust in others to help coach others and to trust others to coach them where they can relax and have more self-focus in that moment. Some participants entered the training with active anxiety about getting hit in the training, but as they engaged the training, the anxiety calmed. This can be seen as a form of exposure therapy for those participants as they continued further there was increased fear extinction and a decrease in their anxiety (Maren & Holms, 2016).

Most of the participants provided cognitive imagery that captured what D-PTSD looked like to them. The images were presented in the study with no interpretation from the participants, but left to the audience to interpret. Decker et al. (2018) identified that the art done by veterans is their inner feeling being projected out with their own perceptions of combat. There were a few participants that felt they could express how they felt better in words versus in a drawing, and some participants apologized for how their drawings looked. They were reassured the images were how things felt to them and there was no right or wrong way to draw them. This can be corroborated by how veterans deal with the stigma of mental health and how they try to balance it in their lives (Shields et al., 2017).

This study presents new information on the use of MMA to force difficult situations where the participants know it causes them to face their triggers. This is different than other research that create short-term and controlled studies asking participants to push themselves to face triggers or activities created for the veterans in hopes of getting them to face their triggers.

This study shows these participants know exactly how the sport will make them feel, how they will feel prior to it, and enter it knowing they are not fully prepared, all with the intention to gain control of themselves week after week for several years. It is also seen that the participants cannot stop their activity as they have said without it they would not be in a good spot mentally, showing there is not resolution from the past with talk therapy but a choice to manage through the activity.

Implications

Practical Implications

This study presented different ways of approaching D-PTSD with an array of sport and exercises. The use of MMA was seen in the study as highly beneficial to the veterans who took part in it, and it presented the masculinity needed within the sport to help veterans obtain control over their symptoms. MMA was seen as their form of therapy where they did not have to talk and think about their feelings of the past. This may be seen by some as avoidance, but this study demonstrates they are actually not avoiding their PTSD as they force themselves to face it without talking. The use of MMA has not been promoted as a positive due to threat of injuries, but it has been demonstrated in the observations and interviews that there are veterans who need this engagement to be in a masculine activity, release aggression in a controlled manner, have a team that understands them, and force themselves to face and control their symptoms. None of these participants expressed feeling extra aggression outside of the training because they take part in MMA.

The use of powerlifting and CrossFit for female veterans in the study presented female engagement in an activity that can be seen as masculine with the powerlifting. There is a sense of release with the exercise and wanting to push self-limits through pain and hard work. The

CrossFit approach to managing PTSD was a fast-paced activity that pushed physical limits and solicited more teamwork to encourage each other. It is beneficial to see that these sports and exercises are effective with long-term use with decreasing and managing D-PTSD symptoms. There is a push to have veterans talk about what they experienced or talk through their feelings, but the use of physical activities alone is overlooked as beneficial.

It would be worthy for clinics and clinicians to incorporate the use of sports and exercise into their practices as another approach to D-PTSD to help veterans. First step would to be find out what the veteran is missing in their life, what they are willing to do for themselves physically and mentally, and identify if it would help them talk more when focused on reflecting on the activity they engaged in. One way that would be effective is to connect with veteran programs or gyms that provide sports or exercise services and provide these are recommendations to veterans as the benefits to the physical activities are discussed.

Theoretical Implications

The experience of deployment to a combat zone can be seen as a phenomenon, the experience creates a new knowledge – an objective reality (Moustakas, 1994). Transcendental phenomenology examines the phenomena of the how one sees the world, internally and externally, based on their experiences. These experiences, when examining them through noema and noesis, have their own meanings that are interpreted by one's senses, emotions, and thoughts (Moustakas, 1994). With this study, each of the participants had different levels of experiences in their deployments and how they viewed life, themselves, and the world. As they utilized their specific sport or exercise, they were able to take a negative mind developed in their deployments and find another level in their mind of being able to exist in the present world. This lends to transcending the dark place they were in and entering a mind that incorporated trust, calm,

release, camaraderie, and managing of D-PTSD symptoms. The participants did not allow themselves to be part of the 22-veterans a day statistic of suicide. Participants expressed how they would be in a bad place mentally if they did not have their sport or exercise to put their mind into.

This study further adds to the transcendental theory of how when one's introspective view of life can be contaminated by experience, but they have the ability to change those preconceptions by addressing the consciousness (Mouatakas, 1994). When examining the results through epoche, it is seen that the use of the exercise and sport is a distraction for the mind to quarantine the negative thoughts associated with D-PTSD yet allows them to obtain a clarity in thought through the activity. Participants reported releasing their anger and feeling calm afterwards, some said it helped them to not think of their nightmares and obtain a focus in the day. They were able to see the day through new eyes and not stay in a negative hole.

The interpretive phenomenological and social constructivism approaches allowed the participants to express what they experienced in their sport or exercise. Interpretive examines the details of how one experiences life their way (Smith & Osborn, 2015). Their reality was seen with social construct as it was presented in their words through the open-ended questions and how the sport or exercise helped them perceive themselves and life. This study did not get details of what participants experienced in their deployment or in their personal life, but it obtained details on their personal experiences with D-PTSD symptoms, the impacts from sport or exercise, and a detailed image of how D-PTSD looks like to them. They had freedom of expression and the cognitive images support interpreting what one is feeling internally. The significant meaning of the sport or exercise was obtained as a way to make sense of why it is important to them and why it is crucial to what they have experienced (Emery & Anderman,

2020). Each meaning was specific to the participants, this is the same for their advice to other veterans in reference to using the sport or exercise. What they felt was significant to the activity was reflected in those individual statements.

Empirical Implications

The in-person observation and interviews allowed for a more personalized aspect to a study on PTSD symptoms. Data were collected via observations and interviews that presented positive results. Veterans taking part in their own activities can allow for more real-world application of sports and exercises with their long-term use and resulting long-term effects.

The study answered the four research questions, and results indicate that combative sports release anger effectively and that the use of the sport does not encourage aggression but creates a control of symptoms. In addition, the development of trust in others even when there is striking and kicking occurring and trusting the control and discipline of each other further demonstrates the use of combative sports it not a negative on mental health for the veterans. Attached to this sport is a holistic aspect with participants using words such as calm, peace, and release. Observations of the participants provide more in-depth witnessing of this as they push through the pain of deployment injuries, frustrations with change in their environment, and remnants of nightmares, allowing for observing adjustments and obtaining self-control in their environment.

The study implicated the effectiveness of powerlifting and CrossFit for female veterans. There was not an associated need for self-defense for safety, but the pain of the lifting and growth in the process. The search for the endorphin release and the pride of increasing physical strength, thus demonstrating a masculine identified exercise can help female veterans that have D-PTSD. The female veteran in the study experienced combat, which is different than most

studies where female veterans suffered from military sexual assault on deployment or at home station. It can be implied that the approach to combat PTSD may need to be more masculine as war is masculine, and sexual assault victims may need more feminine exercises or self-defense as the sexual assault attacks their femininity.

Christian Worldview on Implications

Veterans that experienced deployment to combat zones and witnessed the acts of war can struggle with spiritual and/or moral injury. They will question faith and they will question their own morals, the inner good versus evil. There will be the inner struggle of guilt, anxiety, anger, loss of trust in self, questioning of higher beings, questioning own religious beliefs, spiritual or existential conflict as their questioning life meaning, or self-alienation (Battles et al., 2019; West & Cronshaw, 2022). In this study, there was not a mention of moral or spiritual injury, but there is mention of nightmares which can be seen as the inner battle with moral injury as the trauma is replayed and how it makes the participants feel. *"Blessed be the LORD my strength which teacheth my hands to war and my fingers to fight"* (King James Bible, 1769/2008, Psalm 144:1). The participants seem to have a peace with their sport or exercise. The activities demonstrate that veterans can obtain a unity with others, having something to believe in that gives them a safe place trusting others, there is removed isolation, there is a willingness to face the inner evil to feel the good. *"Surely he took up our pain and bore our suffering, yet we considered him punished by God, stricken by him, and afflicted. But he was pierced for our transgressions, he was crushed for our iniquities; the punishment that brought us peace was on him, and by his wounds we are healed"* (NIV, 1978/1983, Isaiah 53:4-5). As veterans sacrificed their own hearts and souls to protect others, they need to have ways that are healthy and effective to them as processes to maintain and possibly heal.

Delimitations and Limitations

It was decided to use veterans that developed PTSD related to deployment to combat zones; PTSD associated with military sexual assault, domestic military experience, or deployment to non-combat zones were removed from the scope of the study. This made the scope of participants smaller, but there was a wanted focus on managing the symptoms associated to experiencing (personally or witnessing) violence associated to combat zones that involves weapons, death, and injury. This delimitation made is more difficult to obtain veterans for the study in the local area and reduced the amount of female participation in the study

The choice to observe the participants greatly reduced the participation and the snowball effect increased the time frame of obtaining participants. When trying to enter the subculture of veterans with D- PTSD that use sports or exercise to manage their symptoms, it needs to be seen it takes trust to enter their world. Due to knowing combat veterans with PTSD, I was able to enter the subculture to observe. It took the words of those veterans who participated to encourage others they know to participate. Their trust in my study, methods, and knowing other veterans trusted me provided me with the avenue to be close and personal to them. I tried to recruit participants through veteran groups on Facebook; there was no response to the posts. It added to the importance of having trust of a veteran to enter that world. Even though I am a veteran, I am seen as a therapist because of my job and that brings a feeling of uncomfortableness and distrust. Even with knowing veterans, having a networking of veterans, and requesting for participation online, over four months I was only able to obtain six participants, not the desired 12-15 for saturation. It would have taken longer to obtain the desired number.

There were many questions ensuring that the names and locations would be confidential, as many feared the stigma of talking about it, their jobs being impacted, and being seen as weak

by others. Other researchers may find it hard and limiting to observe veterans in such a way by using flyers or online posts. It will take knowing veterans with deployment-related PTSD and having their trust to successfully enter this world of the military subculture.

There were some limitations to the study that were experienced. It was difficult to get feedback from all participants as they removed themselves after the observation was completed. It took time to get some responses, which would take a week to a month using the email form of communication. The resources for mental health support were not well received as they either went to the VA for their therapy or the felt it countered the focus of the study. They prefer to stand by their own form of therapy than have one suggested to them, and this felt a risk at losing the developed trust with the participants. Another limitation was not having an alternative to the cognitive image for any participant that chose not to draw a picture. This option could have provided more insight in place of the cognitive image, thus not having this option caused a loss of information. There was a technical error in two of the recordings for a participant. They were asked if they would respond to the interviews again, but through email so they did not have to go through the in-person interview again. This caused a loss of more in-depth initial explanation and instead resulted in more basic responses, therefore reducing more information that could have added to the themes and meanings.

Recommendations for Future Research

For future research, finding more female veterans that have deployment-related PTSD would bring more valuable data as they are a small group that are harder to identify. It would be finding female veterans that have PTSD from combative regions where their experienced combat, explosives, bombings, and other combatant attacks.

Other recommendations for future research would be to look at combative sports more in

depth and how they help veterans with PTSD and if it can be applied to civilians with PTSD. There are many studies identifying the negatives about the use of combative sports, this study identifies that even though there are physical dangers with combative sports, participants are aware and find use of this type of sport.

There is a risk of making a veteran uncomfortable in their own environment, but the approach of them allowing the researcher in makes it becomes less intrusive. The snowball effect should be used with veterans that trust each other and having one go first to help others understand the process and feel more comfortable with it would be effective with future approaches for studies with veterans and physical activities. When a veteran can feel they can trust a process, they are more apt to take part in with truer results.

It is recommended for therapists that work with veterans to be open to alternative approaches to talk therapy. Even though some veterans in this study took part in therapy, they felt the greatest lasting effect coming from their physical activity. It should be seen that there are different physical activity approaches that many veterans take, not just aerobics or yoga; there are some that use outdoor sports such as golf or fishing and others use more physically engaging such as weightlifting, BJJ, or boxing.

In addition, the assumption that taking part in an aggressive sport will cater to and feed the "need" to be violent is not necessarily true and should be reexamined for the benefits. It should be considered as a holistic approach with what intense physical activity can provide and either develop a program including an intense activity or include it in routine therapy discussions as a supportive resource.

Summary

This study presented data that supports the use of sports and exercise for veterans to

manage their D-PTSD symptoms. There was an inclusion of combative sports – MMA was the key one the participants utilized. The data did not reveal increased aggression from the use of intensive sports or exercise, but instead there was a decrease in S-PTSD symptoms. Data revealed there was more felt in the way of calm, release, camaraderie, control, and daily functioning from the use of the sports or exercise. Having a female veteran take part in the study by using a masculine defined sport/exercise of powerlifting was significant to obtain. The results of the study work to fill the gap in literature on research of veterans in already established routines versus studies using controlled developed exercise programs for data. The study presented its own difficulties with the limited structure of the study focused on PTSD symptoms related to deployment to combat zones, in-person observations, and observing in an area the veterans feel safe in. However, the participants provided insight as to the holistic connection there is and there is a way to feel part of something where others accept and do not judge each other. The implications of the study of the holisticness of sports and exercise for the veterans to function day-to-day present a real-world attribute that can have long-term effects as long as the sport or exercise is engaged in.

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Appendix A

Interview Questions/Guide

The initial screening questions would be asked via email prior to first interview when participants (see Appendix D).

Starting context for interview. This is a standard format that can be adjusted to assist with ice-breaking and the researcher can add more to assist in building rapport if it is needed.

Thank you _____, for taking the time to meet with me as I know you have a routine. And thank you for your service to our country and the sacrifices you made for it. Your participation in this research is valuable and priceless with what the use of sports and exercise can present in the way with D-PTSD.

I would like to ask you questions before your physical routine to identify why you chose this process to help with D-PTSD symptoms and how you tend to feel prior to starting, then ask you questions after your routine to see how you feel mentally. In addition, would you be willing to participate in follow-up interviews to determine how long the effect from the activity lasts for you? The follow-up would come at the end of your downtime from the activity to see how you are with feeling the effects of the workout on any D-PTSD-related symptoms. Due to the level of confidentiality, do you give permission for me to record this interview via audio? Do you give permission for me to observe you during your routine and ask questions afterwards about it? As provided in the consent form, your information will be protected and not released to anyone.

Thank you for granting permission to observe and audio record you. There are some questions that are related to the activity you are about to engage in that I would like to ask (*The researcher may add in more conversation text to keep the conversation comfortable; remain aware of time frame as to not impede on participant's schedule or routine*)**:**

8. What is your activity of choice for coping with PTSD?
9. What made you choose this activity as a way to treat your PTSD?
10. How long have you been taking part in this form of activity?
11. Have you tried other types? If so, how were those with your PTSD symptoms?
12. How would you describe your overall PTSD symptoms since you have engaged in this activity?
13. What are some key things that you could describe about the activity that have helped you?
14. Who is your support system that supports your use of sports or exercise? Describe their level of support? How do you feel it impacts the effectiveness of the activities on the PTSD?

Before the activity (Same questions asked at for both observations):

4. How would you describe how you feel mentally prior to engaging in this activity today?
5. Prior to the activity today, have you experienced anything in relation to PTSD? Would you be able to explain some of it?
6. What would you describe as the strongest reason for engaging in this particular activity today?

After the activity:

1. **After second observation**: How did you feel during the time between the two observations times?
2. Now that the activity has concluded today, how would you describe how you are feeling in relation to the PTSD?
3. Was there any time during the activity today that you felt something related to PTSD?

4. How would you describe what you felt while you were engaged in the activity?
5. As exercise create certain physiological responses, is there an appeal to these responses?
6. **After second observation:** How meaningful is the activity to you overall?
7. **After second observation:** Without the activity, where would you be with your PTSD?
8. **After second observation:** If a veteran, who just got out of the military, was struggling with D-PTSD, how would you describe the use of this activity or any sport or exercise to help them?

To be stated on last day of observation:

We have come to the end of the interview and observation. I am thankful for this time you have provided and want to state again that this is valuable as it lends to helping find more alternatives to therapy to help veterans with D-PTSD. You have provided much insight on what the significance of sports or exercise for individuals with PTSD. I would like to be able to contact you again for the follow-up like stated before at the end of your downtime, in 48 hours. Would I be able to contact you via phone, text, or email for the follow-up? Also, I would like to contact you to review my interpretation of your meaning and understanding of the significance of sports and exercise for combat-related PTSD, and specifically the activity you chose. This would help provide the best representation of meaning, significance, and your voice for the matter.

Discussion of image drawn

1. The image you drew prior to the interview and activity was asked to represent how you feel when you experience the PTSD symptoms. How did you feel drawing it?
2. Do you feel it impacted how you arrived for your routine activity? If yes, how did you feel different?
3. Having completed your activity routine, how do you feel about the image now?

4. What are ways that the activity allows you process the things you expressed in the image?

Other Data Collection Procedures

1. Information will be obtained through interviews, in-person observations, field notes, and literature and media research.
2. The interviews and activities will be audio recorded with a signed consent form from each participant. Video recordings are not encouraged due to the confidentiality of non-participants at facility and privacy of the training facility.
3. If COVID-19 continues to be an active pandemic, limiting the number of patrons in a facility, or have continued training facility closures, then virtual interviews will be conducted. In addition, it will be requested that the veteran(s) allow(s) for a live audio session for real-time observation and to ensure researcher does not overlook relayed information. This would be noted in the research and the limitations of not having in-person observation.
4. Observations will be determined to be in-person or virtual depending on the outside setting and activity, such as water sport, golf, distance running, or bicycling.
5. With the interviews, the pre- and post-activity interviews will be kept to 30 minutes as to not impact the activity time for the participant and avoid taking much of their mental focus away from the activity. The interviews will be conducted on first and last day of weekly activity.
6. The training area of the center will be described as to help the audience visually see where the participant is and the atmosphere in which they are functioning in. This helps set it apart from the mental image of a therapy room.

Appendix B

Other Data Collection Procedures

1. Information will be obtained through interviews, in-person observations, field notes, and literature and media research.
2. The interviews and activities will be audio recorded with a signed consent form from each participant. Video recordings are not encouraged due to the confidentiality of non-participants at facility and privacy of the training facility.
3. If COVID-19 continues to be an active pandemic, limiting the number of patrons in a facility, or have continued training facility closures, then virtual interviews will be conducted. In addition, it will be requested that the veteran(s) allow(s) for a live audio session for real-time observation and to ensure researcher does not overlook relayed information. This would be noted in the research and the limitations of not having in-person observation.
4. With the interviews, the pre- and post-activity interviews will be kept to 30 minutes as to not impact the activity time for the participant and avoid taking much of their mental focus away from the activity. The interviews will be conducted on first and last day of weekly activity.
5. The training area of the center will be described as to help the audience visually see where the participant is and the atmosphere in which they are functioning in. This helps set it apart from the mental image of a therapy room.
6. The participants will be interviewed individually. This is to reduce the interview questions becoming overwhelming and limit complexity of observing them during their activities.

Appendix C

Consent

Title of the Project: Phenomenological Study for Use of Sports and Exercise with Veterans PTSD

Principal Investigator: Hope Torres, MS LPC, Doctoral Student, Liberty University

Invitation to be Part of a Research Study

You are invited to participate in a research study. To participate, you must be 23-65 years of age, a veteran that been deployed to combat zones, been diagnosed with deployment-related PTSD, and already participating in exercising or sports, including combative sports. Taking part in this research project is voluntary. Please take time to read this entire form and ask questions before deciding whether to take part in this research.

What is the study about and why is it being done?

The purpose of the study is to identify the significance and meaning in the appeal and use of sports and exercise to decrease the symptoms of deployment-related PTSD and increase the functionality in life for veterans. There will be an extra inclusion focus with veterans who utilize combative sports. The target group will be combat veterans in the Central Texas area, majority centralized in the Fort Hood area.

What will happen if you take part in this study?

If you agree to be in this study, I will ask you to do the following things:

1. Provide a hand drawn image prior to the initial interview, either at home or at your training facility, that represents how you feel when you are experiencing symptoms of PTSD (time estimates may vary).
2. Allow the researcher to observe you do your workout/exercise activity twice, at the beginning of the week and at the end of the week. Your activity will be observed at a distance, with no interaction, for the full length of time that is your routine time frame.
3. You will be asked to participate in an audio-recorded interview immediately prior to and immediately after engaging in your activity on the first day of my observation and last day of my observation of your weekly activity. The interviews will each take 30 minutes.
4. The pre- and post-interview will consist of questions pertaining to your experiences with PTSD, your exercise or sport for your PTSD and any additional questions needed for clarification. During the last post-activity interview, I will ask you about the image you have drawn.
5. After the second interview and observation, you will receive a follow-up call after 48 hours to discuss your experience and any psychological or emotional effects that are a result of the interviews and/or cognitive image. Military-affiliated therapist resources will be provided if desired.

How could you or others benefit from this study?

Participants should not expect to receive direct benefits from participating in this study. However, participants may benefit from the experience of having your voice heard, knowing you are helping other veterans, and bringing validation to your form of therapy. You will be part of a process that will work towards future physical activities used in therapy intended by the researcher post-graduation with the development of a type of group therapy for PTSD involving physical activities.

Benefits to society include the military active duty and veteran community learning there are alternative approaches to PTSD when they struggle with clinical therapy. This can also open the doors to other therapists to see beyond the walls and see how sports and exercises can be combined with therapy. As combative sports are seen as negative and causes of injury, therapists might benefit from seeing the correlation combative sports have with military combat training and the unity that is imbedded in the sport itself.

What risks might you experience from being in this study?

The risks in this study are minimal, which means they are equal the risks you would encounter in everyday life.

Liberty University will not provide medical treatment or financial compensation if you are injured or become ill as a result of participating in this research project. This does not waive any of your legal rights nor release any claim you might have based on negligence.

How will personal information be protected?

The records of this study will be kept private. Published reports will not include any information that will make it possible to identify a subject. Research records will be stored securely, and only the researcher will have access to the records. Data collected from you may be shared for use in future research studies or with other researchers. If data collected from you is shared, any information that could identify you, if applicable, will be removed before the data is shared.

- Participant responses will be kept confidential through the use of pseudonyms. Interviews will be conducted in a location of your choice where others will not easily overhear the conversation.
- Data will be stored on an external hard drive that is stored in a lock box and may be used in future presentations related to the study. After three years, all electronic records will be deleted.
- Interviews will be audio recorded and transcribed. Audio recordings will be stored on external hard drive for three years and then erased. Only the researcher will have access to these recordings.

Is study participation voluntary?

Participation in this study is voluntary. Your decision whether or not to participate will not affect your current or future relations with Liberty University. If you decide to participate, you are free to not answer any question or withdraw at any time without affecting those relationships.

What should you do if you decide to withdraw from the study?

If you choose to withdraw from the study, please contact the researcher at the email address included in the next paragraph. Should you choose to withdraw, data collected from you will be destroyed immediately and will not be included in this study.

Whom do you contact if you have questions or concerns about the study?

The researcher conducting this study is Hope Torres, MS, LPC. You may ask any questions you have now. If you have questions later, **you are encouraged** to contact her at [redacted]. You may also contact the researcher's faculty sponsor, Cynthia Doney, at [redacted].

Whom do you contact if you have questions about your rights as a research participant?

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher, **you are encouraged** to contact the Institutional Review Board, 1971 University Blvd., Green Hall Ste. 2845, Lynchburg, VA 24515 or email at irb@liberty.edu.

Disclaimer: The Institutional Review Board (IRB) is tasked with ensuring that human subjects research will be conducted in an ethical manner as defined and required by federal regulations. The topics covered and viewpoints expressed or alluded to by student and faculty researchers are those of the researchers and do not necessarily reflect the official policies or positions of Liberty University.

Your Consent

By signing this document, you are agreeing to be in this study. Make sure you understand what the study is about before you sign. You will be given a copy of this document for your records. The researcher will keep a copy with the study records. If you have any questions about the study after you sign this document, you can contact the study team using the information provided above.

I have read and understood the above information. I have asked questions and have received answers. I consent to participate in the study.

☐ The researcher has my permission to audio-record me as part of my participation in this study.

☐ The researcher has my permission to use my name directly in the study.

Printed Subject Name

_____

Signature & Date

Appendix D

Recruitment Email

[Date]

[Recipient]
[Title]
[Company]
[Address 1]
[Address 2]
[Address 3]

Dear [Recipient]:

As a graduate student in the School of Behavioral Science at Liberty University, I am conducting research as part of the requirements for a Doctoral of Education Community Care and Counseling-Traumatology degree. The purpose of my research is to identify the significance and meaning in the appeal and use of sports and exercise to decrease the symptoms of deployment-related PTSD and increase the functionality in life for veterans. There will be an extra inclusion focus with veterans who utilize combative sports. I am writing to invite eligible participants to join my study.

Participants must be 23-65 years old, have been deployed in the military to a combat zone, and have deployment-related posttraumatic stress disorder (D-PTSD), and already be active in a sport or form of exercise.

Participants will be asked to

1. Provide a hand drawn image prior to the initial interview, either at home or at your training facility, that represents how you feel when you are experiencing symptoms of PTSD (time estimates may vary).
2. Allow the researcher to observe you do your workout/exercise activity twice, at the beginning of the week and at the end of the week. Your activity will be observed at a distance, with no interaction, for the full length of time that is your routine time frame.
3. You will be asked to participate in an audio-recorded interview immediately prior to and immediately after engaging in your activity on the first day of my observation and last day of my observation of your weekly activity. The interviews will each take 30 minutes.
4. The pre- and post-interviews will consist of questions pertaining to your experiences with PTSD, your exercise or sport for your PTSD and any additional questions needed for clarification. During the last post-activity interview, I will ask you about the image you have drawn.
5. After the second interview and observation, you will receive a follow-up call after 48 hours to discuss your experience and any psychological or emotional effects that are a

result of the interviews and/or cognitive image. Military-affiliated therapist resources will be provided if desired.

Names and other identifying information will be requested as part of this study, but the information will remain confidential.

To participate, please reply to this email confirming that you meet the inclusion criteria. email. Please also provide the training facility name, location, and contact information so I may obtain their permission to observe/audio-record in their facility. Contact me at htorres5@liberty.edu to schedule interviews and observations at your training facilities.

A consent document is attached to this email. The consent document contains additional information about my research. If you choose to participate, you will need to sign the consent document and return it to me at the time of the initial interview. I will bring additional copies if they are needed.

Sincerely,

Hope Torres, MS, LPC
Liberty University Doctoral Student

Appendix E

Site Permission Request and Response

Permission Request

[Date]

[Recipient]
[Title]
[Company]
[Address 1]
[Address 2]
[Address 3]

Dear [Recipient]:

As a graduate student in the School of Behavioral Science at Liberty University, I am conducting research as part of the requirements for a Doctoral of Education Community Care and Counseling-Traumatology degree. The proposal it titled Phenomenological study for use of sports and exercise with veterans PTSD. The purpose of my research is to is to identify the significance and meaning in the appeal and use of sports and exercise to decrease the symptoms of deployment-related PTSD and increase the functionality in life for veterans. There will be an extra inclusion focus with veterans who utilize combative sports.

I am writing to request your permission to conduct my research in/at _____.

Participants will be asked to be observed at your training facility. Participants will be presented with informed consent information prior to participating. Taking part in this study is completely voluntary, and participants are welcome to discontinue participation at any time.

Thank you for considering my request. If you choose to grant permission, please respond by email to [redacted]. A permission letter document is attached for your convenience.

Sincerely,

Hope Torres, MS, LPC
Liberty Graduate Student

Permission Response

[Date]

[Recipient]
[Title]
[Company]
[Address 1]
[Address 2]
[Address 3]

Dear Hope Torres:

After careful review of your research proposal entitled Phenomenological study for use of sports and exercise with veterans PTSD, [I/we] have decided to grant you permission to conduct your study at _____.

Check the following boxes, as applicable:

☐ [I/We] grant permission for Hope Torres to observe participant(s) that are members of our facility as they in her research study.

☐ [[I/We] are requesting a copy of the results upon study completion and/or publication.

Sincerely,

[Official's Name]
[Official's Title]
[Official's Company/Organization]

Appendix F

Pseudonym for Participants

University: Liberty University	
Researcher Name and Phone Number: Hope Torres, MS LPC [redacted]	
Participant #:	Pseudonym:
Site:	
Real Name	Participant's email
This Pseudonym will be used in place of your real name in the research study to take the place of your real name. Your real name and contact number are only accessible to the researcher and Liberty University. By signing this form, you acknowledge the use of the pseudonym and you have selected to have it used instead of your real name in the research study.	
Signature of Participant	Date

Appendix G

Military-Related Therapy Resources List

The services provided by the resources provided are not paid for or free. They each have their own rates. The listed providers are veterans, military related, or military knowledgeable. They were hand-picked by the researcher due to their understanding of veterans' struggles.

Rachel Ramirez, MS, LPC, LCDC – US Army Veteran

There and Back Counseling

Harker Heights, TX

(254) 466-0636

thereandbackagain@counselinggmail.com

Elizabeth Rains, US Army Chaplain

Virtual Only

Ft Drum, NY, Licensed LMFT in TX

(937) 530-0312

elizabeth@jacksmountainselfcare.co