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Equine Assisted Programs for Military Service Members: A Program Evaluation Using Importance-Performance Analysis

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EQUINE ASSISTED PROGRAMS FOR MILITARY SERVICE MEMBERS: A
PROGRAM EVALUATION USING IMPORTANCE-PERFORMANCE ANALYSIS

A Thesis
Presented to
the Graduate School of
Clemson University

In Partial Fulfillment
of the Requirements for the Degree
Master of Science
Parks, Recreation, and Tourism Management

by
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Accepted by:
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ABSTRACT

Developing research, anecdotal evidence and a growing focus on non-pharmacological interventions for veterans with post-traumatic stress support the use of equine-therapy as a therapeutic outlet; however, programmatic factors that contribute to a veteran's desire to attend such programs are under-investigated. Furthermore, evaluative processes in equine therapy for this particular population are scarce and vary greatly from program to program. The use of the Importance-Performance Analysis (IPA) tool when applied to social services yields direct, applicable feedback of program success and relevancy. In this study, interviews with the selected population informed the evaluation tool used to assess the importance, and subsequent performance, of various program factors in a national military-specific equine therapy program. Results of this study provided insight into key factors being sought after in similar equine therapy programs to inform the development and maintenance of programs serving the veteran population. The application of the IPA, a consumer feedback tool typically reserved for market research, to the health and human services sector provided a new pathway for quality assurance and program analysis for the equine therapy field.

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Chapter 1

INTRODUCTION

During the main conflicts of the Global War on Terror (GWOT) for Operations Iraqi and Enduring Freedom (OIF and OEF), nearly two-million US troops were deployed (Institute of Medicine, 2010). The Defense Casualty Analysis System reports, as of March 2017, that roughly 60,000 service members have war-related casualties (Defense Casualty Analysis System, 2017). A majority of these casualties are non-fatal, being categorized as wounded in action. Coupled with developments in healthcare and technology available in the war theatre, our society's decreased time spent in combat have led to an overall decline in war related deaths since the 1950s (Fitzpatrick & Pasquina, 2010; Roser, 2016). As more veterans return home alive, a concerning number sustain various injuries, in addition to witnessing traumatic situations, that result in trauma to both physical and mental health and wellness.

The signature injuries of the GWOT are traumatic brain injuries (TBI) and post-traumatic stress disorder (PTSD). Known as the triad, poly-trauma in this population typically includes TBIs, reports of generalized somatic pain, and varying severity of PTSD (Lew et al., 2009). The prevalence of these and other associated diagnoses are a mounting community health concern our society must address as veterans attempt to reintegrate into society. Possible consequences related to the range of diagnoses include difficulty with expressing emotions, distinct personality changes and an increased risk for suicidal ideations and ultimately attempts, just to name a few. We must take great care to

rehabilitate and reintegrate our service men and women as carefully and constructively as possible.

With the growth of Recreational Therapy (RT) related interventions providing viable coping strategies for veterans with poly-trauma (Townsend, Hawkins & Bennett, 2015), further inquiry is needed into how this health profession can serve to rehabilitate and reintegrate this population. As a result, many veteran service organizations have formed in recent years to help aid the transition into civilian life (e.g., www.americaswarriorpartnership.org/four-star-alliance). One popular intervention for veterans has been the use of equine-assisted experiences to help promote positive adjustment. While online news outlets and personal blogs have highlighted individual veterans' positive experiences with equine assisted therapies (EAT), systematic reviews of these programs from the collective veterans' perspective do not exist.

Statement of Problem

While various programs market the benefits of equine-assisted programs, little research has documented the outcomes of veteran's participation in these interventions. Furthermore, even fewer discuss the elements of these programs that are important to the participants (i.e., the veterans), and evaluates how well the program performed on those elements. Very little systematic work has determined the program components that influence specific outcomes (i.e., PTSD, reintegration, aspects of resiliency). Programs may be developed based on clinical-expertise, specific practice models and with or without the use of evidence-based literature or a programmatic structure. Veterans may or may not be involved in the development of veteran-focused treatment programs, despite

the recent growth spurt of these types of programs, and published evaluations of these programs are sparse. More information is needed to determine what programmatic aspects veterans value with regards to their health and well-being.

While typical therapies and pharmaceutical interventions can provide relief from the impacts of post-traumatic stress, alternatives are needed for those who, for various reasons, do not regularly access supervised medical care, or do not respond well to typical treatment offerings. Due to the nature of military culture and our society's stigmas on mental illness, seeking treatment is often seen as taboo. Some veterans find themselves unable to receive timely care when they initiate treatment due to scheduling and wait time challenges (VA, 2014). More information is needed to determine the efficacy of alternative and complementary treatments for this population. Thus, the purpose of this study is to perform a systematic program evaluation of a veteran specific equine therapy program wherein the importance and performance of various program factors is determined.

Specific Aims

Specific Aim 1: To perform an evaluation of a military-specific equine therapy program using the Importance-Performance Analysis (IPA) method.

Definition of Terms

The following terms are defined to clarify their use in the study:

1. *AAT:* Animal Assisted Therapy
2. *EAT:* Equine Assisted Therapy
3. *EAP:* Equine Assisted Program(s) or Equine Assisted Psychotherapy

4. *EFL*: Equine Facilitated Learning
5. *EAGALA*: Equine Assisted Growth and Learning Association
6. *GWOT*: Global War on Terrorism
7. *IPA*: The acronym for the Importance-Performance Analysis, a market research tool that evaluates consumer driven factors and provides a subsequent ranking on level of importance and performance of these factors across a variety of contexts.
8. *PATH Intl.*: Professional Association of Therapeutic Horsemanship International
9. *Pharmacotherapy*: medical treatment by means of prescription medication
10. *PTSD*: Post-traumatic stress disorder
11. *TBI*: Traumatic Brain Injury
12. *VA*: Veterans Affairs, sometimes VHA (Veterans Health Administration)

Chapter 2

LITERATURE REVIEW

Given the improvements in battlefield medicine, armor, and other combat technologies, service members are surviving their combat injuries more than during any previous war in our nation's history (Fitzpatrick & Pasquina, 2010; Roser, 2016). This has resulted in veterans living with severe physical impairments such as amputations, burns, various orthopedic conditions, visual and hearing impairments, and spinal cord injuries, just to name a few (Townsend, Hawkins, & Bennett, 2015). Physical injuries to the body are relatively easy to see, but what is left unseen are the psychological injuries that generally accompany those physical injuries. These include post-traumatic stress disorder (PTSD), traumatic brain injury (TBI), depression, and anxiety, among others. Even though the physical injuries are numerous, their prevalence rates pale in comparison to what has been considered the signature injuries of the Global War on Terror (GWOT) (Townsend, Hawkins & Bennett, 2015). The following section will discuss the common psychological injuries experienced by combat-veterans returning from the GWOT and is then followed by a discussion about common and alternative treatment options. PTSD often co-occurs with traumatic brain injuries, depression and anxiety; however, veterans are no more susceptible to develop the latter two ailments than their civilian counterparts (Gould, Rideaux, Spira, & Beaudreau, 2014). As a result, this literature review will focus primarily on the signature injuries and their associated effects.

Post-traumatic Stress Disorder

PTSD is a complicated psychological diagnosis that stems from significant exposure to a traumatic event (in this case, combat experience) that may manifest in a variety of ways for different individuals. In addition to the traumatic stressor, there are four symptom clusters associated with PTSD: 1) intrusion or re-experiencing, 2) avoidance, 3) negative changes in mood and cognition, and 4) alterations in arousal or reactivity (American Psychological Association, 2013). Intrusion/re-experiencing includes various distressing memories related to the traumatic event that appear in the form of nightmares or flashbacks. Avoidance describes the act of distancing oneself from conversations, thoughts, physical locations activities or situations that may have the slightest potential to trigger distressing thoughts. Alterations in mood include disturbed thought processes, negative self-image, personal blame, states of continuous (often immobilizing) fear, doubt, worry or shame, and the inability to experience positive emotion. Hyperarousal describes the feeling of being on edge, irritable, and hypervigilant, which can result in problems with concentration, sleep, self-destructive behavior, and extreme lability in mood that can often times lead to seemingly unprovoked verbal or physical aggression (American Psychiatric Association, 2013). Based on the most recent RAND Corporation findings, estimates of 13.8% of OEF/OIF veterans have developed PTSD, compared with 10.1% for the Gulf War, and between 26% and 30% for Vietnam veterans (Tanielien & Jaycox, 2008; Kang, Natelson, Mahan, Lee, & Murphy, 2003; Kulka et al., 1990). While rates of PTSD vary across specific conflicts, veteran

sample sizes have increased and knowledge of this complex disease is more sophisticated than in decades' past.

Poor mental health for veterans negatively impacts adjustment as veterans reintegrate themselves with the civilian world. Left untreated, symptoms of PTSD have pervasive effects in the lives of veterans and can contribute to unemployment, domestic violence and other legal issues, homelessness, poverty, and even suicide (Cornish et al., 2014; Elbogen et al., 2012; Hawryluk, Ridley-Kerr & Henry, 2005; Kaplan, McFarland, Huguet & Valenstein, 2012; Moore & Penk, 2011; Oquendo et al., 2005; Tanielian & Jaycox, 2008; Teten et al., 2010). PTSD is often co-occurring with other combat-related psychological disorders, such as panic disorder, anxiety, major depressive disorder (MDD), generalized anxiety disorder, personality disorder, and substance abuse, in addition to difficulties with sleep and neurocognitive disorders (Huppert et al., 2005; Papastavrou, Farmakas, Karayiannis & Kotrotsiou, 2011; Veterans Affairs, 2017d). Typical treatments for PTSD include cognitive behavioral approaches including cognitive and exposure therapies, eye movement desensitization and reprocessing (EMDR), medication, as well as group and family therapy (VA, 2017a), which will be discussed in more detail later.

Traumatic Brain Injuries

A traumatic brain injury (TBI) is a complex injury to the brain system resulting from a sudden blow, bump, blast or jolt to the head and/or neck region (CDC, 2017a). The severity of a TBI ranges from mild to severe, differentiating changes in mental status/consciousness in the immediate time following the event, and symptoms of TBI

may manifest immediately or develop over time. Given the wide-range of connections the brain has to the remainder of the body, damage to the brain can result in short- and long-term impairments in cognition, speech, emotion, and sensation (Summerall, 2017).

Changes in personality, motor function, and temperament are common in individuals who sustain TBIs (CDC,2017a). The CDC reports that in the civilian realm, falls account for 47% of TBIs, 15% result from being struck by an object and 19% are from motor vehicle accidents (CDC, 2017b).

Blasts injuries from improvised explosive devices have been common in the GWOT, with nearly half of all injured soldiers experiencing blasts that resulted in trauma to the brain (Taber, Warden & Hurley, 2006). Many veterans minimize or do not report the occurrences of injuries to prevent being dismissed from duty, and thus, make themselves more vulnerable to fatal outcomes should they sustain further trauma (Smith et al., 2016). In addition to harming the brain, common co-occurring diagnoses with TBIs included spinal cord injuries, depression and anxiety, amnesia, and PTSD (Summerall, 2017). Due to the high co-occurrence of TBI and PTSD, typical treatments for TBI mirror those of PTSD. Rehabilitation specific treatments include physical, occupational, and speech therapies, as well as recreational therapy, which help to address the impacts on cognitive and somatic functioning of the veteran (Veterans Affairs, 2015). As the Veterans Administration (VA) continues as one of the largest employers of recreational therapists, focus on complementary and alternative treatments is necessary. Additional treatment options for veterans seeking reprieve from their symptoms include typical

treatments (referred to as non-recreation based), and an emerging group of recreation-based offerings.

Non-Recreation Based Treatments Options for Veterans

The VA is responsible for providing healthcare services to the millions of veterans who require both intensive care and routine health maintenance. As the largest healthcare organization in the United States, the VA utilizes common treatment modalities to help reintegrate veterans returning from war with a myriad of injuries. Standard treatments include, but are not limited to, pharmacotherapy, psychotherapy, and cognitive behavioral therapy; EMDR is emerging as a relatively newer treatment option within the VA (VA, 2017a). Many veterans, however, do not seek continued treatment through standard channels (i.e. the VA) due to stigma and lack of desire for traditional group therapy (Bowersox, Saunders & Berger, 2012). This section discusses the common or standard treatments that many veterans undergo for combat-related injuries.

Pharmacotherapy. In pharmacotherapy, SSRIs are used to regulate the neurotransmitter most closely involved in PTSD (i.e. serotonin) in order to regulate mood, sleep, sexual drive, anxiety, and various other functions (Walter, 2012; Brady et al., 2000; Marshall, Beebe, Oldham, & Zaninelli, 2001). Negative side effects to these medications make reliance on pharmacotherapy difficult for many veterans and civilians alike. Difficulties with sexual activity, mood, and the general feeling of not being oneself after beginning a prescription regimen are highly influential in the cessation of pharmacotherapy (Fortney et al., 2011). For veterans who are not under the direct care of a medical agency, rates of medication noncompliance increasingly complicate the long-

term treatment of PTSD symptoms (Szafranski, Gros, Menefee, Norton, & Wanner, 2015). When pharmacotherapy is ceased, the ability to gain benefit from psychotherapy alone is stunted, as PTSD symptomology often prevents individuals from making their appointments (Bowersox, Saunders & Berger, 2012). While there are many documented negative side effects of pharmacotherapy, across 37 randomized-control trials, medication reduced PTSD symptoms on a clinician administered scale by an average 6 points relative to a placebo (Stein & Ipser, 2012).

Psychotherapeutic interventions. The focus for psychotherapy in treating PTSD and comorbid conditions looks to uncover deeper motivations for feeling or behavior and is typically what comes to mind when thinking of therapy. In these sessions, the veteran(s) have control over the therapy session agenda by discussing what is presently on their mind. The focus lies on current presence, including the relationship between client and therapist, while drawing in influence from past history. Psychotherapy for veterans is divided into exposure-based treatments and cognitive approaches.

Exposure-based treatments. Exposure based treatments involve an individual with PTSD re-experiencing elements of a traumatic event in a controlled environment. Prolonged exposure, a form of exposure therapy, involves reliving the event through either the imagination (vividly recalling details of the event) or in-vivo exposure to typically neutral environments or scenarios that have become triggering reminders of the trauma (Foa & Rothbaum, 1998). Examples include attending concerts, fairs, or sporting events where loud noises, open spaces, and crowded areas could be reminiscent of combat events. As is indicated in the name itself, prolonged exposure occurs over the

process of 8-to-15 weeks by gradually approaching trauma-related memories and thoughts, though some veterans experience significant reductions in PTSD symptoms and depression from shorter treatments (Eftekhari et al., 2013). Furthermore, for veterans unable or unwilling to access care at a facility, home-based therapies are developing in effectiveness for exposure-based treatments (Strachan, Gros, Ruggiero, Lejuez & Acierno, 2012). Homework is assigned to veterans that involves reintegrating back into activities that they have avoided prior to treatment and listening to audio recordings of therapy sessions between each treatment (Veterans Affairs, 2017b). Despite its success in reducing PTSD in veterans, the process of reliving trauma on a repeated basis is unimaginable for many individuals and decisions regarding treatment are based around personal preferences (Olatunji, Deacon & Abramowitz, 2009).

Cognitive approaches. Cognitive approaches involved analyzing and restricting maladaptive thought patterns and processes that result from traumatic experiences. One cognitive approach that is readily used within the VA health system is Cognitive Processing Therapy (CPT), involving cognitive restructuring and a written exposure component that is processed with the therapist (Hamblen, Schnurr, Rosenburg & Eftekhari, 2010). CPT is one form of a larger subset of therapies, known as Cognitive Behavioral Therapy, through which harmful thought patterns are recognized and alternative ways of thinking are provided (Veterans Affairs, 2017c). Held over the course of 12 sessions, veterans' improvements in social engagement and interpersonal functioning develop as a result of changing cognitive processes. The belief stems from changing the emotional response to certain stimuli, and in turn, promoting behavior

change (Beidel, Frueh, Uhde, Wong, & Mentrkoski, 2011). While combinations of therapy and prescription drugs are most effective in treating PTSD, CBT itself has outperformed Escitalopram, an SSRI, in reducing PTSD symptoms (Sullivan, 2011). Despite individual successes with cognitive therapies for veterans, several contraindications exist among many veterans with PTSD early in treatment. Re-exposure to traumatic events through discussion or thought processes can exacerbate or prevent effective treatment with individuals exhibiting signs of excessive avoidance, dissociation, anger, grief, extreme anxiety, catastrophic beliefs, substance abuse, suicidal ideation, and lack of motivation (Bryant & Harvey, 2000). Nevertheless, when used correctly and in consideration of potential contraindications, CPT/CBT approaches can be successful in reducing PTSD symptoms. Compared with Vietnam veterans of similar demographics (excluding age), OIF/OEF veterans participating in CPT reported lower scores on the Posttraumatic Checklist (Chard, Schumm, Owens & Cottingham, 2010).

Eye movement desensitization and reprocessing. Eye Movement Desensitization & Reprocessing (EMDR) is a form of cognitive behavioral and exposure therapies that utilizes rapid momentary lapses of traumatic images in conjunction with eye movements to aid in processing trauma (Shapiro, 2014). Patients who receiving EMDR treatment utilize exposure to trauma in their imagination while engaging in rapid eye movements (Hamblen, Schnurr, Rosenburg & Eftekhari, 2010), though disagreement exists as to whether the eye movement is necessary (Davidson & Parker, 2001; Devilly, 2002). Participants with PTSD ranging from children, to cancer patients, to combat veterans, to individuals diagnosed with multiple sclerosis and those experiencing chronic psychiatric

conditions all experienced remission or elimination of symptoms following EMDR treatments (Ahmad, Larsson, & Sundelin-Wahlsten, 2007; Capezzani et al., 2013; Carlson, Chemtob, Rusnak, Hedlund, & Muraoka, 1998; Carletto et al., 2016; de Bont et al., 2016). The VA/DoD clinical practice guidelines have begun utilizing EMDR as an emerging treatment due to its similarity to exposure and trauma-coping therapies (Veterans Affairs, 2010).

Recreation Based Treatments for Veterans

A growing number of veterans have access to nature-based interventions as an adjunct to or replacement of traditional therapies (specifically prolonged exposure and cognitive processing therapy) as a result of stigma, attrition, and access to care (Bryan & Bryan, 2016). There are many recreation-based treatment options for veterans including fly-fishing, adventure therapy, yoga, and wilderness therapy, just to name a few.

Fly-fishing. In his short story “Big Two-Hearted River”, Hemingway noted the rehabilitative and restorative aspects of nature for veterans wounded by war (Takach, 2015). Still utilized today as an intervention in many veteran’s affairs treatment groups, the calmness and serene atmosphere of fly-fishing paired with the pride in catching a fish has been found to provide benefits to those who participate. Through distraction, focus, relaxation, and overcoming challenges and fears, veterans identified fly fishing as a potential coping mechanism for their PTSD (Bennett, Van Puymbroeck, Piatt & Rydell, 2014). Narrative accounts of participation in a therapeutic fly-fishing program revealed themes of camaraderie, reflection, and coping with regret as outcomes of involvement (Mowatt & Bennet, 2011; Price, Lundberg, Zabriskie & Barney, 2015). Improvements in

attentiveness, mood, depression, anxiety and stress were found in a quantitative examination of the same fly-fishing program (Vella, Milligan & Bennett, 2013).

Organizations such as Project Healing Waters facilitate fly-fishing preparation courses and expeditions to the water side to participate alongside a supportive group. Other than the previously cited work, little research has been conducted in a systematic manner to determine fly-fishing's short and long-term impact on outcomes such as PTSD symptoms.

Adventure therapy. The terms adventure therapy, wilderness therapy, and challenge-based recreation are often used interchangeably to describe the concept of challenge-based recreation pursuits that may or may not occur within natural settings (Russell, 2001). The common challenge by choice models, whereby veterans participate in the fullest extent based on their comfort level, strengthen pathways of motivation, self-confidence, trust, accomplishment and optimism (Ewert, 2016). Commonalities across various adventure programs include goal setting, challenging circumstances in a natural setting and small groups working together to find solutions to problems (Baldwin, Persing & Magnuson, 2004). The uncertainty of the natural environment is used as a comparison for the uncertainty of life itself, providing crossover between treatment and awareness of real life issues (Ewert & Voight, 2012). Typical adventure or challenge-based therapies might include white-water rafting, hiking, kayaking, traversing built and natural challenge courses, backpacking in the wilderness and therapeutic camping. Outcomes from these types of programs have shown increases in coping skills and self-efficacy, especially when programming was coupled with the emotional support from

fellow service members (Dustin, Bricker, Arave, Wall, Wendt, 2011; Mowatt & Bennett, 2011).

Yoga. Despite the general misconception by the general public that yoga is a grueling, contortion based activity, yoga at its core is a mind-body intervention that promotes mindfulness. As different muscle groups are engaged coupled with the body's movement in space, a great sense of mindfulness results in individuals engaging in expressive emotion and thought which in turn promotes psychological flexibility (Dick, Niles, Street, Dimartino, & Mitchell, 2014). This flexibility is synonymous to the outcomes targeted in CPT where alternative thought patterns are developed to shift perspective on a previously debilitating topic. The controlled practice of deep-breathing and meditation in yoga has contributed to a reduction in PTSD symptoms (Fiore, Nelson, & Tosti, 2014; Seppala et al., 2014; Stankovic, 2011; Staples, Hamilton, & Uddo, 2013). In unpublished efficacy studies of yoga nidra, an ancient meditative practice, deployed military members returning home reported decreased levels of overall stress and anxiety after participation in the specific yogic exercises (IRest, 2016). This specific program is now implemented in over 50 military bases, hospitals, veteran's homes and clinics across the United States (IRest, 2016).

Animal-Assisted Therapy. Animal Assisted Therapy (AAT) utilizes relationships between humans and animals to facilitate various goals as a part of the overall treatment process. Animals can reduce the physiological reactions to stress by simply being in close vicinity to a human client (Allen, Blascovich, Tomaka, & Kelsey, 1991). Other benefits of AAT include pain relief, feelings of belonging, improved quality

of life, increased focus, increased mood and higher patient engagement in goals (Barba, 1995; Barker & Wolen, 2008; Braun, Stangler, Narveson, & Pettingell, 2009; Engelman, 2013; Martin & Farnum, 2002; Palley, O'Rourke, & Niemi, 2010).

As a result of popular culture's emphasis on anecdotal benefits of animal assisted programs, one particular animal assisted intervention, equine assisted therapy, has gained notoriety within Veterans facilities across the country. As a result of this surge in desire for alternative treatments, a variety of program philosophies and structures have gained popularity in the equine field. Two main associations have proven most popular and differentiate themselves based on programmatic decisions: The Professional Association of Therapeutic Horsemanship International (PATH International), and the Equine Assisted Growth and Learning Association (EAGALA). These two bodies differentiate themselves based upon whether participants have the opportunity to mount a horse (referring to PATH International) or stay on the ground (referring to the groundwork in the EAGALA model) and remain the two largest certification bodies for equine-assisted therapies (Gresham, 2014).

PATH International. PATH Intl is an organization that monitors and sets standards around therapeutic horsemanship interventions. They began with a focus on horseback riding as a treatment option for rehabilitating both physical and mental health ailments (Path Intl., 2017a, b). Outcomes targeted by the PATH Intl model include improving motor skills, strength and flexibility, promoting speech and cognitive reasoning, and developing social skills through relationship building (Path Intl., 2017a). PATH Intl. military programming is referred to as *Equine Services for HeroesTM* in which

programmatic elements are “...tailored to address specific issues faced by wounded and traumatized military personnel...”, utilizing a combination of groundwork, classroom activities, goal setting through sports-based and competitive riding, recreational and leisure riding skills, equine facilitated mental health interventions, hippotherapy, driving and vaulting (Path Intl, 2017c). Given PATH Intl’s broad focus on health promotion, some interventions focus more specifically on physical health outcomes, with mental health promotion as an additional outcome. The focus on improving mental wellness is the aim for serving populations with post-traumatic stress. While PATH specific literature is sparse, veterans participating in a 12-week PATH Intl equine program indicated fewer emotional and physical limitations, improved quality of life, and fewer depressive symptoms (Lanning & Krenek, 2013). Specific information regarding the nature of the military focused programming is not available to the public, however, trainings are provided to military equine therapy providers on PATH Intl’s specific protocols.

The Equine Assisted Growth and Learning Association. Contrasting with PATH Intl., the Equine Assisted Growth and Learning Association (EAGALA) focuses entirely on what is referred to in practice as *groundwork* where the client does not mount the horse. Utilizing activities with the horse on the ground, veterans may engage in leading a horse from one destination to another, interacting in teambuilding activities in the vicinity of horses, experiencing a belly breathing activity or navigating an obstacle course alongside their horse. In a challenge-by-choice atmosphere, connections develop between the horse and veteran during the session. As with any experiential therapy, therapeutic

transfer occurs when the veteran is able to relate the hands-on components of the therapy to broader life skills or relational concepts. There are two main program approaches within EAGALA; equine assisted psychotherapy (EAP) and equine facilitated learning (EFL).

Equine-assisted psychotherapy. Equine assisted psychotherapy is conducted under the supervision of a licensed Mental Health Professional (MHP) and an Equine Specialist (ES) (Gergely, 2012). Hands-on activities are central to the goals of promoting social, emotional, and spiritual wellbeing; improving communication styles and social behaviors; and increasing self-esteem, self-concept, and self-awareness (Kakacek & Ottens, 2008). Examples of hands-on activities include leading a horse through an obstacle course to promote communication, patience, and determination. Another activity referred to as belly breathing is a breathing technique in which the patient aligns their stomach to the horses, with arms stretch over the horse's back. The synchronization of the human's breathing rate and pattern to the horses helps to slow the breath and provides a calming, stress relieving type of deep-breathing. While EAP efficacy studies are limited in current literature, there are many factors that may account for EAP's effectiveness, including the therapeutic team approach, the setting, and problem-solving opportunities. Furthermore, the use of a metaphor as a teaching moment allows equine-human interactions to be analyzed and applied to a broader context of the veteran's life (Thomas, 2002; Kakacek & Ottens, 2008). Encountering resistance from the horse during an obstacle course is related to interpersonal skills required in first impressions, body language, and subtleties in the communication processes. As veterans encounter these

symbolic moments during the experience, processing the situation is key to applying lessons learned to their own lives.

Equine-facilitated learning. Provided in a group format, this approach to equine therapy focuses on the collective experience rather than on the individual. A MHP and ES are still vital to the therapeutic process in EFL; however, the focus is on educational outcomes and skill development that are defined by the group members, not the therapist (Dell, Chalmers, Bresette, Swain, Rankin & Hopkins, 2011). Outcomes targeted within the group setting may include boundary-setting, teamwork and cooperation. While little is known with regard to EAP and veterans, even less is known regarding outcomes associated with veterans' participation in EAL; yet in similar populations, individuals having experienced traumatic experiences reported decreases in psychological distress and increased overall levels of function post intervention (Kemp, Signal, Botros, Taylor & Prentice, 2013).

Program Evaluation

While efficacy studies and program evaluations are central aims for evidence-based practice, the trajectory at which equine programs are developing far surpasses the ability to effectively evaluate the nature of these interventions. As healthcare advances, professionals continuously work to establish best practices for treatment (Ganeshkumar & Gopalakrishnan, 2013). In addition, accreditation bodies such as the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) and the Commission on Accreditation of Rehabilitation Facilities (CARF) promote standards regarding evidence-based interventions (Nicklin, 2015). While these institutions focus on healthcare and

rehab organizations, the trajectory for quality, evidenced base service is growing at the community level to provide a quality continuum of care. As policies develop, there is a growing need for developing a body of research regarding complementary medicines like equine therapy. Understanding veteran's motivations and desires to participate in wellness programs outside of the traditional avenues of healthcare provides insight to better serve this population. At this point in time, this understanding is noticeably lacking. No research exists cataloguing and prioritizing program factors that veterans value within the equine therapy realm. Given the fact that many veterans are taking their healthcare decisions into their own hands (sometimes to their detriment), understanding what veterans want and need is vital.

Evaluations based on outcome data are critical to understanding the impact of specific military programs (Townsend, et al., 2018). These standard evaluative processes include pre, post, and longitudinal tracking of participant outcomes to measure a program's success at accomplishing its goals and objectives. Programs generally incorporate consumers into the evaluation process by way of satisfaction surveys, which merely help administrators determine whether or not the clients liked the program. While beneficial to individual programs, satisfaction surveys are relatively brief in nature, focus on a narrow set of program characteristics identified by program staff, and are rarely published outside of departmental reporting. The inability to transfer outcomes from these surveys into recommendations for practice inhibits the likelihood of disseminating the findings in the literature.

One means of program evaluation has begun to slowly gain traction in the social sciences in order to help assess programs, while offering insight into consumer preferences on a more global scale. The Importance-Performance Analysis (IPA), whose origins developed in the marketing realm, is a consumer (or in this case client) centric form of program evaluation that helps to identify program features that are important to the individual, and systematically ranks how well the program performs on those categories (Martilla & James, 1977). In designing the IPA, important service aspects are garnered from the literature, clients (i.e., veterans), and stakeholders (i.e., administrators) within the program. In the second phase, consumers assign a numerical value to each program indicator on a Likert-scale, ranging from not at all important to extremely important. After participation in the program, they then assign a numerical value to those same indicators, ranging from terrible performance to excellent performance.

These rankings are then mapped on a 4-quadrant matrix that outlines specific, direct feedback regarding program factors. Figure 1. highlights the four quadrants that comprise the IPA with levels of low to high importance on the ‘Y axis’ and performance on the ‘X axis’. In Quadrant I, *Concentrate Here*, program factors of high importance and low performance take priority in program improvement. In Quadrant II, *Keep Up The Good Work*, qualities of high importance with relatively high performance are encouraged to continue and deemed relevant to sustain the program. In Quadrant III, *Lower Priority*, program components are identified as having both low importance and performance to the overall structure of the intervention’s value. These aspects of the program may not be worth directing resources towards. Finally, Quadrant IV, *Possible*

Overkill, includes factors that occur frequently within the program but have minimal importance to the customer. Oftentimes, these are components that administrators believe are important to the service delivery, despite the lack of desire on behalf of the consumer. The IPA has applications for the recreation administration field as a whole (Guadagnolo, 1985), and more specifically for recreation-based rehabilitative therapy related offerings (Kennedy, 1986; Scholl, Glanz & Davison, 2006; Townsend & Van Puymbroeck, 2012; Goodwin, Hawkins, Townsend, Van Puymbroeck & Lewis, 2016).

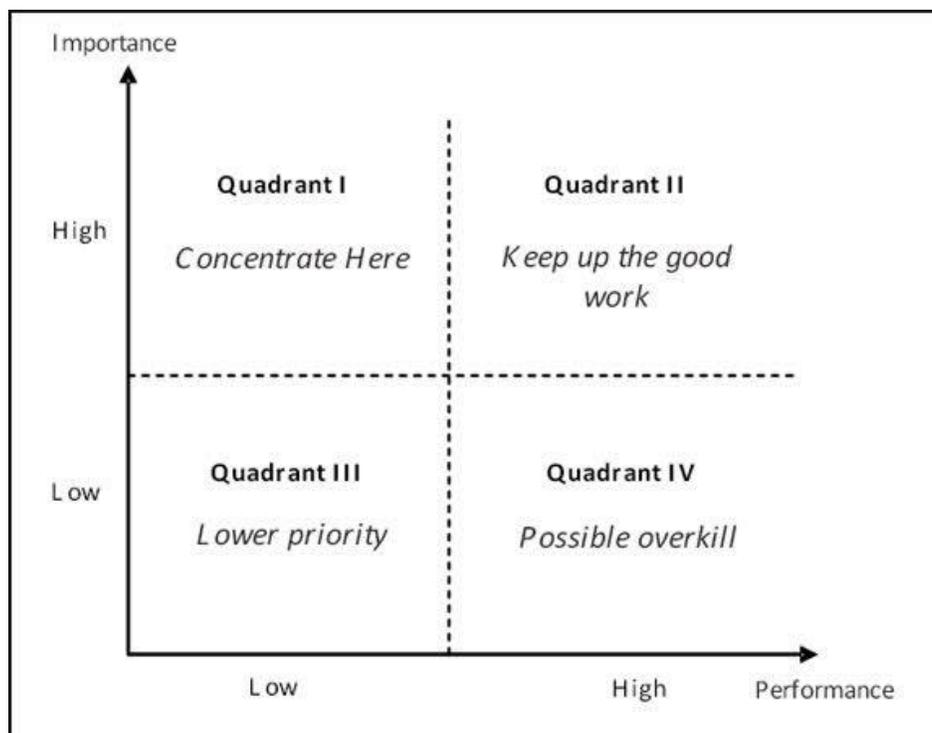


Figure 1. Importance-Performance Analysis matrix (from Tzeng & Chang, 2011)

Through garnering veteran’s perspectives on valued program attributes, this study aimed to provide a basis for future research on efficacy of equine programs targeting veterans. A sense of accountability is given to program operators and developers of future

services to incorporate, for the first time, veterans' desires and detailed feedback in a systematic way. Thus, the purpose of this study was to conduct a consumer-based program evaluation of a military focused equine program, with the intent to understand what the desired program components of most importance were for a particular equine therapy facility, and to provide specific and detailed feedback to program administrators.

Chapter 3

METHODS

Program evaluation data was collected in conjunction with the America's Warrior Partnership Four Star Alliance equine therapy programs, which include S.A.D.L.E.S Ranch Code H.O.R.S.E. program, Equest Hooves for Heroes, Horses 4 Heroes, Idaho Horse Therapy, Pikes Peak Therapeutic Riding Center, and Saratoga War Horse. These programs all provide equine therapy services for individuals with disabilities, but all of them have a military-specific component as well (with the exception of Saratoga War Horse which exclusively serves veterans). In order to provide structured, specific feedback to the individual programs and to develop a list of important program factors exclusive to veterans' equine therapy interventions, an Importance-Performance Analysis was administered to current and past military participants of these equine therapy programs.

Instrumentation

The Importance-Performance Analysis is a consumer-based evaluation conducted in two phases in order to derive important program factors and measure the program's performance on those client informed factors.

Phase I. Phase I consisted of compiling a list of valued factors for a veteran/military specific equine therapy program. This information was gathered from the program's stakeholders consisting of representative veteran participants and administrators, as well as consulting the existing literature base. The list of program factors was generated through conducting interviews, by asking participants a specific

question: “What are the factors or characteristics of a military/veteran specific equine therapy program that are important to in your decision to attend?”. Initial phase I information regarding important factors was collected until saturation/repetition occurred.

Once the list of factors was compiled, each factor was refined and clarified, and transformed into a statement. Once each factor was converted into a statement, they were arranged in a standard survey format, using a 1-5 Likert scale for importance ratings (*Not At All Important to Extremely Important*) and performance ratings (*Terrible Performance to Excellent Performance*).

Phase II. Phase II consisted of administering the IPA to past and current participants of the Four Star Alliance equine therapy programs to determine how these equine therapy programs performed on important factors. The IPA was administered retrospectively to past participants (those who completed the program between June 2016 and June 2017), as well as to participants who were currently enrolled in the program at the time of this study. Data collection with current participants began in early summer 2017 continued until August 2017, to allow for the potential of additional cohorts to develop and for those participants to complete their treatment time. Given the retrospective nature of the IPA in Phase II, it did not need to be administered in pre- and post-test fashion, which is typical with IPA evaluations. Though limitations exist in implementing a retrospective pretest, evaluation of both importance and performance can happen at the conclusion of participation as a means of providing veterans the opportunity to better understand novel program concepts they will ultimately evaluate (Lamb, 2005). This becomes helpful when novel experiences, such as interacting with a

large animal like a horse, are anticipated and misconceptions are dispelled after taking part in the intervention.

Data Collection

During Phase I, notes were taken as part of the process of generating the list of factors, and the interviews were audio recorded. Recorded interviews were not transcribed, however, as they were used only to provide context and any details missed while taking notes about the factors could be replayed for clarification. If for example, a veteran had described an encounter with the horse during their experience, the audio recordings allowed that anecdote to be played back to ensure that the researcher had comprehended what was intended. In other words, a typical qualitative analysis was not performed on interview data. During Phase II, the IPA was distributed to participants via a link to an online survey using the Qualtrics software. Responses were automatically collected in the Qualtrics program and downloaded at the conclusion of the data collection period.

Recruitment Plan

Phase I (interviews): An invitation to participate in interviews about military-specific equine programs was posted on the individual Four Star Alliance program sites. Those who responded to the posting were contacted to determine eligibility prior to receiving an invitation to set-up and complete a 10 to 20-minute interview with the principal investigator. Eligible participants included male and female veterans who had previously engaged in the aforementioned military-focused equine therapy programs at least once in the last 12 months.

Phase II (surveys): A link to the Qualtrics survey was posted on the Four Star Alliance affiliated program websites and their respective social media outlets. The primary viewership of the Four Star Alliance social media sites are program administrators; therefore, the invite asked administrators of the associated equine programs to distribute the survey to their participants on behalf of the Four Star Alliance. The collaborators at the Four Star Alliance sent periodic reminders to the equine therapy member programs throughout the data collection time period. Those participants who went to the link received consent and study information via the online survey prior to entering the survey.

Analysis Plan

Quantitative data analysis occurred after receiving surveys and transferring the dataset into SPSS data management software. After data cleaning, misleading or unusual data were screened out of the final analysis. Mean values for importance and performance were calculated for each of the program factors (two means for each factor). Means were plotted on the 4-quadrant grid, identifying program factors that needed improvement. Analyses were conducted based on aggregate data from all respondents to inform a general military equine therapy IPA, and individual program analyses were planned if particular program response rates were sufficient.

Chapter 4

Manuscript 1

Examining Importance and Performance of a Military Specific Equine Therapy Program

This article will be submitted to:

The Journal of Military, Veteran, and Family Health

Abstract

Veteran testimonies and program facilitator's professional opinions support the use of equine-assisted therapies for veterans as a psychosocial intervention, despite the limited research on its outcomes and development. Furthermore, resources for program coordinators regarding the veteran experience are scarce and based upon protocols from equine therapy entities themselves, not a readily accessible evidence base. This study used a consumer-based multi-phase program evaluation to determine client preferences and importance rankings of various program components. Results provided feedback specific to the Saratoga War Horse program, in addition to cataloging an initial set of program factors desired by a sample of treatment seeking veterans. Results of this study may be used to help recreational therapists and equine therapy program administrators to identify appropriate program components and considerations for military populations seeking this intervention.

Keywords: equine therapy, military, veterans, program evaluation, perspectives

INTRODUCTION

During the main conflicts of the Global War on Terror (GWOT) for Operations Iraqi and Enduring Freedom (OIF and OEF), nearly two-million US troops were deployed (Institute of Medicine, 2010). The Defense Casualty Analysis System reports, as of March 2017, that roughly 60,000 service members have war-related casualties (Defense Casualty Analysis System, 2017). A majority of these casualties are non-fatal, being categorized as wounded in action. Coupled with developments in healthcare and technology available in the war theatre, our society's decreased time spent in combat has led to an overall decline in war related deaths since the 1950s (Fitzpatrick & Pasquina, 2010; Roser, 2016). As more veterans return home alive, a concerning number sustain various injuries, in addition to witnessing traumatic situations, that result in trauma to both physical and mental health and wellness.

With the growth of complementary and supplementary interventions providing viable coping strategies for veterans with poly-trauma (Townsend, Hawkins & Bennett, 2015), further inquiry is needed into how this health profession can serve to rehabilitate and reintegrate this population. As a result, many veteran service organizations have formed in recent years to help aid the transition into civilian life (e.g., America's Warrior Partnership, Combat Vets to Careers, Project Sanctuary). One popular intervention for veterans has been the use of equine-assisted experiences to help promote positive adjustment. While online news outlets and personal blogs have highlighted individual veterans' positive experiences with equine assisted therapies (EAT), systematic reviews of these programs from the collective veterans' perspective do not exist.

While various programs market the benefits of equine-assisted programs, little research has documented the outcomes of veterans' participation in these interventions. Furthermore, even fewer discuss the elements of these programs that are important to the participants (i.e., the veterans), and evaluates how well the program performed on those elements. Very little systematic work has determined the program components that influence specific outcomes (i.e., PTSD, reintegration, aspects of resiliency). Programs may be developed based on clinical-expertise or specific practice models, and with or without the use of evidence-based literature or programmatic structure. Veterans may or may not be involved in the development of veteran-focused treatment programs, despite the recent growth spurt of these types of programs, and published evaluations of these programs are sparse. More information is needed to determine what programmatic aspects veterans value with regards to their health and well-being.

While typical therapies and pharmaceutical interventions can provide relief from the impacts of post-traumatic stress, alternatives are needed for those who, for various reasons, do not regularly access supervised medical care, or do not respond well to typical treatment offerings. Additionally, these types of therapeutic interventions can serve as a supplement to a regimented treatment plan to offer additional levels of support. Due to the nature of military culture and our society's stigmas on mental illness, seeking treatment is often seen as taboo. Some veterans find themselves unable to receive timely care when they initiate treatment due to real or perceived scheduling and wait time challenges (VA, 2014). More information is needed to determine the efficacy of complementary and supplementary treatments for this population. Thus, the purpose of

this study was to perform a systematic program evaluation of a veteran specific equine therapy program wherein the importance and performance of various program factors was determined.

LITERATURE REVIEW

Given the improvements in battlefield medicine, armor, and other combat technologies, service members are surviving their combat injuries more than during any previous war in our nation's history (Fitzpatrick & Pasquina, 2010; Roser, 2016). This has resulted in veterans living with severe physical impairments such as amputations, burns, various orthopedic conditions, visual and hearing impairments, and spinal cord injuries, just to name a few (Townsend, Hawkins, & Bennett, 2015). Physical injuries to the body are relatively easy to see, but what is left unseen are the psychological injuries that generally accompany those physical injuries. These include post-traumatic stress disorder (PTSD), traumatic brain injury (TBI), depression, and anxiety, among others. Even though the physical injuries are numerous, their prevalence rates pale in comparison to what has been considered the signature injuries of the Global War on Terror (GWOT) (Townsend, Hawkins & Bennett, 2015). The following section will discuss the common psychological injuries experienced by combat-veterans returning from the GWOT and is then followed by a discussion about common and complementary treatment options.

Post-traumatic Stress Disorder

PTSD is a complicated psychological diagnosis that stems from significant exposure to a traumatic event (in this case, combat experience) that may manifest in a variety of ways for different individuals. In addition to the traumatic stressor, there are

four symptom clusters associated with PTSD: 1) intrusion or re-experiencing, 2) avoidance, 3) negative changes in mood and cognition, and 4) alterations in arousal or reactivity (American Psychological Association, 2013). Each of these symptom clusters manifest differently in each individual. Based on the most recent RAND Corporation findings, estimates of 13.8% of OEF/OIF veterans have developed PTSD, compared with 10.1% for the Gulf War, and between 26% and 30% for Vietnam veterans (Tanielien & Jaycox, 2008; Kang, Natelson, Mahan, Lee, & Murphy, 2003; Kulka et al., 1990). While rates of PTSD vary across specific conflicts, veteran sample sizes have increased and knowledge of this complex disease is more sophisticated than in decades' past.

Poor mental health for veterans negatively impacts adjustment as veterans reintegrate themselves with the civilian world. Left untreated, symptoms of PTSD have pervasive effects in the lives of veterans and can contribute to unemployment, domestic violence and other legal issues, homelessness, poverty, and even suicide (Cornish et al., 2014; Elbogen et al., 2012; Hawryluk, Ridley-Kerr & Henry, 2005; Kaplan, McFarland, Huguet & Valenstein, 2012; Moore & Penk, 2011; Oquendo et al., 2005; Tanielian & Jaycox, 2008; Teten et al., 2010). PTSD is often co-occurring with other combat-related psychological disorders, such as panic disorder, anxiety, major depressive disorder (MDD), generalized anxiety disorder, personality disorder, and substance abuse, in addition to difficulties with sleep and neurocognitive disorders (Huppert et al., 2005; Papastavrou, Farmakas, Karayiannis & Kotrotsiou, 2011; Veterans Affairs, 2017d). PTSD often co-occurs with traumatic brain injuries, depression and anxiety; however, veterans are no more susceptible to develop the latter two ailments than their civilian

counterparts (Gould, Rideaux, Spira, & Beaudreau, 2014). Typical treatments for PTSD include cognitive behavioral approaches including cognitive and exposure therapies, eye movement desensitization and reprocessing (EMDR), medication, as well as group and family therapy (VA, 2017a), which will be discussed in more detail later.

Standard Treatment Options for Veterans

The VA is responsible for providing healthcare services to the millions of veterans who require both intensive care and routine health maintenance. As the largest healthcare organization in the United States, the VA utilizes common treatment modalities to help reintegrate veterans returning from war with a myriad of injuries. Standard treatments include, but are not limited to, pharmacotherapy, psychotherapy, and cognitive behavioral therapy; EMDR is emerging as a relatively newer treatment option within the VA (VA, 2017a). Many veterans, however, do not seek continued treatment through standard channels (i.e. the VA) due to stigma and lack of desire for traditional group therapy (Bowersox, Saunders & Berger, 2012).

Pharmacotherapy. In pharmacotherapy, SSRIs are used to regulate the neurotransmitter most closely involved in PTSD (i.e. serotonin) in order to regulate mood, sleep, sexual drive, anxiety, and various other functions (Walter, 2012; Brady et al., 2000; Marshall, Beebe, Oldham, & Zaninelli, 2001). Negative side effects to these medications make reliance on pharmacotherapy difficult for many veterans and civilians alike. Difficulties with sexual activity, mood, and the general feeling of not being oneself after beginning a prescription regimen are highly influential in the cessation of pharmacotherapy (Fortney et al., 2011).

Psychotherapeutic interventions. The focus for psychotherapy in treating PTSD and comorbid conditions looks to uncover deeper motivations for feeling or behavior and is typically what comes to mind when thinking of therapy. In these sessions, the veteran(s) have control over the therapy session agenda by discussing what is presently on their mind. The focus lies on current presence, including the relationship between client and therapist, while drawing in influence from past history. Psychotherapy for veterans is divided into exposure-based treatments and cognitive approaches. Exposure based treatments involve an individual with PTSD re-experiencing elements of a traumatic event in a controlled environment. Despite its success in reducing PTSD symptoms in veterans, the process of reliving trauma on a repeated basis is unimaginable for many individuals and decisions regarding treatment are based around personal preferences (Olatunji, Deacon & Abramowitz, 2009). Cognitive approaches involve analyzing and restricting maladaptive thought patterns and processes that result from traumatic experiences. Eye Movement Desensitization & Reprocessing (EMDR) is a form of cognitive behavioral and exposure therapies that utilizes rapid momentary lapses of traumatic images in conjunction with eye movements to aid in processing trauma (Hamblen, Schnurr, Rosenburg & Eftekhar, 2010; Shapiro, 2014). Re-exposure to traumatic events through discussion or thought processes can exacerbate or prevent effective treatment with individuals exhibiting signs of excessive avoidance, dissociation, anger, grief, extreme anxiety, catastrophic beliefs, substance abuse, suicidal ideation, and lack of motivation (Bryant & Harvey, 2000). Nevertheless, when used correctly and in

consideration of potential contraindications, psychotherapeutic methods such as exposure-based and cognitive approaches can be successful in reducing PTSD symptoms.

Recreation Based Treatments for Veterans with PTSD

As a result of stigma, attrition, and access to care (Bryan & Bryan, 2016), a growing number of veterans have accessed nature-based interventions, which can be a complementary extension of traditional therapies (Hawkins, Townsend, & Garst, 2016). There are many recreation-based treatment options for veterans including fly-fishing, adventure therapy, yoga, and wilderness therapy. Fly-fishing helps to promote camaraderie, reflection, and coping with regret as outcomes of involvement (Mowatt & Bennet, 2011; Price, Lundberg, Zabriskie & Barney, 2015). Improvements in attentiveness, mood, depression, anxiety and stress were found in a quantitative examination of the same fly-fishing program (Vella, Milligan & Bennett, 2013). For veterans with an affinity to natural environments, typical adventure or challenge based therapies might include white-water rafting, hiking, kayaking, traversing built and natural challenge courses, backpacking in the wilderness and therapeutic camping. Outcomes from these types of programs have shown increases in coping skills and self-efficacy, especially when programming was coupled with the emotional support from fellow service members (Dustin, Bricker, Arave, Wall, Wendt, 2011; Mowatt & Bennett, 2011). Additionally, the controlled practice of deep-breathing and meditation in yoga has contributed to a reduction in PTSD symptoms (Fiore, Nelson, & Tosti, 2014; Seppala et al., 2014; Stankovic, 2011; Staples, Hamilton, & Uddo, 2013). In unpublished efficacy studies of yoga nidra, an ancient meditative practice, deployed military members

returning home reported decreased levels of overall stress and anxiety after participation in the specific yogic exercises (IRest, 2016). Animal Assisted Therapy (AAT) is yet another developing intervention that has led to pain relief, increased feelings of belonging, improved quality of life, increased focus, increased mood and higher patient engagement in goals (Barba, 1995; Barker & Wolen, 2008; Braun et al., 2009; Engelman, 2013; Martin & Farnum, 2002; Palley et al., 2010).

As a result of popular culture's emphasis on anecdotal benefits of animal assisted programs, one particular animal assisted intervention, equine assisted therapy, has gained notoriety within veteran's facilities across the country. As a result of this surge in desire for complementary treatments, a variety of program philosophies and structures have gained popularity in the equine field. Two main associations have proven most popular and differentiate themselves based on programmatic decisions: The Professional Association of Therapeutic Horsemanship International (PATH International), and the Equine Assisted Growth and Learning Association (EAGALA). These two bodies differentiate themselves based upon whether participants have the opportunity to mount a horse (referring to PATH International) or stay on the ground (referring to the groundwork in the EAGALA model) and remain the two largest certification bodies for equine-assisted therapies (Gresham, 2014). The current body of equine-assisted therapy provides the foundation of outcome based work with pilot and case studies, calling for more robust outcome and programmatic analysis. Those studies indicating impacts on post-traumatic stress do not delineate between civilian and veteran experiences with the latter group receiving even less clinical research attention.

Program Evaluation

While efficacy studies and program evaluations are central aims for evidence-based practice, the trajectory at which equine programs are developing far surpasses the ability to effectively evaluate the nature of these interventions. As policies develop, there is a growing need for developing a body of research regarding complementary interventions like equine therapy. Understanding veteran's motivations and desires to participate in wellness programs outside of the traditional avenues of healthcare provides insight to better serve this population. At this point in time, this understanding is noticeably lacking. No research exists cataloging and prioritizing program factors that veterans value within the equine therapy realm. Given the fact that many veterans are taking their healthcare decisions into their own hands (sometimes to their detriment), understanding what veterans want and need is vital.

Evaluations based on outcome data are critical to understanding the impact of specific military programs (Townsend, et al., 2018). These standard evaluative processes include pre, post, and longitudinal tracking of participant outcomes to measure a program's success at accomplishing its goals and objectives. Programs generally incorporate consumers into the evaluation process by way of satisfaction surveys, which merely help administrators determine whether or not the clients liked the program. While beneficial to individual programs, satisfaction surveys are relatively brief in nature, focus on a narrow set of program characteristics identified by program staff, and are rarely published outside of departmental reporting. The inability to transfer outcomes from

these surveys into recommendations for practice inhibits the likelihood of disseminating the findings in the literature.

Through garnering veterans' perspectives on valued program attributes, this study aimed to provide a basis for future research on efficacy of equine programs targeting veterans. A sense of accountability is given to program operators and developers of future services to incorporate, for the first time, veterans' desires and detailed feedback in a systematic way. Thus, the purpose of this study was to conduct a consumer-based program evaluation of a military focused equine program, with the intent to understand what the desired program components of most importance were for a particular equine therapy facility, and to provide specific and detailed feedback to program administrators.

METHODS

Program evaluation data was collected in conjunction with the Saratoga War Horse program. Saratoga War Horse is a therapeutic equine program with locations in New York and South Carolina, providing experiences to veterans across the country. According to their website, Saratoga War Horse is a *three-day equine experience utilizing the Connection Process, which is an interactive experience created between off-the-track thoroughbreds and veterans. By utilizing the silent language of the horse, a mutual trust and profound bond is established that goes beyond verbal communication.* The *Connection Process* varies with each horse-to-veteran interaction, but through careful guidance by skilled instructors, the process remains predictable, sequential and repeatable.

In order to provide structured, specific feedback to the program and to develop a list of important program factors exclusive to military equine therapy interventions, an Importance-Performance Analysis (IPA) was administered to current and past military participants of both Saratoga War Horse locations.

Instrumentation

The IPA is a consumer-based evaluation conducted in two phases in order to derive important program factors and measure the program's performance on those client informed factors.

Phase I. Phase I consisted of compiling a list of valued factors for a veteran/military specific equine therapy program. The list of program factors was generated through conducting interviews, by asking participants and administrators a specific question: "What are the factors or characteristics of a military/veteran specific equine therapy program that are important to in your decision to attend?" Once the list of factors was compiled, each factor was refined and clarified, and transformed into a statement. Statements from veterans such as "...I knew I was in good hands because they have vets on staff. I didn't feel like an outsider" and "it's a program for vets by other veterans and that was really important" and "I've been to programs with 'civvies' before, no offense, but it's just not my thing," were used to identify that *Veterans on staff* was a key motivator for these veterans to attend. This process was followed through the development of the remaining factors, with input from program administrators and military equine literature resulting in 15 total program factors. Once each factor was converted into a statement, they were arranged in a standard survey format, using a 1-5

Likert scale for importance ratings (*Not At All Important to Extremely Important*) and performance ratings (*Terrible Performance to Excellent Performance*).

Phase II. Phase II consisted of administering the 15-item IPA to past and current participants of Saratoga War Horse programs to determine how these equine therapy programs performed on the program factors. The IPA was administered retrospectively to past participants (those who completed the program between June 2016 and June 2017), as well as to participants who were currently enrolled in the program. Data collection with current participants began in early Summer 2017 and continued until December 2017. Given the retrospective nature of the IPA in Phase II, it did not need to be administered in pre- and post-test fashion, which is typical with IPA evaluations. Though limitations exist in implementing a retrospective pretest, evaluation of both importance and performance can happen at the conclusion of participation as a means of providing veterans the opportunity to better understand novel program concepts they will ultimately evaluate (Lamb, 2005). This becomes helpful when novel experiences, such as interacting with a large animal like a horse, are anticipated and misconceptions are dispelled after taking part in the intervention.

Data Collection and Analysis

During Phase I, notes were taken as part of the process of generating the list of factors, and the interviews were audio recorded. Interviews were not transcribed, however, as they were only to provide context and details missed while taking notes about the factors. In other words, a typical qualitative analysis was not performed on interview data at this time. During Phase II, the IPA was distributed to participants via a

link to an online survey using the Qualtrics software. Responses were automatically collected in the Qualtrics program, and were downloaded at the conclusion of the data collection period. Prior to subjecting the data to quantitative analyses, the Phase II dataset was checked for miscellaneous data errors, outliers, and incomplete data. Several miscellaneous data errors were found that were largely due to formatting of dates and percentages. These data points were corrected by hand to fit the necessary format for analysis if there were no uncertainties about the intended response. Those data points that were uncertain were also associated with other responses that were incomplete or missing data and, at this stage, were ultimately deleted from the dataset so as to not skew the analysis.

RESULTS

Sample

Two program administrators and four veterans from a database spanning six military-specific equine therapy programs responded to invitations for Phase I interviews. Veteran participants in the interview portion were required to have participated in the program within a calendar year from their interview date. The veterans interviewed included two females and two males. A total of 53 key statements were generated from the interviews in Phase I, then refined into 15 program factors, which were compiled into a survey for implementation in Phase II. As with the interviews, veterans from Saratoga War Horse were invited to complete the survey if they had participated in the program within the last calendar year. In total, Saratoga War Horse had 223 graduates during the study time period. Sixty-five veterans completed the survey (29% response rate), and

following data cleaning, the final sample resulted in 52 responses (23% usable response rate). *Figure 2* depicts the 15 identified importance-performance factors from Phase I interviews with their associated means from the survey process in Phase II.

Factor Label	Description	Importance Mean	Performance Mean
A	Veterans were on staff.	4.08	4.88
B	Program duration was appropriate.	4.02	4.58
C	Not marketed as “therapy”.	3.79	4.42
D	Skilled mental health professionals on staff.	3.19	3.88
E	Well-known military service provider.	3.45	3.98
F	Trusted within the military community.	4.38	4.65
G	Based on a specific equine model.	3.90	4.54
H	Served vets exclusively.	4.38	4.81
I	I believed I would ride/mount a horse.	2.13	2.94
J	Class/group size was appropriate.	4.46	4.73
K	Attendance was affordable.	4.46	4.92
L	The horse was central to the program.	4.56	4.75
M	I was kept in communication prior to the program.	4.46	4.75
N	The program catered to my needs.	4.71	4.73
O	The session(s) were held in a relaxed setting.	4.79	4.96

Figure 2. Equine-therapy importance-performance factors (with associated means) identified by sample.

Findings

Demographics. *Figure 3* displays the self-reported rank, duty status, gender, age, branch, military service time, disability ranking and program specifics for the sample of 65 respondents in Phase II prior to data cleaning (demographic data was not collected in Phase I).

Sample Demographics		
Rank	2% E-1 4% E-3 14% E-4 18% E-5 10% E-6 6% E-7 10% E-8	2% E-9 2% E-9 Special 4% O-2 8% O-3 8% O-4 6% O-5 2% O-6
Duty Status	6% Active Duty 2% Guard/Reserve 2% Active Guard or Reserve (AGR)	46% Discharged 35% Retired 8% Other
Gender	30% Female	70% Male
Average age	54 ½ years old Range: 31-79 years old	
Branch	60% Army 14% Air Force 12.5% Marines 12.5% Navy	
Average time served in the military	13 ½ years Range: 1-36 years	
Average Disability Ranking	75% Range: 0-100%	
Other equine programs	90% had never participated in another equine program	
Receiving talk therapy	54% were receiving talk therapy at the time of their equine therapy session(s)	

Figure 3. Study Sample Demographics.

Amongst the 65 respondents, 63 reported some type of health condition, with the majority self-reporting three or more. Three veterans reported that they had sustained combat related health conditions but chose not to specify, and two individuals reported none. *Figure 4* details the combat related health conditions reported by this sample with total health conditions totaling 103 individual conditions. Orthopedic injuries, PTSD and TBIs were the most frequently reported health conditions.

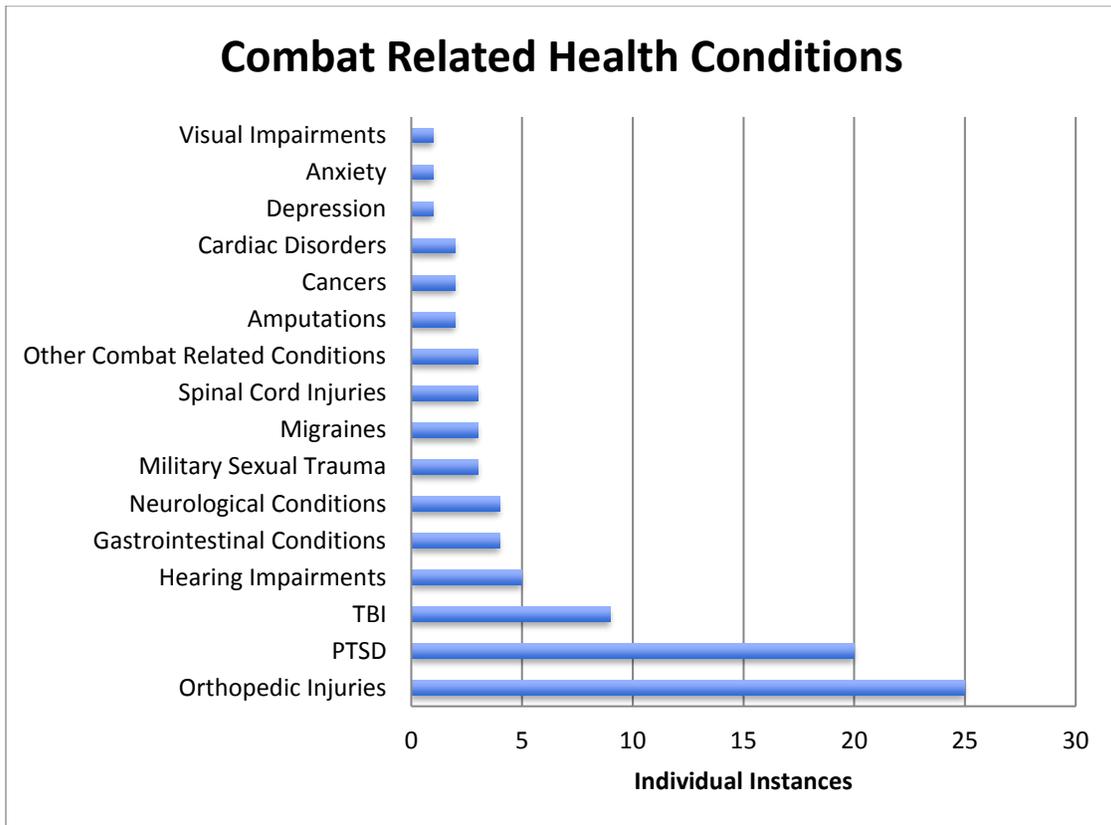


Figure 4. Self-reported combat related health conditions from the study sample.

Importance-Performance Factors. Figure 5 depicts the IPA factors and the mean scores for both importance and performance. The factors were plotted on the four-quadrant IPA matrix. Initially, all of the factors fell within the *Keep up the Good Work* quadrant, providing minimal information to program administrators to improve upon; therefore, the axes of the graph were adjusted to fall at the empirical means of the importance and performance categories ($M = 4.05$ (importance) and $M = 4.50$ (performance), respectively). The axes required redistribution to allow for feedback to be given to a program that was already well received by its constituents. Once the axes were repositioned, the items *L- The horse is central to the program*, *N- The program catered to*

my needs, and O- The session(s) were held in a relaxed setting rose to the top of critical program components, falling in the *Keep Up the Good Work* quadrant. With no factors falling within the *Concentrate Here* quadrant, there are no items which reflect an impending issue with the overall program. Factors E- Well-known military service provider, D- Skilled mental health professionals on staff, and I- I believed I would mount or ride a horse fell within the *Low Priority* quadrant, reflecting that these factors, in the grand scheme of the experience, were not key preferences for this population. The remaining factors A, B, C, F, G, H, J, K, and M fell within the *Possible Overkill* quadrant, which may provide an indication of lower priority items as well.

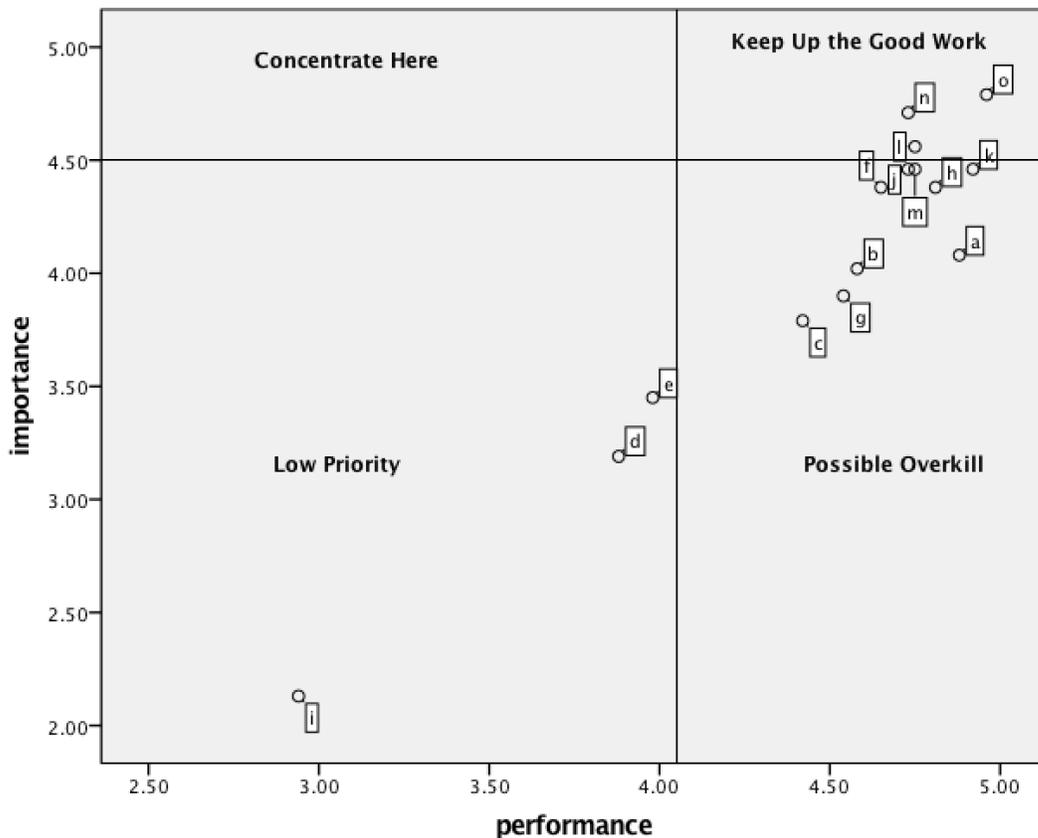


Figure 5. Importance-performance factors on grid with axes readjusted to empirical means.

DISCUSSION

Through the development and implementation of the IPA in phases I and II, 15 veteran-identified factors were provided and subsequently ranked on their overall importance and performance. The results of the phase I data collection established a preliminary basis for specific program factors deemed desirable and necessary from the program consumer: the veteran. The subsequent ranking of the factors in phase II gave insight into one specific program and, on a larger scale, demonstrated the ease-of-use for applying a consumer-driven evaluation to a veteran-focused treatment program. In general, the veterans rated the Saratoga War Horse program very high.

For those invested in the development and implementation of military-specific equine programs, key factors of importance relate to (1) the horse being central to the program, (2) the program catering to veterans' needs, and (3) the program being held in a relaxed setting. Further analysis of factor rankings proves difficult when paired with high overall program satisfaction (4.5 out of a 5 point scale) and limited the amount of feedback available to the program. The range of items to improve upon is narrow in an already well-liked program. While outcome data related to improvement of health conditions was not captured, these factors seem to support the findings of outcome-based research in veterans' health studies (Townsend, et al., 2018). With the horse being central to the program (factor *l*) and the subsequent *low-priority* perspectives on clinical or therapy-focused interventions (factors *e* and *d*), the notion that veterans seek out modalities that may complement traditional talk therapy seems supported (Townsend, et al., 2018). Of note, more than half of those who responded to the survey were receiving

traditional talk therapies at the time of their equine therapy sessions. Future studies would benefit from focus groups expanding on these factors to identify underlying attractions to complementary and supplementary therapies like equine therapy and the perceived benefits of co-therapies. In conjunction with the collection of outcome data over multiple time points, a deeper understanding of program components and their contribution to outcomes may be generated.

Veteran's seeking complementary and supplementary methods for managing combat related health conditions have been attracted to the availability of equine therapies. With the growth of this field, military-specific programs have developed rapidly over the course of the last decade, though minimal research exists to guide administrators in the development of quality veteran-centric programs. Prior to this study, information regarding the needs and desires of veterans attending military-specific equine therapy programs was scarce. With the rise of social media coverage and news outlets featuring equine therapy programs, the surge in program popularity undoubtedly led to services developing across the country. Though blended practice and theory models exist through the missions and training held by global equine therapy organizations, their use in practice is not mandatory and may contribute to large variations in program structure. A program marketing itself as a military-specific equine therapy program may not resemble programs in nearby localities, states, or regions. One of the contributions of this study is the identification of 15 factors that reflect the desires of a group of treatment-seeking veterans, and could serve as an initial core set of program factors for continued study and development. The precedence for future studies has been set and is a priority

for review by our federal government. In 2016, a letter addressed to the Committee on Armed Services, the Department of Defense most recently identified insufficient evidence and significant methodological limitations regarding the effectiveness and efficacy of equine therapies for veterans (Levine, 2016).

Furthermore, the novel application of the IPA tool provides an easy-to-implement program evaluation for administrators to re-use over time to track and modify program structure with a changing military population. Depending on the program structure, a program administrator could reproduce this IPA for their services to provide the basis for a continuous improvement plan. The applicability of the IPA extends beyond equine therapy services and has the potential to provide insight on program factors for a variety of non-pharmacological, recreation-based, and military-focused services. The collection and dissemination of this information helps to broaden the research base for continued studies leading to developments in programmatic and health-related outcomes. By utilizing the veteran input of this study to inform future program development and evaluation, consistency in programming can be achieved which will help to further align programs with veterans' needs. Recreation Therapy professionals can work together with local programs and their veteran clientele to provide the most beneficial match for individuals seeking this type of service.

Limitations and Recommendations

Despite the contributions from identifying veteran-specific program factors, this study was limited by the sample size and the use of a retrospective survey for memory recall. Providing an option for a paper and pencil survey to be administered at the

immediate end of participation would minimize issues with survey completion, retention, and recall of experiences. Utilizing the IPA presents a unique set of challenges when encountering a program that is generally well-perceived when redistribution of the axes is necessitated to provide feedback. Otherwise, had the axes not been adjusted to the means, no discussion or feedback could be provided since the entirety of the factors fell within the *Keep up the good work* section. This further constrains the feedback given as it can create a perceived problem to be addressed, when in reality there is none given that the original distribution indicated no areas for improvement. In addition, the concepts of novelty, once-in-a-lifetime experiences, and awe should be included in future studies to help explain the impacts of these types of programs on an individual's health and wellness. While interviewing veterans in Phase I, there was a consistent theme throughout many of the conversations that highlighted the life changing impact of these programs. In instances like these, it is hard to objectively survey a program that, in many cases, had such a profound effect on one's life. While not disregarding the importance of life changing experiences, this rose colored glasses effect may skew the perception of programs for individuals whose lives have changed drastically for the better post program. To meet the calls of efficacy and effectiveness data, a larger study, including health related outcomes, should be implemented across several similar programs to allow for comparisons and analysis of purported outcomes in relation to identified program factors.

CONCLUSION

Veterans access to quality complementary and supplementary interventions is contingent upon continued research. The development of a compelling evidence base for non-pharmacological approaches, and expansion beyond traditional talk therapies is a direct result of both preliminary and robust studies. Program improvement and quality assurance coincide to provide optimal services for veterans and civilians alike. The use of tools, such as the IPA, provide opportunities for program administrators and researchers to quickly and effectively identify areas of concern and areas of impact in programs serving the veteran population. The user-friendly application of the IPA provides feedback to service providers and data for researchers, bridging the gap between academia and practice.

Chapter 5

CONCLUSION

The findings from this introductory study have established 15 factors that reflect the desires of a group of treatment-seeking veterans. This information comes at a time when program popularity is heightened as a result of anecdotes and news articles being shared in support groups, on social media, and across the healthcare spectrum. The factors identified in this study can serve as a basis for program development in the future and remind facilitators of the core desires of their population. Furthermore, this novel application of the importance-performance analysis tool provides an easy-to-implement program evaluation for administrators to re-use over time to track and modify program structure with a changing military population. Despite the contributions from identifying veteran-specific program factors, this study was limited by the sample size and the use of an online, retrospective survey. Providing an option for a paper and pencil survey to be administered at the immediate end of participation would minimize issues with survey completion, retention, and recall of experiences. In addition, a larger study, including health related outcome data, should be implemented across several similar programs to analysis the purported outcomes in relation to identify program factors.

In the original development of this thesis, six equine therapy programs took part in Phase I interviews, however due to the still relatively small sample of military-specific equine therapy programs in existence, many of the original six programs contacted had been approached by several other researchers prior to this project, asking to be involved in other studies. In order to not overburden their clients, many potential survey

respondents were not given the opportunity or simply declined to participate in Phase II of this study. Still, many programs did not have the expansive list of alumni as did Saratoga War Horse which reaches in excess of 700 alumni, 223 of which were served during the time frame requested in the survey. For these reasons, it would be highly beneficial for programs to collect IPA data immediately following a client's completion of treatment sessions, so that there is no need to gather the data retrospectively or concurrently with other projects.

The continued research efforts regarding complementary and supplementary health interventions for veterans coping with a myriad of health conditions is and will continue to be an ongoing task. The use of program evaluations, in particular the IPA, is a beneficial starting point to spur conversation and promote research to understudied areas like AAT and EAT. Further collaboration between researchers and program managers is encouraged to contribute to the overall body of knowledge and provide evidenced-based interventions for our nation's veterans. Without this research base, we limit the opportunities funded and provided by largest veteran health serving organization: the VA.

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APPENDICES

Appendix A

IRB Approval/Consent Letter

Information about Being in a Research Study Clemson University

Equine Assisted Programs for Military Service Members: A Program Evaluation Using Importance-Performance Analysis

Description of the Study and Your Part in It

Dr. Jasmine Townsend along with her graduate student Taylor Hooker are inviting you to take part in a research study. Jasmine Townsend is an Assistant Professor at Clemson University. Taylor Hooker is a student at Clemson University, running this study with the help of Jasmine Townsend. The purpose of this research is to evaluate military focused equine therapy programs.

Your part in the study will be to participate in an interview that will ask about your motivations for having participated in a military focused equine therapy program. In other words, we want to identify what things are most important in a military focused equine therapy program.

The telephone interview will be audio recorded.

It will take you about 10-20 minutes to be in this study.

Risks and Discomforts

If your experience with equine therapy was uncomfortable or displeasing in any manner, then emotional risks may exist with revisiting distressing memories. In an effort to minimize any emotional risks to you, if you experience or it appears that you are experiencing distressing feelings during the interview, you or the interviewer may stop the interview at any time. You are not obligated to answer any questions that are uncomfortable for you. You will be given access to free phone services that offer peer-to-peer support and counseling services and will be encouraged to use these services at the beginning and end of the interview and at any point deemed necessary by the interviewer.

Possible Benefits

We do not know of any way you would benefit directly from taking part in this study. However, this research may help us to understand how to improve military specific programs, which may benefit you and other veterans in the future.

Protection of Privacy and Confidentiality

We will do everything we can to protect the confidentiality of the data. We will not tell anybody outside of the research team what information we collected about you in particular. We will not ask you to record any personally identifying information in the interview. If we come across any personally identifying information, it will be promptly destroyed. Audio recordings will be kept on a password protected computer and promptly destroyed at the end of the study. The results of this study may be published in scientific journals, professional publications, or educational presentations; however, no individual participant will be identified. Information regarding important program factors and the programs performance will be shared with specific administrators and the R4 alliance committee to help with improving the nature of these programs; however, no individual participant will be identified.

Choosing to Be in the Study

You do not have to be in this study. You may choose not to take part and you may choose to stop taking part at any time. You will not be punished in any way if you decide not to be in the study or to stop taking part in the study. Your participation in this study will not influence future participation in the programs you are evaluating.

Contact Information

If you have any questions or concerns about this study or if any problems arise, please contact Jasmine Townsend at Clemson University at (864) 656-2198 or by email at jntowns@clemson.edu.

If you have any questions or concerns about your rights in this research study, please contact the Clemson University Office of Research Compliance (ORC) at irb@clemson.edu or toll-free at 866-297-3071.

A copy of this form will be given to you.

Appendix B

R4 Letter of Support (Now America's Warrior Partnership)



"Programs of Excellence Serving Our Military Family"

Date: May 10, 2017

To Whom it May Concern,

Please accept this letter of support for the research being conducted by Dr. Jasmine Townsend and Taylor Hooker, identifying the importance and performance of specific factors across various military equine therapy programs. This study will be an important step in helping to develop an empirically-based foundation of knowledge concerning rehabilitation of our nation's veterans with regard to equine therapy.

The increase in awareness of the needs of our returning service members, and the subsequent growth in services like equine therapy being available to those service members, has increased the need for information to guide and direct the future of this industry. Jasmine and Taylor's work will be beneficial for us in helping to establish suggested practices and preferences surrounding equine therapy programs for veterans.

It is our hope that we will be able to use the data generated from this study to identify preferences among our populations and better inform our practices. We look forward to the results of this study helping to grow the existing body of literature surrounding equine therapy practice. If you have any questions or concerns, please don't hesitate to contact me personally.

Sincerely,

Bert Gillette

R4 Operations Director: bert@r4alliance.org

855-474-2554 Ext. 703



PO Box 836, Vienna, VA 22183 1(855)474-2554 www.r4alliance.org

Appendix C

Equine Therapy Recruitment Blurbs

Phase I Recruitment Blurb

Sent out To R4 Members

Hello,

R4 Alliance is partnering with researchers at Clemson University to conduct a study regarding important aspects of a military-focused equine therapy programs. We are looking for approximately 3-4 participants from your organization to complete a short phone interview about their experiences in military-focused equine therapy programs. We are looking for veterans that have participated or are registered to participate in your programs. The interview will take approximately 10-20 minutes and help develop a body of information regarding preferred program factors. If you think you might have participants that fit these criteria, please contact Taylor Hooker, Master's student at Clemson, at thooker@clemson.edu or 757-286-2029.

Thank you!

R4 Board

Phase I Recruitment Blurb

Sent out to Veterans Through Program Administrators

Hello,

_____ (Specific Program Name) is partnering with researchers at Clemson University to conduct a program evaluation regarding important aspects of a military-focused equine therapy program. We are looking for current and past participants (within the last 6 months) to participate in a short interview. The interview will take approximately 10-20 minutes (over the phone, Skype, FaceTime, etc) and will help us develop important aspects of military specific equine programs. If you are willing to help us evaluate our program, please contact Taylor Hooker at thooker@clemson.edu or 757-286-2029.

Thank you!

Program Administrator

Phase II Recruitment Burb
Sent out to R4 Members

Hello,

R4 Alliance is partnering with researchers at Clemson University to conduct a study regarding important aspects of a military-focused equine therapy program. We are looking for at least 10 individuals currently participating in your organization to complete a program evaluation at the completion of their sessions (paper/pencil or online). We are also looking for past participants within the last year (June 2016-August 2017) to complete this survey as well, using an online questionnaire. Both options will take approximately 10 minutes for the veteran to complete. If you think you might have participants that fit these criteria, please have them contact Taylor Hooker, Master's student at Clemson, at thooker@clemson.edu or 757-286-2029.

Thank you!

R4 Board

Phase II Recruitment Burb
Sent out to Program Participants Through Program Administrators

Hello,

We are partnering with Clemson University on a research project regarding equine therapy programs for veterans. You are being invited to participate in a 10-minute survey (online or paper/pencil) because you are currently participating, or have been a past participant in this program. Your responses are greatly appreciated and will help us improve our services.

Please click on the following link to take the survey: LINK WILL BE PROVIDED.

For people taking paper/pencil survey:

Please complete this survey and return it to your program administrator.

Thank you!

Program Administrators