

## **Examining effects of equine-assisted activities to help combat veterans improve quality of life**

### **INTRODUCTION**

It is well documented that a high number (24%) of veterans returning home from military deployments in Iraq and Afghanistan experience varying degrees of posttraumatic stress disorder symptoms and impaired quality of life [1–2]. Helping veterans successfully reintegrate into civilian life has become a focus of both the military and private psychological services, as well as other community-based groups. While psychological treatment for veterans is provided by the Department of Veteran Affairs, the Department of Defense, and private services, many veterans do not seek the help they need out of fear of the negative stigma associated with mental health care [1]. Recently, efforts have been made to reduce barriers to treatment by developing interventions that are more “veteran friendly,” such as educating unit members about mental health issues and including them in the treatment. In addition, soliciting the support of leaders and supervisors in the identification and assistance of veterans receiving treatment is proving to be beneficial [2].

One specific intervention that incorporates fellow veterans and leader support in the treatment is the Professional Association of Therapeutic Horsemanship (PATH) International Equine Services for Heroes program (formerly known as the Horses for Heroes program). This unique program includes a horse as part of the treatment, with the goal to help wounded military service personnel and veterans improve both physically and mentally [3]. The therapeutic effects of interacting with a horse on the ground or riding on top of the horse are not new and date back to earlier times. The ancient Greeks gave horseback rides to raise the spirits of the chronically and incurably ill [4–5]. It was not until 1875, however, that the first systematic study of therapeutic riding (TR) was reported. After prescribing pony riding as a treatment for a variety of conditions, French physician Chassigny concluded that riding was helpful in the treatment of certain types of neurological paralysis. He noted improvement in posture, balance, and joint movement and a striking increase in morale [6]. The PATH International Equine Services for Heroes program, built on these early findings, is a broad program designed to help veterans through the use of a variety of equine-assisted activities and therapies (EAATs).

In an effort to understand how an intervention that partners a veteran with a horse may help improve quality of life, we examined a specific EAAT known as TR. TR uses equine-assisted activities (EAAs) for the purpose of contributing positively to the cognitive, physical, emotional, and social well-being of people with disabilities [3]. Because this program is fairly new,

officially started in 2007, little research has been conducted to determine the therapeutic effects on quality of life for veterans. Anecdotal evidence reported by individual riding centers from Web sites, newsletters, and press releases suggests positive outcomes in both physical and mental health from participating in this program, but more research is needed to validate the efficacy of the program. Furthermore, a recent Tricare decision that classified hippotherapy (a specific EAAT program designed to improve physical mobility) as “investigational” and not reimbursable makes it even more imperative to start the research conversation about the efficacy of using EAAT programs to treat combat veterans with mental and physical wounds.

## STUDY

The purpose of our exploratory study was to begin to address the need for research in EAA by assessing the changes in quality of life indicators and depression symptoms of veterans participating in a PATH International Equine Service for Heroes TR program. Our research design included both qualitative and quantitative data collection over a 24 wk period with 13 veterans. We chose the 36-Item Short Form Health Survey version 2 (SF-36v2) and Beck Depression Inventory-2nd edition (BDI-II) to assess changes in health behaviors and depression symptoms. We also included postintervention open-ended questions to determine emerging themes regarding the effect of EAA on the participants. (See “Methods” section in the [Appendix](#) [available online only] for more information.)

### Procedure

The horses used in the TR program were trained by PATH International certified instructors and desensitized to situations and devices typically found in populations with physical and mental disabilities, such as wheelchairs, electric lifts, and prosthetics. The participant partnered with the horse in ground activities (grooming, leading, walking by hand) and riding activities (walking, trotting, going

around objects such as cones and barrels, riding over uneven ground). All of these activities were designed to improve communication between the participant and horse, improve muscle function and coordination, and decrease stress.

The TR program included a fellowship time that consisted of a light meal and social time where the study participants could interact with other participants, veteran volunteers, and TR staff. Each participant was then matched with a veteran volunteer and a horse. The decision for which horse and which volunteer veteran a participant worked with was made by the staff team. Matching occurred by considering several key elements: what horse (if any) was requested by the participant, the weight of the participant and the stature of the horse, whether the participant wanted to ride and whether the horse (due to physical limitations) was able to be ridden or only used for ground work, and how well the horse and participant interacted with each other. A participant might need a talkative volunteer and a more interactive horse. In another case, a participant might seem to need a very calm horse and a calm volunteer. A participant’s type of physical injury was also considered when matching the horse to the participant. A certain movement or size of a particular horse might be better for one participant than another. The human-equine partnership began with grooming and general horse care and progressed to riding if the participant was able to ride and chose to ride. In our study, all of the participants chose to ride by the end of the program. Each TR session was approximately 1 to 2 h in length and was conducted once a week.

### Findings

Participant responses to the postintervention questions indicated that the veterans signed up for the intervention because they were invited by another veteran, were looking for healing, felt helpless and/or hopeless, and/or were experiencing depression symptoms. When asked how their lives had changed since participating in the intervention, the theme that emerged most was an increased sociability. The participants commented that, “It helped build relationships outside of the house” and

“I talk to people. Shake people’s hands.” Other emerging themes included a reduction in isolation and an increase in trust of others. Many of the participants were isolating themselves in their homes. As one participant mentioned, “I really had no physical contact for a little over a year before I got here [TR center].” Most of the participants experienced these changes immediately or within weeks of starting the intervention. When asked what relationships were most important in the program and intervention, the staff and volunteers associated with the intervention were noted most often, followed by the horse. The participants used words such as “nonjudgmental,” “intuitive” (reacting to the person’s emotions), “a good listener,” and “compassionate” to describe the difference between a horse and a person. One participant explained, “When you’re with a horse, they give you kindness and compassion and love and they don’t expect anything.” When asked what they learned about themselves, the participants stated that they were stronger, more confident, and more open and accepting of others. Finally, the participants were asked to think about their futures and where they would like to be in 5 and 10 yr. The major themes that emerged were to be a better person, volunteering, having a career or going back to school, and to be able to release the stress and anxiety associated with past experiences.

Examination of the quality of life health behaviors and depression symptom scores revealed several interesting findings as well. First, not surprisingly, the baseline scores on the SF-36v2 were lower (indicating below average functioning) than the U.S. norm-based population on all eight subscales, with the lowest scores occurring in the domain assessing limitation due to emotional problems (Role Emotional). Also, the range of depression symptoms at baseline was quite large, with some participants indicating relatively little depression symptoms (score of 1) and others indicating severe depression symptoms (score of 43). Second, the participants who completed 12 sessions of TR reported an increase in scores over time in six of the eight health domains, which means that they were experiencing less physical and emotional limitations in those particular health domains over the

12 wk. Likewise, the participants who completed up to 24 TR sessions reported an increase in scores in seven of the eight health domains. Third, the participants indicated fewer depression symptoms over time, dropping almost 6 points. (See “Results” section in [Appendix](#) [available online only] for more information.)

## DISCUSSION

Overall, findings from our study indicate that combat veterans who participate in the TR program may find the experience beneficial in improving quality of life as it relates to selected health domains. Qualitative data collected from the postintervention interviews revealed emerging themes that provided a window into why and how some of the veterans found the TR intervention helpful with postwar life. Comparing and contrasting these themes with the quantitative data provided more insight into the changes experienced by the participants.

The participants were asked several questions, such as why they decided to participate in the intervention, what they learned about themselves from the process, and how working with a horse was different from working with other therapists. Themes of hopelessness, need for healing, isolation, and depression emerged as descriptors of their lives prior to the intervention. As one participant remarked, “I was stepping into severe depression. I was barely talking to anybody. I collapsed pretty much into myself and was on the verge of losing my career and everything I had worked for.” These themes are reflected in the quantitative baseline data as well. The participants’ baseline scores on both the SF-36v2 and the BDI-II indicated various levels of depression symptoms such as sadness, loss of energy, guilt, loss of interest in activities, hopelessness, and a corresponding diminished quality of life—all common to treatment-seeking Operation Iraqi Freedom, Operation Enduring Freedom, and Operation New Dawn veterans [7].

When the participants were asked to self-reflect on the changes they experienced as a result of the intervention, themes of increased sociability, reduced feelings of isolation, increased sense of

trust and hope, and increased need to serve others were noted. Participants commented:

- “A lot of stress has been lifted and I have found a new lease on life.”
- “I have gotten out of the house more.”
- “I felt for a long time that my life was coming to an end and I wasn’t very old for my life to be over.”
- “I’m an officer so I’m used to taking care of people and being a mentor has been very important to me.”

The participants stopped avoiding other people, became less detached from their surroundings, demonstrated more engagement with the horses and volunteers, began to express some form of hope, and in many cases, demonstrated improvement in physical symptoms. The program provided them with a safe environment in which they could self-explore their postdeployment behaviors and emotions. As one participant explained, “You get forced to bring [problems] up and deal with them to the horse. It’s pretty interesting. It’s amazing. I noticed that has changed so I’m kind of dealing with it and I talk it out with a couple of people [I] kind of trust here. Well, I do trust here.”

Tedeschi and Calhoun [8] posit that for post-traumatic growth (a positive psychological change experienced as a result of the struggle with highly challenging life circumstances) to occur, trauma survivors must rebuild their assumptions about the world around them, which starts with a new evaluation of self [9]. Psychological crisis can challenge a person’s fundamental assumptions about his or her world, including benevolence, predictability, controllability of the world, safety, identity, and the future [10]. The environment is a key element to this rebuilding process and the “barn” environment appeared to provide that safe haven.

Results from the quantitative data seemed to indicate similar changes as those mentioned by the participants responding to postintervention questions regarding how the program affected their quality of life. The veterans participating in a minimum of 12 TR sessions (12 wk) reported an increase in scores in several health domains, such as general

health, vitality (energy level), and a reduction in the interference of emotional health on everyday activities. Participants continuing in the TR program (beyond 12 sessions) seemed to sustain many of the improvements in the health domains, including an increase in the aggregated mental health score. Questions that the participants answered as part of the SF-36v2 assessment were similar to the self-reflective answers given by the participants during the interviews. In order to assess the mental health, role emotional, and vitality health domains, the participants were asked questions such as—

- Do they feel tired?
- Do they have a lot of energy?
- Are they nervous?
- Do they feel calm and peaceful?
- Do they feel depressed?
- Do they accomplish less than they would like?

They were also asked to rate their health. One would expect that if the emerging themes from the interviews reflected positive changes in quality of life indicators after participating in TR then the quantitative would follow the same pattern, and in part, it did. However, the data from the BDI-II did not reflect the same degree of positive change as noted in the SF-36v2 data. While the participants reported less depression symptoms over time, the change in mean score was small and did not necessarily indicate a complete drop from one level of depression symptoms (i.e., severe, moderate, low) to another level. However, caution should be used in the interpretation of set points to determine levels of depression symptoms. Deardorf and Funabiki [11] and Hammen [12] acknowledge the difficulty in establishing universal set points to determine different degrees of depression. A better understanding of changes in depression symptoms may occur when measured changes are compared with changes in other constructs of interest [13]. Comparisons of BDI-II mean scores of both groups with the mental health domain mean scores of the SF-36v2 indicate a pattern of consistent improvement in depression symptoms over time.

One of the differences between EAA-type interventions and traditional therapy is the presence of

the horse; therefore, we wanted to explore this element further. The horse was part of the safe environment and seemed to contribute, in a unique way, to the personal growth of the participant. When the participants were asked about how working with a horse was different than working with other therapists, they used terms such as “nonjudgmental,” “no expectations,” and “compassion” to describe the horse. Some of the most revealing insights into the therapeutic effects of the horse came from the participants’ complete statements. Two participants commented:

“When you’re with a horse they give you kindness and compassion and love and they don’t expect anything. They don’t want to give you advice and they don’t want to make things seem less than they are. They’re just there for you.”

“I learned that even though I have issues in my life, I can come here to this program and get past my issues by working with the horse. I get a natural raw benefit from it [TR]. It’s [the horse] not a psychologist or a psychiatrist prescribing meds or telling me how they feel about a situation. The horse interacts with me in a way . . . it’s a natural animal, makes me feel like you’re part of the service again.”

In general, participants commented that the horse gave them immediate feedback on their emotions by reacting to their behaviors and allowing them to process that information in a nonjudgmental environment. Interaction with the horse allowed the participants to see themselves in a different role—another important step toward growth [8]. As previously stated, this positive interaction, along with the support of other veterans in the program, provided an improved social network that may have led to a reduction in depression symptoms, a finding that is supported in the literature. Fava et al. found that using interventions that focus on personal growth, self-acceptance, and positive relationships can improve symptoms associated with mood and anxiety disorders [14]. The ability to feel safe and supported in their environment is an important first step for veterans to integrate into civilian life.

Theoretically, the reported changes in quality of life and depression symptoms may be contributed to a variety of factors. The mere exposure to positive,

nonthreatening social interaction with fellow veterans and TR instructors may provide an atmosphere of comfort and social support for the participants. The social support theory has long been used to describe the positive health effects of human social companionship and interaction [15–16]. Further, Pietrzak et al. found that higher postdeployment social support was associated with decreased traumatic stress and depressive symptoms [17]. In a similar way, the horse may provide a type of social support or a safe “companion” for the veteran. The horse has also been noted to elicit a wide range of emotion and behaviors in humans, providing opportunities for personal growth [18]. The veteran may be able to relate to the horse’s natural hypervigilance and instinct to escape when threatened [19], making the horse a likely companion for this special population. In addition, the act of riding the horse provides a unique therapeutic experience for veterans, especially those with physical disabilities and/or limited mobility. But beyond the physical improvements, TR may provide a type of “expanded world” for the participant with disabilities and/or limited mobility. It gives the individual a chance to participate and succeed at something like many others without disabilities, providing a normalizing and equalizing type of activity. Further, the excitement of riding may encourage the individual to talk about the experience and thus increase his or her interest in life [20]. Many of these conjectures were reflected and supported in the participants’ responses to the postintervention questions.

## LIMITATIONS

While the findings from our study are encouraging and provide a preliminary foundation for further research, interpretation of the results is limited by the small sample size, lack of a control group, and attrition. Therefore, any inference toward establishing effectiveness is premature at this time. We also acknowledge the limitations of using self-reporting assessments with veterans. Veterans are trained to be strong and resilient. The veterans participating in this intervention were trained under the U.S. Army values of loyalty, duty, respect, selfless service, honor,

integrity, and personal courage [21]. For the veteran, these values are not just learned, they are lived. Reporting mental health issues such as depression and/or anxiety is not easy and may lead to the veteran reporting that he or she is doing well when in reality he or she is struggling with many emotional issues. We were aware of this limitation prior to the start of the study and therefore chose to use qualitative postintervention interviews to help us identify gaps in the quantitative assessments and gain a deeper understanding of the program effect.

## CONCLUSIONS

In summary, our exploratory study highlights a novel and promising way to help combat veterans improve their quality of life. This is the first investigation we are aware of that used a mixed-methods approach to assess changes in quality of life indicators of veterans who participated in TR. Although it is unclear whether the TR intervention was responsible for the noted changes in health domains and depression symptoms—due to a lack of control conditions—there is overarching evidence that participating in this type of intervention was beneficial for the veterans. We strongly recommend that more research be conducted to elucidate the effect of the human-equine interaction and to explore the efficacy of EAA as a therapeutic modality for combat veterans trying to reintegrate into civilian life and work.

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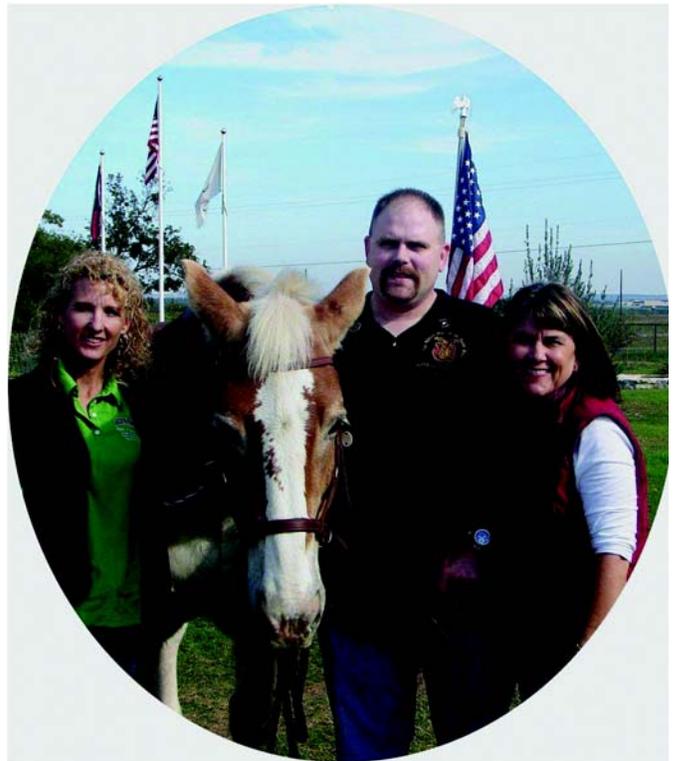
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From left to right: Beth A. Lanning, PhD, MCHES; Sherrie, 16-year-old Belgian mare; Veteran in PATH International Equine Services for Heroes program; and Nancy Kreneck, PT, HPCS.