

BRIEF REPORT

Equine-Assisted Therapy for Anxiety and Posttraumatic Stress Symptoms

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We tested the efficacy of the Equine Partnering Naturally[®] approach to equine-assisted therapy for treating anxiety and posttraumatic disorder (PTSD) symptoms. Participants were 16 volunteers who had experienced a Criterion A traumatic event, such as a rape or serious accident, and had current PTSD symptoms above 31 on the PTSD Checklist (PCL-S; Weathers, Litz, Herman, Huska, & Keane, 1993). Participants engaged in tasks with horses for 6 weekly 2-hour sessions. Immediately following the final session of the Equine Partnering Naturally[®] program, participants reported significantly reduced posttraumatic stress symptoms, $d = 1.21$, less severe emotional responses to trauma, $d = 0.60$, less generalized anxiety, $d = 1.01$, and fewer symptoms of depression, $d = 0.54$. Immediately following equine-assisted therapy, participants significantly increased mindfulness strategies, $d = 1.28$, and decreased alcohol use, $d = 0.58$. There was no significant effect of the treatment on physical health, proactive coping, self-efficacy, social support, or life satisfaction. Thus, we found evidence that the Equine Partnering Naturally[®] approach to equine-assisted therapy may be an effective treatment for anxiety and posttraumatic stress symptoms. Future research should include larger groups and longer term follow-up measures.

Equine-assisted therapy is becoming a popular method to help people suffering from a variety of psychological issues (Masini, 2010). The Equine-Assisted Growth and Learning Association (Eagala, 2014) includes 600 equine-assisted therapy programs. Evidence of the effectiveness of equine-assisted therapy, however, is greatly needed. We examined the effectiveness of the Equine Partnering Naturally[®] program (Yetz, 2011) for reducing anxiety and posttraumatic stress disorder (PTSD) symptoms.

Most studies on equine-assisted therapy had very few participants and largely documented that people enjoy interacting with horses (e.g., Burgon, 2011). For example, Bizob, Joy, and Davidson (2003) conducted interviews with five adults who learned to ride horses and noted increases in self-efficacy and self-esteem, and in Chardonnens (2009) a teenager self-reported increased responsibility and self-esteem following interactions with a horse.

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Results from larger studies using standardized measures have been mixed. Ewing, MacDonald, Taylor, and Bowers (2007) found no effect of a 9-week equine-assisted therapy program on self-esteem, empathy, locus of control, loneliness, or depression in 26 children with severe emotional disorders. Klontz, Bivens, Leinart, and Klontz (2007), however, found increases in self-actualization and decreases in general distress in 31 self-selected adult volunteers who participated in a residential equine-assisted therapy program, and these changes were maintained through a 6-month follow-up. These differences may be due to different age groups, treatments, symptom severity, or measures. The goal of our study was to contribute to the understanding of whether equine-assisted therapy is effective, and if so, under what circumstances.

There is a great need for research to determine the effectiveness of specific equine-assisted therapy techniques for individuals with different psychological disorders. We hypothesized that the Equine Partnering Naturally[®] program (Yetz, 2011) would reduce PTSD, anxiety, and depression symptoms and increase mindfulness, but would not affect other coping and support mechanisms.

Mindfulness may reduce symptoms of anxiety and PTSD (e.g., Bhatnagar et al., 2013). We propose that working with horses could increase insight and mindfulness, which in turn may decrease anxiety and PTSD symptoms. Awareness and nonjudgmental acceptance of the present are aspects of

mindfulness (Kabat-Zinn, 2006). Equine Partnering Naturally[®] incorporates mindful observation. Yetz (2011) hypothesized that horses may model a present focus and as imposing animals may encourage attention. Horses are highly responsive to humans. For example, Yorke et al. (2013) found a positive correlation between cortisol levels in children with PTSD and cortisol levels in their therapy horses, and Maros, Gacsi, and Miklosi (2008) found that horses respond to human gestures. Horse responses may provide immediate feedback about a person's nonverbal behavior (e.g., horses may crowd a person who is hunched and avoiding eye contact or back away from a person who is approaching quickly with prolonged eye contact), helping increase awareness of one's behaviors and emotions.

Method

Participants

Participants were recruited through mental health practitioners. Inclusion criteria were that participants reported at least one Criterion A traumatic event on the Life Events Checklist (LEC; Blake et al., 1995); and had current PTSD symptoms above the recommended cutoff of 31 (Yeager, Magruder, Knapp, Nicholas, & Frueh, 2007) on the PTSD Checklist (PCL-S; Weathers, Litz, Herman, Huska, & Keane, 1993). Two participants scoring below 31 on the PCL were excluded. All participants reported directly experiencing at least two traumas on the LEC ($M = 5.75$, $SD = 2.38$). When identifying the worst event, participants reported the following: serious accident; physical or sexual assault; life-threatening illness or injury; and sudden, violent death. The time elapsed since the trauma was 1 to 39 years ($M = 19.36$, $SD = 13.35$). Participants were 12 female and 4 male volunteers age 33 to 62 ($M = 51.25$, $SD = 9.99$) with at least a high school education. Participants rated their comfort with horses from 1 = *totally* to 5 = *not at all* ($M = 2.56$, $SD = 1.21$).

Measures

Psychological and physical health were assessed using the 17-item PCL-S (Weathers et al., 1993; Cronbach's $\alpha = .88$), 17-item LEC for trauma history (Blake et al., 1995), 18-item Trauma Emotion Questionnaire (Vernon, 2009; Cronbach's $\alpha = .89$), 7-item Generalized Anxiety Disorder Scale (Spitzer, Kroenke, Williams, & Lowe, 2006; Cronbach's $\alpha = .87$), 9-item Patient Health Questionnaire measuring depression (Kroenke, Spitzer, & Williams, 2001; Spitzer, Kroenke, & Williams, 1999; Cronbach's $\alpha = .91$), 10-item Alcohol Use Disorders Identification Test (Saunders, Aasland, Babor, de la Fuente, & Grant, 1993; Cronbach's $\alpha = .91$), and 15-item Somatic Symptom Severity Scale of the Patient Health Questionnaire (Kroenke, Spitzer, & Williams, 2002; Cronbach's $\alpha = .68$).

Mindfulness, coping strategies, and social support were assessed using the 39-item Five Facet Mindfulness Questionnaire (Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006) (Cron-

bach's $\alpha = .86$), 14-item Proactive Coping subscale of the Proactive Coping Inventory (Greenglass, 2002; Cronbach's $\alpha = .93$), 9-item General Perceived Self-Efficacy Scale (Schwarzer & Jerusalem, 1995; Cronbach's $\alpha = .97$), 15-item Social Support Scale (Cohen, Mermelstein, Kmack, & Hoberman, 1985; Cronbach's $\alpha = .64$), 5-item Satisfaction With Life Scale (Diener, Emmons, Larsen, & Griffin, 1985; Cronbach's $\alpha = .77$), and 10-item Life Orientation Test-Revised (Scheier, Carver, & Bridges, 1994; Cronbach's $\alpha = .93$).

Procedure

The Institutional Review Board of Florida Atlantic University approved this study. A research assistant with no role in the therapy administered all consent forms and questionnaires. The baseline questionnaires were administered within a few weeks before the first session, and the posttreatment questionnaires were administered immediately following the final session while participants remained at the facility.

Participants attended the program in three groups ranging from five to six participants. Participants came to the facility once a week for 6 weeks. Each 2-hour session was conducted by Dr. Yetz. All tasks were individual, with the rest of class mindfully observing and occasionally discussing the process of the task and personal insights they gained. They were asked to avoid commenting on one another.

In Session 1, participants met the horses and worked with the horses to develop noncritical self-awareness, improved concentration, and improved listening skills. In Session 2, participants learned how to have nonverbal interactions with horses. They explored the effects of actions and body language and learned about boundaries in relationships. In Session 3, participants learned to halter the horses and worked on dealing with challenges and stressful situations. In Session 4, participants learned how to lead and back up a horse. They dealt with creating safe spaces and setting boundaries in relationships. In Session 5, participants learned how to stay focused when faced with distraction or temptation. In Session 6, participants reviewed previously learned skills and worked on inner stillness and stability. This regimen is considered a full course of treatment. More details on the Equine Partnering Naturally[®] program can be found in Yetz (2011).

Results

Means, standard deviations, and effect sizes for all measures are in Table 1.

Participants' PTSD symptoms, emotional distress, anxiety symptoms, depression symptoms, and alcohol use decreased significantly following program participation.

Participants' mindfulness increased following treatment. There were no significant changes in physical health, proactive coping, general perceived self-efficacy, social support, life satisfaction, or optimism.

Table 1
Effects of 12 Hours of Equine-Assisted Therapy

Variable	Pretest		Posttest		<i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Posttraumatic stress	50.93	12.63	39.38	16.73	1.21***
Trauma emotion	3.22	0.80	2.83	0.90	0.60*
Generalized anxiety	12.56	6.20	8.31	5.47	1.01**
Depression	20.50	7.45	18.25	6.26	0.54*
Alcohol use	3.25	2.59	2.56	2.06	0.58*
Physical health	7.87	3.34	7.13	3.07	0.37
Mindfulness	109.69	16.86	123.34	19.26	1.28***
Proactive coping	39.53	9.00	39.50	9.02	0.001
Self-efficacy	28.63	7.63	30.19	5.80	0.45
Social support	12.19	2.48	12.22	2.27	0.02
Life satisfaction	17.81	6.10	19.13	7.66	0.25
Optimism	19.06	7.51	19.69	7.08	0.18

Note. *N* = 16; analysis was paired *t* test.

p* < .05. *p* < .01. ****p* < .001.

Discussion

We propose that equine-assisted therapy may be an effective therapeutic technique for treating PTSD and other anxiety symptoms. Currently, many therapists are conducting equine-assisted therapy (Eagala, 2014), but there is little consensus about how it should be conducted or how effective different therapy programs are for the treatment of different psychological symptoms. The results of our study support the hypothesis that the Equine Partnering Naturally[®] program (Yetz, 2011) may be effective for the treatment of posttraumatic stress, anxiety, and depression symptoms. At the conclusion of the last session of the 6-week program, participants reported significant reductions in anxiety and depression symptoms and trauma-related distress. These results contrast with the findings of Ewing et al. (2007) who found no benefit of equine-assisted therapy on children's depression symptoms. Our results may have differed from Ewing et al. because our participants were adults. The current results are consistent with Klontz et al. (2007) who found reductions in psychological distress as measured by the Global Severity Index in adult patients following an intensive, 4.5 day, 28-hour residential equine-assisted therapy program. We found, however, that a much less intensive outpatient program may be effective in reducing symptoms of anxiety and depression.

Equine-assisted therapy may be an effective treatment for people suffering from anxiety symptoms because they increase mindfulness through interactions with horses. We found significant increases in mindfulness following the program. Instructions and discussions emphasized a nonjudgmental accepting awareness, and the present-focused awareness of the horses may also have encouraged mindfulness. Participants initially varied widely in comfort with horses, and initial comfort was not

significantly correlated with changes in depression, anxiety, or PTSD symptoms, suggesting that equine-assisted therapy can be effective regardless of comfort with horses.

There were no significant effects of equine-assisted therapy on physical health, coping strategies, self-efficacy, life satisfaction, optimism, or social support. These results are consistent with those of Ewing et al. (2007) and suggest that even when other important psychological factors in a person's life remain constant, equine-assisted therapy could have a positive impact. These results differ, however, from those of Bizob et al. (2003) and Chardonnens (2009) who reported increases in self-efficacy. Bizob et al. (2003) and Chardonnens (2009) did not use standardized measures of coping and self-efficacy, but instead used unstructured interviews that may have been more susceptible to demand characteristics.


Although there are some limitations in the current study that suggest the need for further research, the Equine Partnering Naturally[®] (Yetz, 2011) approach to equine-assisted therapy may be an effective treatment for PTSD and other anxiety and depression symptoms. The current study lacked a control group, so it is possible that the demonstrated effects were not due to the treatment. Nevertheless, there was not a general overall tendency to give more positive responses at posttreatment as is evidenced by the lack of change in support and coping strategies. Similar to Klontz et al. (2007) and Ewing et al. (2007), we administered the posttreatment questionnaires immediately following treatment at the equine facility. In an attempt to lessen demand characteristics, research assistants not associated with the treatment administered the pretreatment and posttreatment questionnaires. We do not have follow-up data on these participants, however, so we do not have information on the long-term effects of the treatment once participants are out of the treatment environment. Participants were adult volunteers who were allowed to continue their current treatment or medication regimen. Participants received treatment in groups, but individual insight and mindfulness, rather than group interactions, were emphasized. Participants were instructed not to comment on one another. This may be responsible for our finding that social support did not change as a result of the treatment. Future research should examine the long-term effects of the treatment and the influence of group dynamics and expectancy effects on treatment outcome. If patients gain insight and mindfulness by interacting with a sensitive horse who responds to their emotional states, a more appropriate term for equine-assisted therapy may be equine-partnered therapy.

References

- Baer, R. A., Smith, G. T., Hopkins, J., Krietemeyer, J., & Toney, L. (2006). Using self-report assessment methods to explore facets of mindfulness. *Assessment, 13*, 27–45. doi:10.1177/1073191105283504
- Bhatnagar, R., Phelps, L., Rietz, K., Juergens, T., Russell, D., Miller, N., & Ahearn, E. (2013). The effects of mindfulness training on post-traumatic stress disorder symptoms and heart rate variability in combat veterans. *Journal of Alternative and Complementary Medicine, 19*, 860–861. doi:10.1089/acm.2012.0602

- Bizub, A. L., Joy, A., & Davidson, L. (2003). "It's like being in another world:" Demonstrating the benefits of therapeutic horseback riding for individuals with psychiatric disability. *Psychiatric Rehabilitation Journal*, *26*, 377–384. doi:10.2975/26.2003.377.384
- Blake, D. D., Weathers, F. W., Nagy, L. M., Kaloupek, D. G., Gusman, F. D., Charney, D. S., & Keane, T. M. (1995). The development of a Clinician-Administered PTSD Scale. *Journal of Traumatic Stress*, *8*, 75–90. doi:10.1002/jts.2490080106
- Burgon, H. L. (2011). 'Queen of the world:' Experiences of 'at-risk' young people participating in equine-assisted learning/therapy. *Journal of Social Work Practice*, *25*, 165–183. doi:10.1080/02650533.2011.561304
- Chardonens, E. (2009). The use of animals as co-therapists on a farm: The child-horse bond in person-centered equine-assisted psychotherapy. *Person-Centered and Experiential Psychotherapies*, *8*, 319–332. doi:10.1080/14779757.2009.9688496
- Cohen, S., Mermelstein, R., Kamarck, T., & Hoberman, H. (1985). Measuring the functional components of social support. In I. Sarason & B. Sarason (Eds.), *Social support: Theory, research, and applications* (pp. 73–94). The Hague, The Netherlands: Martinus Nijhoff.
- Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The Satisfaction With Life Scale. *Journal of Personality Assessment*, *49*, 71–75. doi:10.1207/s15327752jpa4901_13
- Eagala. (2014). Equine Assisted Growth and Learning Association homepage. Retrieved from <http://www.eagala.org>
- Ewing, C. A., MacDonald, P. M., Taylor, M., & Bowers, M. J. (2007). Equine-facilitated learning for youths with severe emotional disorders: A quantitative and qualitative study. *Child & Youth Care Forum*, *36*, 59–72. doi:10.1007/s10566-006-9031-x
- Greenglass, E. R. (2002). Proactive coping. In E. Frydenberg (Ed.), *Beyond coping: Meeting goals, vision, and challenges* (pp. 37–62). London, England: Oxford University Press.
- Kabat-Zinn, J. (2006). *Coming to our senses: Healing ourselves and the world through mindfulness*. New York, NY: Hyperion Books.
- Klontz, B. T., Bivens, A., Leinart, D., & Klontz, T. (2007). The effectiveness of equine-assisted experiential therapy: Results of an open clinical trial. *Society & Animals: Journal of Human-Animal Studies*, *15*, 257–267. doi:10.1163/156853007x217195
- Kroenke, K., Spitzer, R. L., & Williams, J. B. (2001). The PHQ-9: Validity of a brief depression severity measure. *Journal of General Internal Medicine*, *16*, 606–613. doi:10.1046/j.1525-1497.2001.016009606.x
- Kroenke, K., Spitzer, R. L., & Williams, J. B. W. (2002). PHQ-15: Validity of a new measure for evaluating the severity of somatic symptoms. *Psychosomatic Medicine*, *64*, 258–266.
- Maros, K., Gacsi, M., & Miklosi, A. (2008). Comprehension of human pointing gestures in horses (*Equus caballus*). *Animal Cognition*, *11*, 457–466. doi:10.1007/s10071-008-0136-5
- Masini, A. (2010). Equine-assisted psychotherapy in clinical practice. *Journal of Psychosocial Nursing and Mental Health Services*, *48*, 30–34. doi:10.3928/02793695-20100831-08
- Saunders, J. B., Aasland, O. G., Babor, T. F., de la Fuente, J. R., & Grant, M. (1993). Development of the Alcohol Use Disorders Identification Test (AUDIT): WHO collaborative project on early detection of persons with harmful alcohol consumption. II. *Addiction*, *88*, 791–804. doi:10.1111/j.1360-0443.1993.tb02093.x
- Scheier, M. F., Carver, C. S., & Bridges, M. W. (1994). Distinguishing optimism from neuroticism (and trait anxiety, self-mastery, and self-esteem): A reevaluation of the Life Orientation Test. *Journal of Personality and Social Psychology*, *67*, 1063–1078. doi:10.1037/0022-3514.67.6.1063
- Schwarzer, R., & Jerusalem, M. (1995). Generalized Self-Efficacy Scale. In J. Weinman, S. Wright, & M. Johnston (Eds.), *Measures in health psychology: A user's portfolio. Causal and control beliefs* (pp. 35–37). Windsor, UK: NFER-Nelson.
- Spitzer, R. L., Kroenke, K., Williams, J. B., & Lowe, B. (2006). A brief measure for assessing generalized anxiety disorder: The GAD-7. *Archives of Internal Medicine*, *166*, 1092–1097. doi:10.1001/archinte.166.10.1092
- Spitzer, R., Kroenke, K., & Williams, J. B. (1999). Validation and utility of a self-report version of Prime MD: The PHQ Primary Care Study. *Primary Care Evaluation of Mental Disorders*, *282*, 1737–1744. doi:10.1001/jama.282.18.1737
- Vernon, L. L. (2009, March). The Trauma Emotion Questionnaire (TEQ): Investigating the psychometric properties of a measure of peritraumatic emotional responses. Poster presented at the Anxiety Disorders Association of America Conference, Santa Ana Pueblo, New Mexico.
- Weathers, F. W., Litz, B. T., Herman, D. S., Huska, J. A., & Keane, T. M. (1993, October). The PTSD Checklist (PCL): Reliability, validity and diagnostic utility. Paper presented at the International Society for Traumatic Stress Studies Conference, San Antonio, Texas.
- Yeager, D. E., Magruder, K. M., Knapp, R. G., Nicholas, J. S., & Frueh, B. C. (2007). Performance characteristics of the posttraumatic stress disorder checklist and SPAN in Veterans Affairs primary care settings. *General Hospital Psychiatry*, *29*, 294–301. doi:10.1016/j.genhosppsych.2007.03.004
- Yetz, J. P. (2011). Equine guided psychotherapy program description. Retrieved from <http://www.yetzmndonline.com/>
- Yorke, J., Nugent, W., Strand, E., Bolen, E., New, J., & Davis, C. (2013). Equine-assisted therapy and its impact on cortisol levels of children and horses: A pilot study and meta-analysis. *Early Child Development and Care*, *183*, 874–894. doi:10.1080/03004430.2012.693486

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