



Equine-assisted services for Veterans: Current state of the field and future directions

By



William (Bill) Marchand, MD, LFAPA

Director of Research and Equine-assisted Services

Whole Health Service, VA Salt Lake City Health Care System

Professor of Psychiatry (Clinical), University of Utah School of Medicine

Adjunct Professor of Animal, Dairy and Veterinary Sciences, Utah State University

Who I am

- Horse person
- Psychiatrist by training
- Mindfulness teacher and practitioner
- Certified by Eagala in equine-assisted psychotherapy
- PATH Intl. CTRI and ESMHL
- CHA EFM and EWI
- Veteran of the army and air force





Agenda



- ▶ Primary focus today is on Veterans with trauma histories
- ▶ Why equine-assisted services for Veterans?
- ▶ The equine-assisted services program at the VA Salt Lake City Health Care System
- ▶ The state of the field in terms of research and evidence
- ▶ Research recommendations to move the field forward
- ▶ Development and evaluation of a novel EAS intervention for Veterans with trauma histories
- ▶ Questions and answers



Collaboration



- ▶ I am interested in developing additional research collaborations
- ▶ I am happy to consult with other facilities regarding program development
- ▶ I will send copies of our papers on request
- ▶ My contact information will be provided at the end



Why EAS for Veterans?

- ▶ Among military personnel and Veterans, rates of PTSD approach 30.%
- ▶ In addition to the symptoms of PTSD, this condition is associated with impairment in:
 - ▶ social
 - ▶ occupational, and
 - ▶ physical functioning
- ▶ As well as:
 - ▶ reduced quality of life
 - ▶ physical health problems

Hoge, C. W.; Castro, C. A.; Messer, S. C.; McGurk, D.; Cotting, D. I.; Koffman, R. L., Combat duty in Iraq and Afghanistan, mental health problems, and barriers to care. *N Engl J Med* 2004, 351, (1), 13-22.

Suris, A.; Lind, L., Military sexual trauma: a review of prevalence and associated health consequences in veterans. *Trauma Violence Abuse* 2008, 9, (4), 250-69.

APA, *Diagnostic and Statistical Manual of Mental Disorders, Text Revision*. . American Psychiatric Association Publishing: Arlington, VA, 2022.



Why EAS for Veterans?

- Functional impairment is exhibited across social, interpersonal, physical health, and occupational domains.
- This often manifests as:
 - poor social and family relationships
 - absenteeism from work
 - lower income
 - lower educational and occupational success

APA, *Diagnostic and Statistical Manual of Mental Disorders, Text Revision*. . American Psychiatric Association Publishing: Arlington, VA, 2022.



Why EAS for Veterans?

- ▶ Among Veterans with PTSD, up to 80% may have complex PTSD
- ▶ Which further increases the risk of suicide and psychiatric comorbidities

Letica-Crepulja, M.; Stevanovic, A.; Protuder, M.; Grahovac Juretic, T.; Rebic, J.; Franciskovic, T., Complex PTSD among treatment-seeking veterans with PTSD. *Eur J Psychotraumatol* 2020, 11, (1), 1716593.

Wisco, B. E.; Marx, B. P.; Wolf, E. J.; Miller, M. W.; Southwick, S. M.; Pietrzak, R. H., Posttraumatic stress disorder in the US veteran population: results from the National Health and Resilience in Veterans Study. *J Clin Psychiatry* 2014, 75, (12), 1338-46.

Wisco, B. E.; Marx, B. P.; Miller, M. W.; Wolf, E. J.; Mota, N. P.; Krystal, J. H.; Southwick, S. M.; Pietrzak, R. H., Probable Posttraumatic Stress Disorder in the US Veteran Population According to DSM-5: Results From the National Health and Resilience in Veterans Study. *J Clin Psychiatry* 2016, 77, (11), 1503-1510.



Why EAS for Veterans?

- ▶ In my work as a VA psychiatrist...I realized...
 - ▶ Veterans were often getting better – but not achieving full remission of posttraumatic stress disorder symptoms
 - ▶ Many Veterans were not leading joyful and satisfying lives



Why EAS for Veterans?

- ▶ The research indicates that response to conventional treatments is limited by both:
 - ▶ Partial or no response
 - ▶ Underutilization

Marchand, W. R., Potential Mechanisms of Action and Outcomes of Equine-Assisted Services for Veterans with a History of Trauma: A Narrative Review of the Literature. *Int J Environ Res Public Health* 2023, 20, (14).



Why EAS for Veterans?

- ▶ One-third to one-half of Veterans receiving exposure-based treatments for PTSD demonstrate no clinically significant improvement
- ▶ One study found that among Veterans, only 23–40% of those screening positive for a probable mental health disorder had sought care
- ▶ Another study found that among veterans who had PTSD, only 23% initiated an evidence-based psychotherapy and of those who did, only 9% completed treatment.
- ▶ A study of pharmacology for PTSD reported that 35% discontinued treatment within 30 days and 72 % discontinued within 180 days.

Steenkamp, M. M.; Litz, B. T.; Hoge, C. W.; Marmar, C. R., Psychotherapy for Military-Related PTSD: A Review of Randomized Clinical Trials. *JAMA* 2015, 314, (5), 489-500.

Letica- Crepulja, M.; Stevanovic, A.; Protuder, M.; Grahovac Juretic, T.; Rebic, J.; Franciskovic, T., Complex PTSD among treatment-seeking veterans with PTSD. *Eur J Psychotraumatol* 2020, 11, (1), 1716593.

Maguen, S.; Li, Y.; Madden, E.; Seal, K. H.; Neylan, T. C.; Patterson, O. V.; DuVall, S. L.; Lujan, C.; Shiner, B., Factors associated with completing evidence-based psychotherapy for PTSD among veterans in a national healthcare system. *Psychiatry Res* 2019, 274, 112-128.



Why EAS for Veterans?

- Finally, conventional interventions may not address:
 - military sexual trauma (up to 15 % of female Veterans)
 - trauma-related guilt
 - moral injury
 - disruptions of attachment

Marchand, W. R., Potential Mechanisms of Action and Outcomes of Equine-Assisted Services for Veterans with a History of Trauma: A Narrative Review of the Literature. *Int J Environ Res Public Health* 2023, 20, (14).



Why EAS for Veterans?

- ▶ Thus, there is a need to develop novel interventions that may:
 - ▶ Enhance treatment engagement
 - ▶ Improve outcomes
- ▶ Equine-assisted services may have the potential to address both



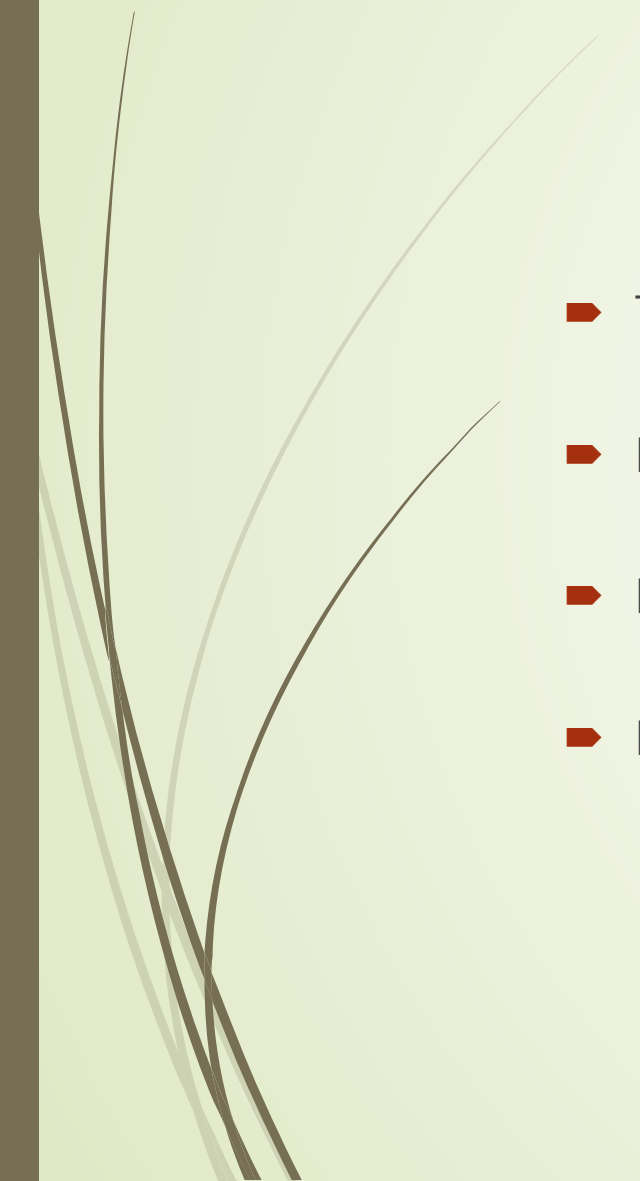
Why EAS for Veterans?

- ▶ Animal-assisted interventions (AAs) are being frequently used as complementary interventions for both civilian and military trauma survivors
- ▶ Equine-assisted services (EAS) is an umbrella term for a group of horse-related AAs aimed at providing benefits for human participants

Marchand, W. R., Potential Mechanisms of Action and Outcomes of Equine-Assisted Services for Veterans with a History of Trauma: A Narrative Review of the Literature. *Int J Environ Res Public Health* 2023, 20, (14).



Equine-assisted services

- ▶ Therapeutic/adaptive riding
 - ▶ Equine-assisted learning
 - ▶ Psychotherapy incorporating horses
 - ▶ Hippotherapy
- 



VA Whole Health

- ▶ Model of healthcare that focuses on health promotion, disease prevention, Veteran engagement and the use of complementary and integrative health



Live Whole Health.

VA Salt Lake City EAS Program





Horses Helping Veterans

- EAS program created as a collaboration between:
 - VA Salt Lake City Whole Health Service
 - VA Salt Lake City Mental Health Service
 - Community equine facility partners



Horses Helping Veterans

- ▶ Mission:
 - ▶ Provide PIH/EAL, horsemanship skills training and recreational riding to Veterans in the VA Salt Lake City Healthcare System catchment area
 - ▶ Focus PIH on suicide prevention, PTSD and substance use disorders
 - ▶ Conduct and publish research regarding the benefits of EAS for Veterans
 - ▶ Provide staff resiliency retreats for VA employees



Horses Helping Veterans

- ▶ Operational for over three years
- ▶ Provide psychotherapy incorporating horses services to Veterans
 - ▶ General outpatients
 - ▶ Residential substance abuse treatment
 - ▶ Military sexual trauma treatment
- ▶ Also have provided limited:
 - ▶ Trail rides for Veterans
 - ▶ Horsemanship skills training for Veterans
 - ▶ Staff resiliency retreats



Outcomes research

- ▶ EAS studies of non-Veteran populations
 - ▶ Benefits reported for a variety of psychiatric disorders
 - ▶ autism-spectrum disorders
 - ▶ schizophrenia-spectrum illness
 - ▶ social anxiety
 - ▶ attention-deficit/hyperactivity disorder
 - ▶ attachment disorders
 - ▶ depression

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Outcomes research

- ▶ EAS studies of non-Veteran populations with trauma exposure
 - ▶ reduced symptoms of depression among children
 - ▶ decreased anxiety, and externalizing behaviors
 - ▶ reductions in PTSD symptoms.
 - ▶ a meta-analysis of EAS for at-risk adolescents with trauma histories found a medium effect size for seven investigations

Marchand, W. R., Potential Mechanisms of Action and Outcomes of Equine-Assisted Services for Veterans with a History of Trauma: A Narrative Review of the Literature. *Int J Environ Res Public Health* 2023, 20, (14).



Outcomes research

- ▶ EAS studies of Veteran populations with trauma exposure
 - ▶ 23 studies in the literature
 - ▶ Of these, only three had a control group
 - ▶ Only one was a randomized trial
 - ▶ Also, one case study of a single Veteran

Marchand, W. R., Potential Mechanisms of Action and Outcomes of Equine-Assisted Services for Veterans with a History of Trauma: A Narrative Review of the Literature. *Int J Environ Res Public Health* 2023, 20, (14).



Outcomes research

- ▶ EAS studies of Veteran populations with trauma exposure
 - ▶ sample sizes range from five to eighty-nine veterans
 - ▶ the majority report quantitative data, but five report qualitative data or mixed methods
 - ▶ four studies report physiologic outcome measures
 - ▶ several report interventions that are manualized or structured to facilitate manual development.

Marchand, W. R., Potential Mechanisms of Action and Outcomes of Equine-Assisted Services for Veterans with a History of Trauma: A Narrative Review of the Literature. *Int J Environ Res Public Health* 2023, 20, (14).



Outcomes research

- ▶ Potential outcomes based upon the existing literature:
 - ▶ Transdiagnostic benefits
 - ▶ decrease arousal (HR, respiratory rate and BP)
 - ▶ Increased heart rate variability
 - ▶ Improved:
 - ▶ functioning
 - ▶ cognition
 - ▶ quality of life
 - ▶ wellbeing

Marchand, W. R., Potential Mechanisms of Action and Outcomes of Equine-Assisted Services for Veterans with a History of Trauma: A Narrative Review of the Literature. *Int J Environ Res Public Health* 2023, 20, (14).



Outcomes research

- ▶ Potential outcomes based upon the existing literature:
 - ▶ Symptom reduction
 - ▶ Improved affect and decreased depression
 - ▶ Enhanced psychological flexibility
 - ▶ Decreased anxiety
 - ▶ Decreased substance craving

Marchand, W. R., Potential Mechanisms of Action and Outcomes of Equine-Assisted Services for Veterans with a History of Trauma: A Narrative Review of the Literature. *Int J Environ Res Public Health* 2023, 20, (14).



Mechanisms of action research

- ▶ Potential mechanisms of action based upon the literature:
 - ▶ horse-human relationships, attachment, and bonding
 - ▶ enhancement of sense of control, autonomy, and assertiveness for participants
 - ▶ enhancement of Treatment engagement, and therapeutic alliance

Marchand, W. R., Potential Mechanisms of Action and Outcomes of Equine-Assisted Services for Veterans with a History of Trauma: A Narrative Review of the Literature. *Int J Environ Res Public Health* 2023, 20, (14).



Mechanisms of action research

- ▶ Potential mechanisms of action based upon the literature:
 - ▶ Emotional mirroring and heart rate synchronization
 - ▶ Self-distancing through metaphor
 - ▶ Psychological flexibility, biophilia, and mindfulness

Marchand, W. R., Potential Mechanisms of Action and Outcomes of Equine-Assisted Services for Veterans with a History of Trauma: A Narrative Review of the Literature. *Int J Environ Res Public Health* 2023, 20, (14).



Mechanisms of action research

- ▶ Potential mechanisms of action based upon the literature:
 - ▶ Decrease cortisol
 - ▶ Increased oxytocin
 - ▶ Increased HRV

Marchand, W. R., Potential Mechanisms of Action and Outcomes of Equine-Assisted Services for Veterans with a History of Trauma: A Narrative Review of the Literature. *Int J Environ Res Public Health* 2023, 20, (14).



Current state of the field

- ▶ Conclusions based upon the available literature:
 - ▶ Field is in the very early scientific development stage
 - ▶ EAS is likely beneficial for PTSD and may result in symptom reduction as well as trans-diagnostic benefits
 - ▶ Enough evidence to warrant large randomized controlled trials of EAS for PTSD
 - ▶ Many challenges must be overcome to facilitate moving the field forward with research
 - ▶ Currently, EAS interventions must be considered complimentary interventions


Marchand WR, Andersen SJ, Smith JE, Hoopes KH, Carlson JK. Equine-Assisted Activities and Therapies for Veterans With Posttraumatic Stress Disorder: Current State, Challenges and Future Directions. *Chronic Stress* (Thousand Oaks). Jan-Dec 2021



Current state of the field

- ▶ Limitations and challenges
 - ▶ Lack of standardized terminology
 - ▶ Lack of standardized interventions
 - ▶ Lack of rigorous studies
 - ▶ Mechanisms of action unclear


Marchand WR, Andersen SJ, Smith JE, Hoopes KH, Carlson JK. Equine-Assisted Activities and Therapies for Veterans With Posttraumatic Stress Disorder: Current State, Challenges and Future Directions. *Chronic Stress* (Thousand Oaks). Jan-Dec 2021



Research recommendations to move the field forward

- ▶ Study standardized interventions that can be manualized
- ▶ Randomized controlled trials
- ▶ Utilize psychologic outcome measures
- ▶ Careful management of many potential confounding variables, such as concurrent mental health treatment and psychiatric comorbidities

Marchand WR, Andersen SJ, Smith JE, Hoopes KH, Carlson JK. Equine-Assisted Activities and Therapies for Veterans With Posttraumatic Stress Disorder: Current State, Challenges and Future Directions. *Chronic Stress* (Thousand Oaks). Jan-Dec 2021



Development and evaluation of a novel EAS intervention for Veterans with trauma histories

- ▶ The remainder of the presentation will focus on the development of a novel mindfulness and self-compassion based psychotherapy incorporating horses intervention (Whispers with Horses) for Veterans with a history of trauma exposure



Development of the intervention

- ▶ Criteria for the intervention:
 - ▶ Evidence based to the extent possible
 - ▶ Addresses gaps in current mental health treatment for Veterans with trauma histories
 - ▶ Structured to facilitate:
 - ▶ Replication studies across multiple sites
 - ▶ Manualization and dissemination to the field if shown to be effective by rigorous studies



Gaps in conventional mental health treatment for veterans with trauma histories

- ▶ Partial or no response to conventional treatments
- ▶ Treatment resistance (lack of seeking and engagement)
- ▶ Lack of specific focus on MST, moral injury, guilt and healthy attachment

Marchand, W.R. Potential Mechanisms of Action and Outcomes of Equine-Assisted Services for Veterans with a History of Trauma: A Narrative Review of the Literature. *Int. J. Environ. Res. Public Health* 2023,20, 6377.

<https://doi.org/10.3390/ijerph20146377>

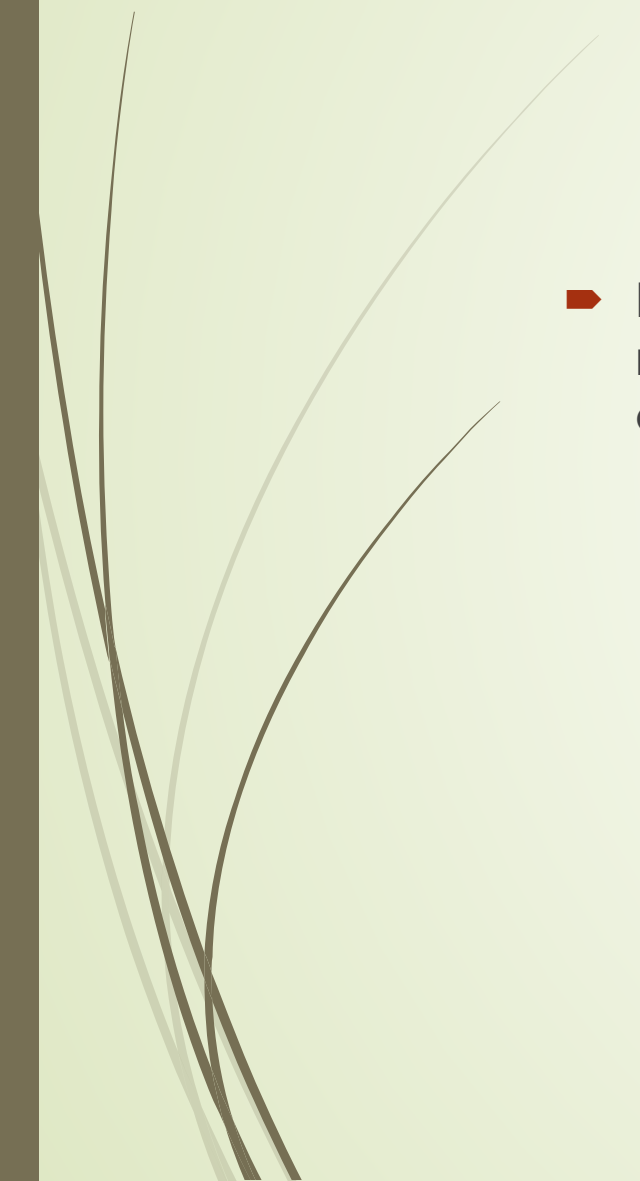



Treatment engagement

- ▶ Our studies suggest that participants find EAS to be enjoyable:
- ▶ Veteran study:
 - ▶ Marchand, W. R.; Smith, J.; Hoopes, K. H.; Osborne, M.; Andersen, S. J.; Bell, K.; Nazarenko, E.; Macneill, R.; Joubert, K., A pilot observational study of horsemanship skills training for Veterans with posttraumatic stress disorder. *Complement Ther Med* 2022, 102910.
- ▶ Non-veteran study:
 - ▶ Marchand, W. R.; Sullivan-Sakaeda, L., A pilot observational study of a psychotherapy incorporating equines resiliency intervention for staff at a large medical center. *Complement Ther Clin Pract* 2022, 49, 101660.



Treatment engagement

- ▶ Provide an opportunity for Veterans to learn, or enhance existing, mindfulness and self-compassion skills in a casual nonthreatening environment
- 



Outcomes - mindfulness

- ▶ Mindfulness-based
 - ▶ Non-judgmental awareness of the present moment...as opposed to mind wandering
 - ▶ Helps avoid maladaptive behaviors driven by emotional reactivity
 - ▶ Facilitates recognition of ruminative negative thought patterns
 - ▶ Allows recognition that much of our suffering is caused by our own mind and can be prevented



OUTCOMES - MINDFULNESS

- ▶ Limitations of mindfulness offered in traditional eight-week evidence-based programs
 - ▶ Some Veterans do not want to try it
 - ▶ Attrition is a significant issue
 - ▶ Many Veterans find it difficult to practice regularly

Marchand WR, Yabko B, Herrmann T, Curtis H, Lackner R (2019). Treatment Engagement and Outcomes of Mindfulness-Based Cognitive Therapy for Veterans with Psychiatric Disorders. *J Altern Complement Med*, 25(9), 902-909.



OUTCOMES - MINDFULNESS

- ▶ However, there is evidence of benefits of mindfulness for Veterans:
- ▶ Our studies:

Marchand, W. R.; Klinger, W.; Block, K.; VerMerris, S.; Herrmann, T. S.; Johnson, C.; Paradiso, N.; Scott, M.; Yabko, B., Mindfulness Training plus Nature Exposure for Veterans with Psychiatric and Substance Use Disorders: A Model Intervention. *Int J Environ Res Public Health* 2019, 16, (23).

Marchand, W. R.; Klinger, W.; Block, K.; VerMerris, S.; Nazarenko, E.; Curtis, H.; Newton, J.; Herrmann, T. S.; Yabko, B.; Lane, J., Mindfulness-based Therapeutic Sailing for Veterans With Psychiatric and Substance Use Disorders. *Mil Med* 2021.

Marchand WR, Yabko B, Herrmann T, Curtis H, Lackner R (2019). Treatment Engagement and Outcomes of Mindfulness-Based Cognitive Therapy for Veterans with Psychiatric Disorders. *J Altern Complement Med*, 25(9), 902-909.




OUTCOMES - MINDFULNESS

- ▶ However, there is evidence of benefits of mindfulness for Veterans:
- ▶ The literature:

Marchand, W. R.; Sandoval, K.; Lackner, R.; Parker, S. C.; Herrmann, T.; Yabko, B.; Velasquez, T.; Lewis, L.; Butler, J., Mindfulness-based interventions for military veterans: A systematic review and analysis of the literature. *Complement Ther Clin Pract* 2021, 42, 101274.



OUTCOMES - SELF-COMPASSION

- ▶ Self-compassion is simply treating ourselves with kindness and compassion – just as we would a good friend or loved one
 - ▶ Self-compassion helps us recognize that we are imperfect humans who make mistakes and that we can practice self-forgiveness
 - ▶ This is especially important for Veterans who have made serious mistakes in life as a result of psychiatric illness and/or addiction
 - ▶ Lastly, self-compassion is very important for healing from moral injury, defined as “the strong cognitive and emotional response that can occur following events that violate a person's moral or ethical code,” which often occurs as a result of military service
- 




Whispers with horses

- ▶ Program was developed to:
 - ▶ Make mindfulness and self-compassion training accessible to Veterans by delivering it in a fun and casual setting
 - ▶ Provide the opportunity to practice mindfulness and self-compassion in a real-world setting, in an arena with an equine
 - ▶ Enhance healing and recovery through the synergistic effects of mindfulness and self-compassion combined with the benefits of horse-human interactions
 - ▶ Serve as a complementary intervention to be used in conjunction with traditional psychotherapy and psychopharmacology
 - ▶ Ultimately disseminated to the field as a manualized intervention, if shown to be effective by rigorous studies



Whispers with horses

- ▶ Six-session intervention
 - ▶ Provided in group (90-minute sessions) or individual (60-minute sessions) format
 - ▶ Facilitated by one mental health professional and one equine specialist
 - ▶ For group therapy – no more than two participants per equine
 - ▶ Participants work with the same equine each time (if possible)
 - ▶ Strong focus on development of horse-human communication and relationship
- 



Whispers with horses

- ▶ Session structure
 - ▶ All six sessions follow the same general structure
 - ▶ Opening “check-in with the self” mindfulness/self-compassion meditation
 - ▶ Discussion of concepts
 - ▶ Mindfulness and self-compassion
 - ▶ Horse behavior and communication
 - ▶ Arena time with equine
 - ▶ Closing discussion and mindfulness/self-compassion meditation

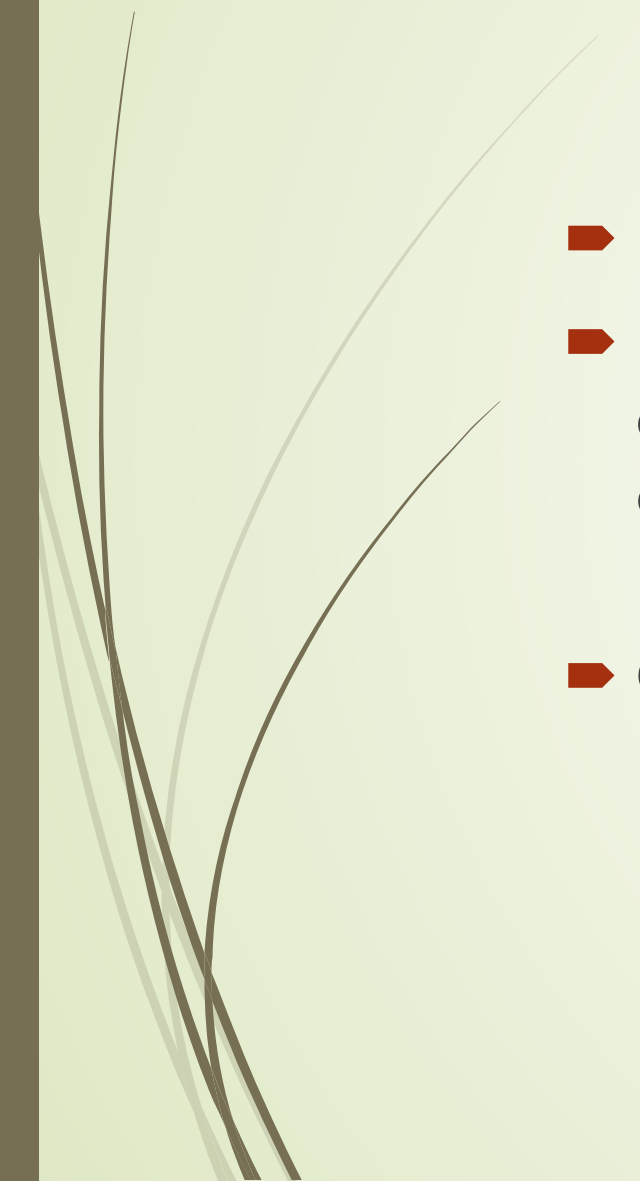


Whispers with horses

- ▶ Arena work with equines
 - ▶ Session 1 – grooming
 - ▶ Session 2 – grooming and easy leading
 - ▶ Sessions 3 through 6 - grooming and more advanced leading and groundwork



Initial pilot study

- ▶ Data collected from August 2021 – March 2022
 - ▶ Locations were the National Ability Center (indoor and outdoor arena) and Rebel Soul Wranglers Horse Ranch and Training School (outdoor arena) both in the Salt Lake City, Utah area.
 - ▶ One to four horses per session
- 



Initial pilot study

- ▶ Psychological instruments administered:
 - ▶ PTSD Checklist for DSM 5 (PCL-V)
 - ▶ Patient Health Questionnaire 9 (PHQ-9)
 - ▶ Positive and Negative Affect Scale (PANAS)
 - ▶ Acceptance and Action Questionnaire II (AAQ-II)
 - ▶ Physical Activity Enjoyment Scale (PACES).



Initial pilot study

- ▶ Data analyses:

- ▶ Paired-samples t-tests were used to assess pre-treatment to post-treatment changes in clinical measures with two time points
- ▶ Repeated measures ANOVA were used to assess pre- to post-session measures with three time points
- ▶ Independent samples t-test were used to determine whether any categorical demographic variables were associated with pre-intervention clinical outcome measures, as well as number of sessions completed
- ▶ Correlational analyses were conducted using Pearson bivariate correlation and ANCOVAs



Initial pilot study - results

- ▶ Participants:
 - ▶ 33 unique Veterans
 - ▶ 17 males and 16 females (52% male)
 - ▶ Mean age of 46 years-old
 - ▶ Most (73%) had PTSD, all had trauma histories
 - ▶ Many had MST, addictive and other psychiatric disorders
 - ▶ 20 were in group and 13 in individual therapy



Initial pilot study - results

➤ Safety:

- There were no injuries or close calls for participants, staff, or equines
- There were no pre- to post-session increases of negative or decreases of positive affect suggestive of emotional distress



Initial pilot study - results

- ▶ Utilization and treatment engagement:
 - ▶ Twenty (60.6%) enrolled in group and 13 (39.4%) in individual therapy.
 - ▶ An average of 3.8 (SD = 1.8) sessions were attended
 - ▶ Over-half of participants (n = 19; 57.6%) completing 4 or more sessions
 - ▶ Eight participants (24.2%) completing all 6 sessions
 - ▶ Four (12.1%) participants completed only 1 session



Initial pilot study - results

- Utilization and treatment engagement:
 - Correlational analyses indicated that diagnostic and demographic variables did not predict treatment engagement
 - The type of session (group vs. individual) was also not related to number of sessions completed.



Initial pilot study - results

- Utilization and treatment engagement:
 - The mean PACES score for all timepoints together was 110.44 (SD= 15.55), with a range of 69–126 indicating Veterans generally considered the intervention to be enjoyable.



Initial pilot study - results

- Psychological instruments:
 - Pre- to post-session outcomes (sessions one, three and six):
 - There was a significant ($p = 0.015$) reduction in AAQ-II scores from pre- to post- for session one only.
 - PANAS positive affect scale scores increased significantly on sessions one ($p = 0.009$) and three ($p = 0.010$)
 - Scores on the negative affect scale of the PANAS decreased for sessions one ($p = 0.001$) and three ($p = 0.009$)



Initial pilot study - results

- Covariate and correlational analyses;
 - There was no interaction effect of gender, individual versus group therapy, or diagnoses of PTSD, MDD, chronic pain, or MST on either depression or psychological flexibility outcomes
 - The percentage of an individual's service connection did not predict the number of sessions completed




Initial pilot study - results

- Psychological instruments:
 - Pre- to post-intervention outcomes:
 - There was a significant reduction in PHQ ($p = 0.003$) and AAQ-II ($p = 0.005$) scores
 - There were no statistically significant changes in PCL-M or PANAS scores

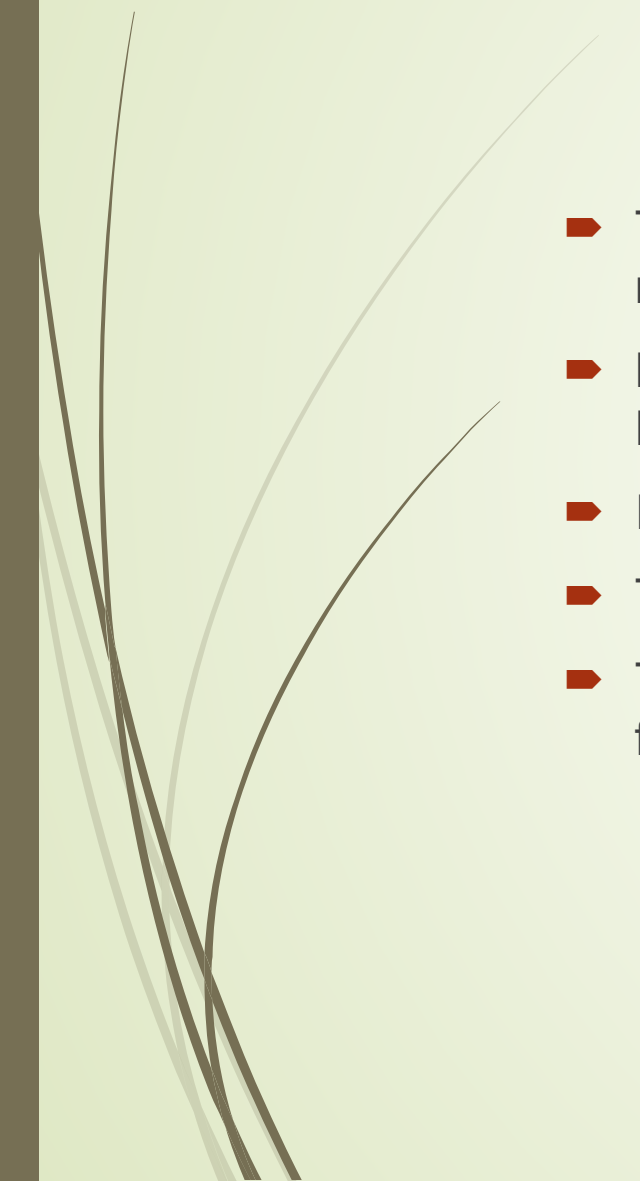


Initial pilot study - limitations

- ▶ The sample size was small
 - ▶ It was an uncontrolled study, therefore, cause and effect relationships were not demonstrated
 - ▶ Selection bias is a concern due to the lack of randomization
- 



Initial pilot study - conclusions

- The overarching aim of this investigation was achieved, which was to pilot test a novel PIH intervention
 - Mindfulness and self-compassion training can be successfully incorporated into a PIH intervention
 - It is feasible and safe to use this intervention for Veterans
 - The intervention can be utilized as either group or individual therapy
 - The intervention may result in decreased depression and enhanced psychological flexibility
- 



Next steps

- Continue to refine the basic intervention
- Refine and evaluate more advanced level 2 and 3 interventions
- Incorporate mounted activity in levels 2 and/or 3



Next steps

- ▶ fNIRS/HRV study of intervention components
- ▶ Collect other physiological data, horse and human HRV, cortisol and possibly oxytocin
- ▶ Collect additional utilization data from a larger sample
- ▶ Randomized controlled trial



Publication

- Marchand, W. R.; Lackner, R.; Hartquist, A.; Finnell, L.; Nazarenko, E., Evaluation of a mindfulness and self-compassion-based psychotherapy incorporating horses for Veterans who have experienced trauma. *Complement Ther Med* 2023, 72, 102914.



VA Salt Lake City EAS Publications

- ▶ Marchand, W. R.; Smith, J.; Hoopes, K. H.; Osborne, M.; Andersen, S. J.; Bell, K.; Nazarenko, E.; Macneill, R.; Joubert, K., A pilot observational study of horsemanship skills training for Veterans with posttraumatic stress disorder. *Complement Ther Med* 2022, 102910.
- ▶ Marchand, W. R.; Sullivan-Sakaeda, L., A pilot observational study of a psychotherapy incorporating equines resiliency intervention for staff at a large medical center. *Complement Ther Clin Pract* 2022, 49, 101660.
- ▶ Marchand, W. R.; Lackner, R.; Hartquist, A.; Finnell, L.; Nazarenko, E., Evaluation of a mindfulness and self-compassion-based psychotherapy incorporating horses for Veterans who have experienced trauma. *Complement Ther Med* 2023, 72, 102914.
- ▶ Marchand, W. R.; Andersen, S. J.; Smith, J. E.; Hoopes, K. H.; Carlson, J. K., Equine-Assisted Activities and Therapies for Veterans With Posttraumatic Stress Disorder: Current State, Challenges and Future Directions. *Chronic Stress (Thousand Oaks)* 2021, 5, 2470547021991556.
- ▶ Marchand, W. R.; Joubert, K.; Smith, J.; Nazarenko, E.; Klinger, W.; Sheppard, S.; Hoopes, K. H., A Pilot Observational Study of Implementing an Equine-Assisted Services Program Within a VA Medical Center Residential Substance Use Disorder Treatment Program. *Mil Med* 2022.



VA Salt lake City EAS Publications

- ▶ Hoopes, K. H.; Osborne, M.; Marchand, W. R.; Joubert, K.; Nazarenko, E.; Black, H.; Klinger, W.; Sheppard, S., A pilot observational study of recreational trail riding for Veterans with addictive disorders. *Complement Ther Med* 2022, 65, 102813.
- ▶ Marchand, W.R., Sullivan-Sakaeda, L., Lackner, R., Taplin, D., Nazarenko, E., A replication study of a psychotherapy incorporating horses resiliency intervention for healthcare workers. *Complement Ther Med* 2023, 76, 102965
- ▶ Marchand, WR, Smith, J, Nazarenko, E, Joubert, K, Black, H, Osborne, M, Andersen, S, Bell, K Baldwin, S, Klinger, W, Connelly, H, Sheppard, S, Hoopes, K. A pilot replication study of implementing an equine-assisted services program within a VA residential substance use disorder treatment program. *Mil Med* (in press).
- ▶ Marchand, W.R. Potential Mechanisms of Action and Outcomes of Equine-Assisted Services for Veterans with a History of Trauma: A Narrative Review of the Literature. *Int. J. Environ. Res. Public Health* 2023,20, 6377. <https://doi.org/10.3390/ijerph20146377>

Questions and discussion





The End

Contact information

- ▶ William (Bill) Marchand
 - ▶ william.marchand@va.gov
 - ▶ 801-582-1565 x 1847

