

# TWO STUDIES OF A PSYCHOTHERAPY INCORPORATING HORSES FOR HEALTHCARE WORKER WELLBEING

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# INTRODUCTION

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- William (Bill) Marchand, MD, LFAPA
  - Board certified psychiatrist
  - 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 and Adjunct Professor of Animal, Dairy and Veterinary Sciences, Utah State University.
  - Certified by PATH, Intl. as an Equine Specialist in Mental Health and Learning and certified by Eagala to provide Equine-assisted Psychotherapy
  - Mindfulness teacher and practitioner
  - Veteran of the Army and Air Force
  - Horse person
  - Mindful Horsemanship



# CO-AUTHORS

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- Laurie Sullivan-Sakaeda
- Ryan Lackner
- Dylan Taplin
- Elena Nazarenko

# ASK QUESTIONS AT ANY TIME

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# COLLABORATION


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- I am always interested in developing new research collaborations!
- My contact info will on the final slide.



# VA SALT LAKE CITY HEALTH CARE SYSTEM

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VA  U.S. Department of Veterans Affairs  
Veterans Health Administration  
VA Salt Lake City Health Care System

## HORSES HELPING VETERANS

**Equine Assisted Services for Veterans**  
Provided by the VA Salt Lake City Health Care System  
Whole Health and Mental Health Services

In collaboration with community partners: Utah State University Equine & Human Science, Ride Utah! Program, the National Ability Center, and Rebel Soul Wranglers Horse Ranch and Training School.

- ✓ Equine assisted psychotherapy is offered for outpatients and those Veterans enrolled in the residential substance abuse program and Warrior Renew.
- ✓ There may also be opportunities to participate in horsemanship skills training, Recreational Riding, And Research.

For more information or to learn about how to participate,  
Please Call **801-582-1565 ext.3025**

# HORSES HELPING VETERANS

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- EAS program created as a collaboration between:
  - VA Salt Lake City Whole Health Service
  - VA Salt Lake City Mental Health Service
  - Utah State University Equine and Human Sciences Program
  - Utah State University Extension, Ride Utah!
  - National Ability Center
  - A Helping Hoof
  - Rebel Soul Wranglers Horse Ranch and Training School

# HORSES HELPING VETERANS

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



# HORSES HELPING VETERANS

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- Staffing
  - Part-time VA staff representing the disciplines of social work, recreation therapy, psychology and psychiatry
  - Four E gala trained – one is also a PATH Intl. ESMHL
- Primary locations
  - Utah State University equine facility in Wellsville, Utah
  - National Ability Center, near Park City, Utah
  - Rebel Soul Wranglers Horse Ranch and Training School in Sandy, Utah

# HORSES HELPING VETERANS

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- Current/past offerings:
  - Individual and group PIH for Veteran outpatients
  - Group PIH/EAL sessions for Veteran residential substance abuse patients
  - PIH/EAL sessions for Veterans who have experienced military sexual trauma
  - Group Horsemanship Skills Training for Veterans at Utah State University
  - Group Trail Rides for Veterans through Utah State University Extension, Ride Utah!
  - Staff resiliency EAL one-half day retreats with A Helping Hoof

# INTERVENTION

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- One-session intervention
- Provided in group format over four hours
- Facilitated by one mental health professional (psychologist) and one PATH Intl. Equine Specialist in Mental Health and Learning (who was also a mental health professional)

# INTERVENTION

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- The intervention was provided at a community equine facility, located about a 60-minute drive from the medical center
- Intervention activities were chosen to help participants enhance skills to facilitate resilience and stress management
- For example, “Bucket Brushing-what’s in your bucket?” was aimed at helping participants to discover what was stressful in their occupational roles, as well as whether some of what is in the their “stress bucket” could be removed.

# INTERVENTION

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- The equines were a mix of mustangs and grade horses
- There was a one-to-one ratio of horses to participants

# INTERVENTION

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**Table 1**  
Resiliency retreat activities.

Activity name	Details
Haltering/leading a horse	Participants choose a horse and put on halter without instruction
Bucket Brushing-what's in your bucket?	Grooming equines while hold a weighted bucket
The Art of Lunging- step 1-who's moving who and do you know what your energy is saying?	Lunging with focus on energy
How do you talk to your horse? How do you talk to yourself?	Discussion regarding avoiding giving negative attributes to horses, such as "naughty," and avoiding negative self-talk.
Put your horse in a stall, using energy to direct movement	Guiding horse to a specific area without touching them
Lunging- step 2-Keeping pace with your horse	Additional lunging practice
The beginning of Liberty-developing a new level of connection with your horse	Liberty work – drawing and sending
Use all of your senses-who is your horse really?	Sight, sound, touch, and smell of a horse.
Closing thoughts and observations	Closing discussion

# THE STUDIES

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- Two separate published studies of the same intervention
- Data collected over two consecutive summers

# STUDY I

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- 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.



# METHODS

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- Data was collected during the summer of 2021
- Four separate sessions of the intervention were provided (individuals attended only one session)
- Study recruitment occurred by way of flyers sent out through facility-wide e-mail announcements to approximately 2900 VA medical center employees

# METHODS

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- Four psychological instruments were administered anonymously before and/or after each session.
  - The PROMIS Global Short Form (PGSF) was administered prior to the intervention to evaluate participants' perceptions of their current physical and mental health.
  - The Physical Activity Enjoyment Scale (PACES) was administered after each session to evaluate how much the participants enjoyed each session.
  - The Client Satisfaction Questionnaire (CSQ-8) was administered after each session to evaluate participants' satisfaction with the intervention
  - To evaluate changes in psychological flexibility, the Acceptance and Action Questionnaire II (AAQ-II) administered before and after each session

# METHODS

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- Statistical analyses were conducted using Microsoft Excel for Mac, version 16.58
- A within-subjects paired, two-tailed *t*-test was used for pre-to post-intervention comparisons of the AAQII scores
- Cohen's *d* was calculated to estimate the effect size of the pre-to post-intervention change in scores
- Results were considered statistically significant for *p* values of  $\leq 0.05$ .

# METHODS

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- This study was approved by two required committees: the University of Utah Institutional Review Board (IRB) and the VA Salt Lake City Health Care System Research and Development Committee.

# RESULTS

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- Sixty-one individuals responded to the recruitment e-mails expressing interest, which was a response rate of 0.02%
- Among the respondents, 37 (61%) attended an intervention
- The participants were a sample of 37 clinical and administrative staff employed at a large Veterans Healthcare Administration medical center
- There were 34 females and 3 males
- Age ranges were 6 in the 25–34 range, 14 in the 35–44 range, 6 in the 45–54 range, and 11 in the 55–64 range
- Twenty-one reported their occupation as clinical, while 11 reported working in nonclinical settings

# RESULTS

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- Safety and utilization:
  - No injuries occurred, and there were no events that would have been likely to cause serious injury to humans or horses
  - All participant slots were initially filled for each session; however, there were some last-minute cancelations and no-shows
  - Over the course of the four sessions, a total of 36 unique individuals attended, and thus 75% of the available slots were utilized

# RESULTS

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- Psychological instruments:
  - The PGSF provided information about the participants' perceptions of their physical and mental health immediately prior to the intervention
  - Results revealed mean pre-intervention T. scores of 50.9 for physical health and 47.0 for mental health, which was within the range of what would be expected in the general population.

# RESULTS

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- Psychological instruments:
  - The PACES and CSQ-8 provided information about participants' perceptions of the intervention
  - Mean scores were 120.0 for the PACES and 30.3 for the CSQ-8, which indicated high levels of enjoyment of, and satisfaction with, the intervention, respectively.



# RESULTS

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- Psychological instruments:
  - The AAQII mean scores were 19.3 (SD = 7.5) and 17.0 (SD = 7.5) pre- and post-intervention, respectively, which represented a statistically significant ( $p = 0.02$ ) decrease in scores
  - This indicated a short-term increase in participants' psychological flexibility. However, the effect size was small ( $d = 3.1$ )

## STUDY 2

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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

# METHODS

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- Data was collected during the summer of 2022
- Six separate sessions of the intervention were provided (individuals attended only one session)
- Study recruitment occurred by way of flyers sent out through facility-wide e-mail announcements to approximately 2900 VA medical center employees

# METHODS

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- Three psychological instruments were administered anonymously before and after each session.
  - To evaluate changes in psychological flexibility, the Acceptance and Action Questionnaire II (AAQ-II) administered before and after each session
  - The Positive and Negative Affect Scale (PANAS) was used to measure short-term changes in affect
  - The Conner-Davidson Resiliency Scale (CD-RISC-25) was used to measure resiliency

# METHODS

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- Paired sample t-tests were used to evaluate pre- to post-intervention changes in clinical measures
- Analysis of covariance (ANCOVA) was used to determine any influence of categorical demographic variables on clinical outcome measures
- Pearson bivariate correlation analyses were used to explore relationships between clinical measures.
- Effect sizes were calculated for all significant statistical tests

# METHODS

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- This study was approved by two required committees: the University of Utah Institutional Review Board (IRB) and the VA Salt Lake City Health Care System Research and Development Committee.

# RESULTS

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- Thirty-eight subjects participated in the study
- The majority were female ( $n = 27$ ; 71 %)
- The age group with the most representation were those ranging from age 25–34 ( $n = 10$ ; 26 %)

# RESULTS

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**Table 2**  
Sample characteristics ( $n = 38$ ).

Demographic	n (%)
Gender	
Female	27 (71.1)
Male	11 (28.9)
Age	
25–34	10 (26.3)
35–44	9 (23.7)
45–54	8 (21.1)
55–64	7 (18.4)
65–74	3 (7.9)
Prior military service	
Veteran	7 (18.4)
Non-Veteran	30 (78.9)
VA Position	
Employee	36 (94.7)
Student/resident/intern	2 (5.3)
Job Category	
Clinical	22 (57.9)
Research	2 (5.3)
Administrative	5 (13.2)
Clinical and administrative	6 (15.8)
Clinical and research	1 (2.6)



# RESULTS

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- Safety:
  - No injuries occurred, and there were no events that would have been likely to cause serious injury to humans or horses

# RESULTS

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- Utilization:
  - Fifty-one subjects enrolled in the intervention
  - Thirty-eight attended (74.51 %), 7 canceled (13.73 %), and 6 no showed (11.76 %)
  - For any given session, attendance ranged from 66.67 % to 100 %
  - Each retreat could accommodate up to 12 participants, however the mean number of attendees was 5.3 (range 3 – 11)

# RESULTS

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- Pre- to post-intervention psychological instruments:
  - Paired-samples t-tests revealed a significant increase in PANAS positive affect scores ( $p = .001$ ), as well as significant decreases in PANAS negative affect ( $p = .010$ ) scores
  - There was also a significant decrease in AAQ-II scores ( $p = .022$ )
  - Scores on the CD-RISC-25 did not change significantly pre- to post-intervention ( $p = .240$ ).

# RESULTS

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- Pre- to post-intervention psychological instruments:
  - Demographic variables did not predict changes in PANAS or AAQII scores
  - There was no association between post-intervention PANAS and AAQII scores

# LIMITATIONS OF BOTH STUDIES

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- The sample size was small for both studies
- Both were uncontrolled studies, therefore, cause and effect relationships were not demonstrated
- Selection bias for both is a concern due to the lack of randomization

# DISCUSSION AND CONCLUSIONS

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- PIH resiliency interventions appear to have a low risk of causing adverse effects for participants, staff and equines
- PIH resiliency interventions are feasible to implement, however study 2 revealed only modest utilization

# DISCUSSION AND CONCLUSIONS

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- The study that assessed for participant enjoyment and satisfaction found evidence supporting both
- The second study found evidence of short-term improvement in affect but no change in resilience

# DISCUSSION AND CONCLUSIONS

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- Both studies found short-term decreases in AAQII scores, which indicates enhanced psychological flexibility
- Psychological flexibility is the ability to vary one's responses in a contextually dependent manner to correctly meet situational stresses
- Regarding affect, it refers to the capability to match one's emotional experience correctly to situational cues
- Lastly, it is closely related to both mindfulness and resiliency



# DISCUSSION AND CONCLUSIONS

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- In our other EAS studies that measured psychological flexibility, we also found increases
  - Marchand WR, Smith J, Hoopes KH, et al. A pilot observational study of horsemanship skills training for Veterans with posttraumatic stress disorder. *Complement Ther Med.* 2022, 102910. 33
  - Marchand WR, 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.

# DISCUSSION AND CONCLUSIONS

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- Similarly, in our studies of nature exposure for Veterans, that did not involve equines, we found enhanced psychological flexibility
  - Marchand WR, Klinger W, Block K, et al. Safety and psychological impact of sailing adventure therapy among veterans with substance use disorders. *Complement Ther Med.* 2018;40:42–47. 52
  - Marchand WR, Klinger W, Block K, et al. Mindfulness-based therapeutic sailing for veterans with psychiatric and substance use disorders. *Mil Med.* 2021.

# DISCUSSION AND CONCLUSIONS

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- We hypothesize that enhancement of psychological flexibility may be an important mechanism of benefit in EAS and other nature exposure interventions

# NEXT STEPS

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- Randomized controlled trials
- Cost-benefit studies
- Further exploration of the possible role of psychological flexibility in EAS interventions
- Physiologic studies

# VA SALT LAKE CITY EAS PUBLICATIONS

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- 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

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- 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

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THE END



# CONTACT INFORMATION

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