



HORSES FOR
MENTAL HEALTH

The Evidence Behind Mental Health & Well- Being Services Incorporating Horses

A Summary of Peer-Reviewed Research

August 2024



OVERVIEW

Many of us have seen heartwarming stories and anecdotes in the media or heard personal stories from family and friends of the benefits of interacting with horses. A frequent question involves the **scientific merit** of having horses involved in mental health services and how they might **improve the quality of life** of those involved.

The following is a collection of papers presenting research on a **variety of populations and programs** that **incorporate horses into mental health treatment and/or wellness services**. Each listing provides a hyperlink to the full article. While some papers are considered "open access" and are free, others may require a fee for purchase of the full article.

This document is not meant to represent a comprehensive literature review or specific search parameters. Rather, the intent is to provide **a sample of peer-reviewed published journal articles** to assist those **interested in learning more** about the topic and to **support services** incorporating horses for mental health and well-being.

The **80 articles** presented here have been **published in scholarly journals** where the articles are written by experts and the manuscripts are reviewed by several other professionals in the field before the article is published. This ensures the quality of the publication and makes it more likely that the article is **scientifically valid**.

In the present literature list, **there are several papers that present results from "pilot studies"**. A pilot study is a small-scale preliminary investigation designed to assess feasibility and refine the study design before launching a full-scale study. It helps determine if a larger study is worthwhile and guides decisions on the sample size needed to detect significant effects. **Results from a pilot study need replication on a larger scale to draw firm conclusions** regarding the efficacy and effectiveness of a specific treatment.

The last section of the document includes recent **Reviews and meta-analysis papers** in the field. Systematic reviews follow a structured and rigorous methodology to identify, evaluate, and synthesize all relevant studies on a specific question or topic. Systematic reviews often include a meta-analysis, which is a statistical technique used to combine and analyze data from multiple studies on the same topic to obtain a more precise estimate of the effect or relationship being investigated. Literature reviews thus compile and summarize existing research on a given topic, and are **an essential tool for synthesizing knowledge, advancing scholarship, and guiding future research**.

Search engines = PubMed/Google Scholar/Google

Key words = Equine assisted intervention/Equine facilitated psychotherapy/Equine assisted learning

Outcome Category = Psychiatric/mental health

Table of Contents

03

SUBSTANCE USE DISORDER
5 PAPERS

24

STUDENT/STAFF WELLNESS
POPULATIONS
5 PAPERS

41

PSYCHIATRIC DISORDERS & CLINICAL
APPLICATIONS
17 PAPERS

56

REVIEWS
8 PAPERS

10

CHILD/ADOLESCENT POPULATIONS
24 PAPERS

28

MILITARY POPULATIONS
17 PAPERS

52

AGING POPULATIONS
4 PAPERS



SUBSTANCE USE DISORDER

01

Adams, C., et al. (2015). The Helping Horse: How Equine Assisted Learning Contributes to the Wellbeing of First Nations Youth in Treatment for Volatile Substance Misuse. *Hum Anim Interact Bull* 1, 52-75.

<https://pubmed.ncbi.nlm.nih.gov/26793794/>

ABSTRACT: There has been recent interest in Canada exploring the benefits of equine assisted interventions in the treatment of First Nations youth who misuse volatile substances. Using the richness of an exploratory case study involving the White Buffalo Youth Inhalant Treatment Centre and the Cartier Equine Learning Center, our community-based study examined the question of how an Equine Assisted Learning (EAL) program contributes to the wellbeing of First Nations female youth who misuse volatile substances. Both programs are grounded in a holistic bio-psycho-social-spiritual framework of healing. Our study shares how the EAL horses, facilitators and program content contributed to youths' wellbeing in each area of the healing framework (bio-psycho-social-spiritual), with emphasis on the cultural significance of the horse and its helping role. The horse is a helper in the girls' journeys toward improved wellbeing- the horse helps through its very nature as a highly instinctive animal, it helps the facilitators do their jobs, and it also helps put the treatment program activities into practice. In addition, the role of First Nations culture in the girls' lives was enhanced through their encounters with the horses. The findings support the limited literature on equine assisted interventions and add important insights to the youth addictions treatment literature. Key implications to consider for EAL and volatile substance misuse policy, practice and research are identified.

02

Gatti, F., E. Walderhaug, A. Kern-Godal, J. Lysell, E. A. Arnevik (2020). Complementary horse-assisted therapy for substance use disorders: a randomized controlled trial. *Addict Sci Clin Pract* 15, 7 doi:10.1186/s13722-020-0183-z.

<https://ascjournal.biomedcentral.com/articles/10.1186/s13722-020-0183-z>

ABSTRACT: BACKGROUND: Treatment completion is the greatest challenge for the treatment of substance use disorders (SUDs). A previous investigation showed that complementary horse-assisted therapy (cCHAT) was associated with higher retention in treatment and completion than standard treatment alone. This randomized controlled trial further explored the benefits of cCHAT for patients with SUDs. METHODS: Fifty patients in residential SUD treatment at the Department of Addiction Treatment, Oslo University Hospital, were randomly allocated to either cCHAT (cCHAT group) or treatment as usual alone (TAU-only group). The primary end-point was treatment completion. Secondary end-points were dropout, transfer to another treatment, and time in treatment. RESULTS: The multinomial logistic regression analysis found no statistically significant association between intervention (cCHAT) and treatment outcome (completion, dropout, transferred) among the 37 participants who were ultimately recruited to the study. Some unforeseen challenges were encountered in the study: a high number of subjects transferred to another treatment, variable attendance at cCHAT sessions, and long temporary exits. Nevertheless, 44% of participants in the cCHAT group completed their

treatment, compared with 32% in the TAU- only group; this observation encourages further investigation in a larger sample. CONCLUSIONS: Though no association was identified between cCHAT and treatment retention or completion, our study may have been underpowered. Further work in a larger clinical population is needed; observational studies with repeated measures may also be useful for investigating whether cCHAT increases retention in treatment or rates of completion, two important factors for successful SUD treatment. Trial registration The trial was registered and approved on 14 October 2011 by the Regional Committee for Medical and Health Research Ethics with registration number 2011/1642 and registered at ClinicalTrials.gov on 21 February 2013 with registration number NCT01795755.

03

Holtcamp, K., Nicodemus, M. C., Phillips, T., Christiansen, D., Rude, B. J., Ryan, P. L., & Galarneau, K. (2024). The Effects of a Collegiate Recovery Community Psychotherapy Program Incorporating Equine Interaction during the COVID-19 Pandemic on Young Adults with Substance Abuse Disorder. *COVID*, 4(2), 151-169.

<https://www.mdpi.com/26738112/3/10/107#:~:text=Holtcamp%20K,%20Nicodemus%20MC,%20Phillips%20T,%20Christiansen%20D,%20Ruderal.com/articles/10.1186/s13722-020-0183-z>

ABSTRACT: While psychotherapy incorporating equine interaction (PIE) has proven to be a viable therapeutic intervention, it is not a common mental health service found on college campuses. Nevertheless, with the rise of mental health challenges on campuses after the COVID-19 pandemic, a need for effective therapeutic solutions is warranted. Therefore, the objective of this study was to determine the effect of a collegiate recovery community (CRC) PIE program for substance abuse disorder (SUD) compared to that of traditional cognitive behavioral therapy (CBT) and to determine whether physiological synchronization occurs between the human and horse during the therapy process. College-aged adults were recruited during the COVID-19 pandemic for two types of short-term SUD therapeutic interventions, CRC-PIE and CBT. Both groups completed a self-reporting survey assessing emotional safety. Vital signs measurements for human and horse participants within the CRC-PIE were collected prior to and after the first and last therapeutic sessions. Results concluded that although emotional safety did not improve significantly for PIE participants by the last therapy session ($p = 0.85$), emotional safety scores were significantly different between therapy types, with lower post-therapy scores for PIE ($p = 0.04$). As for physiological measures for PIE participants, respiratory rates (Human: $p = 0.01$; Horse: $p = 0.01$) and pain rating scores (Human: $p = 0.03$; Horse: $p = 0.01$) significantly decreased post-therapy and a strong positive correlation ($R = 0.73$, $R^2 = 0.53$) associated with vital signs was observed between humans and horses. This human-horse physiological synchronization during the therapeutic intervention suggests that the horse may be a viable tool within campus CRC programs for the development of therapeutic alliances within the therapy process

04

Machova, K., Jurickova, V., Kasparova, A., Petrova, K., Sladkova, B., & Svobodova, I. (2023). An evaluation of the effect of equine-facilitated psychotherapy on patients with substance use disorders. *PLoS One*, 18(6), e0286867.

<https://doi.org/10.1371/journal.pone.0286867>

ABSTRACT: Equine Facilitated Psychiatry and Psychology (EFPP) is a supportive non-pharmacological treatment program used in the treatment of patients with substance use disorder. The aim of this study was to evaluate a possible change in patient's health and health-related quality of life between the first and fourth session of the EFPP program using the Assessment of Quality of Life (AQoL) and the Health of the Nation Outcome Scales (HoNOS). The Human-Animal Interaction Scale (HAIS) and a 5-point Likert-type scale was used for an assessment of patient's mood in the experimental group. The study sample included 57 patients (39 in experimental group with EFPP and 18 without EFPP program) with substance use disorders hospitalized in the psychiatric hospital. Comparing the initial and final patients scores in the experimental group, there was a significant positive shift in three of the four domains of the HoNOS scale and in seven of the eight dimensions of the AQoL scale. HAIS significantly increased ($p < 0.001$) in time as well as patient's mood after every session and in long time perspective. Based on these results, we can assume that the EFPP might be one of the successful programs which may improve patient's mood and social interactions in substance use disorders.

05

Souilm, N. (2023). Equine-assisted therapy effectiveness in improving emotion regulation, self-efficacy, and perceived self-esteem of patients suffering from substance use disorders. *BMC Complement Med Ther*, 23(1), 363.

<https://doi.org/10.1186/s12906-023-04191-6>

ABSTRACT: Substance Use Disorders (SUD) is a universal overwhelming public health problem and is associated with other psychological and mental health ailments such as emotion regulation, perceived self-esteem, and self-efficacy problems. Complementary and alternative medicine may be beneficial. The aim of this study was to assess the effectiveness of equine-assisted therapy in improving emotion regulation, self-efficacy, and perceived self-esteem among patients suffering from substance use disorders. It was carried out using a randomized controlled trial design at Behman hospital, Cairo, Egypt. It included 100 patients suffering from SUD attending the setting, equally randomized into an intervention group to receive the equine assisted therapy and a control group to receive the regular care. Data were collected using a self-administered questionnaire with standardized tools for assessment of emotion regulation, General Self-Efficacy (GSE), and perceived self-esteem. The intervention group received weekly equine-assisted therapy sessions over 6 weeks in addition to their standard regular therapy. Patients in both groups had similar demographic and SUD characteristics, as well as baseline scores of reappraisals, suppression, GSE and perceived self-esteem. At post-intervention, the intervention group had significant improvements in all these scores in comparison with the

control group, as well as their baseline. The multivariate analysis identified the study intervention as a significant positive predictor of the reappraisal and GSE scores, and a negative predictor of the suppression and perceived self-esteem negative score. In conclusion, equine assisted-therapy as a complementary treatment in patients suffering from SUD is effective in improving their emotion regulation, self-efficacy, and perceived self-esteem. A wider use of this approach is recommended in SUD patients along with provision of needed facilities and resources, and training nurses in its administration. Further research is proposed to assess its long-term effectiveness. The clinical trial was registered in the "Clinical Trials.gov Protocol Registration and Results System (PRS);" registration number is (05632185/2022) and the full date of first registration is 10/11/2022.

CHILD & ADOLESCENT

01

Bachi, K., J. Terkel, M. Teichman (2012). Equine-facilitated psychotherapy for at-risk adolescents: the influence on self-image, self-control and trust. *Clin Child Psychol Psychiatry* 17, 298-312 doi:10.1177/1359104511404177.

<https://pubmed.ncbi.nlm.nih.gov/21757481/>

ABSTRACT: This article describes the theoretical-conceptual frame of equine-facilitated psychotherapy (EFP) for adolescents at-risk, the unique components of this intervention, and its implementation in an evaluation study. The study was conducted at a residential treatment facility for adolescents at-risk. We examined the outcomes of EFP on self-image, self-control, trust and general life satisfaction. Fourteen resident adolescents comprised the treatment group, and were compared with a matched group of 15 residents who did not receive EFP (control). The treatment comprised a weekly individual EFP session over a period of seven months. The study found a trend of positive change in all four research parameters within the treatment group. Additional indications of the intervention's positive influence were also found and are discussed.

02

Cagle-Holtcamp, K., M. C. Nicodemus, J. Parker, M. H. Dunlap (2019). Does Equine Assisted Learning Create Emotionally Safe Learning Environments for At-Risk Youth? *JYD* 14, 4 doi:10.5195/jyd.2019.727

<https://jyd.pitt.edu/ojs/jyd/article/view/19-14-04-RES-1>

ABSTRACT: Equine assisted learning (EAL) is a form of experiential learning that is quickly growing in interest within the educational community. A challenge with experiential learning programs for at-risk youth is creating an emotionally safe environment that opens up the participants to learning. Nevertheless, EAL has been credited with the development of life skills in youth that promote educational achievement, but research tracking the development of emotional safety and learning, specifically associated with programming dedicated to educating participants about the horse, is limited. Therefore, the objective of this study was to determine if EAL, with programming centered around equine education, will promote emotional safety and learning in at-risk youth. Youth labeled as at-risk participated in a 4-week EAL session focused on teaching participants horse behavior, management, handling, and riding, while incorporating the 4 themes of emotional safety (self-esteem, personal security, respect, and connectivity). To determine participant learning of the equine topics covered, a pre- and post-program test was given to each participant. Acquisition of the themes of emotional safety was tracked for each participant using weekly debriefing interviews. While this was the first time to perform this assessment protocol for evaluating learning and emotional safety in at-risk youth, the completion rate for both forms of assessment utilized in this study was 100%. Evaluation of debriefing interview answers and test scores from the equine knowledge questions showed improvement by the end of the session in both equine knowledge and emotional safety, particularly as it relates to personal security. These results suggest EAL, with programming directed towards educating the participant about the horse, promotes emotional safety and learning for at-risk youth.

03

Carlsson, C. (2017). Triads in Equine-Assisted Social Work Enhance Therapeutic Relationships with Self-Harming Adolescents. *Clin Soc Work J* 45, 320–331
doi:10.1007/s10615-016-0613-2.

<https://pubmed.ncbi.nlm.nih.gov/29187767/>

ABSTRACT: Despite an increasing number of studies, there is still a lack of knowledge about the unique features that underlie the process in equine assisted social work (EASW). This study aimed to reveal, through qualitative methods, the dyads within the triad that become stronger during the process of EASW, as well as the effect of the participation of the horse on the relationship between the counselor and client. Data were collected through in-depth interviews with nine female self-harming clients aged 15–21 years and eight staff members. The interviews, together with video-recorded human-horse interactions with three staff members and four clients were analyzed, resulting in additional issues answered by these three staff members and four clients in a second interview. Critical dialogues between patterns and fragmentations in the narratives and video-recordings, as well as a dialogue with the participants while they were viewing videos of their own EASW sessions, led to the conclusion that adding a horse qualitatively changes therapeutic relationships in EASW. The different triads consist of different liaisons between actors in the triad, giving rise to unique combinations. The quality of the relationships depends on both the staff and the clients' attachment orientations. Further research is needed to investigate how the degree of emotional connection to the horse affects the impact that horses have on triads in EASW.

04

Carlsson, I. M., Brautigam Ewe, M., Nymberg, P., & Jormfeldt, H. (2024). Building up bit by bit, parent's experiences of equine-assisted intervention among children and adolescents with mental illness: a grounded theory study. *Int J Qual Stud Health Well-being*, 19(1), 2354945. <https://doi.org/10.1080/17482631.2024.2354945>

ABSTRACT: BACKGROUND: Mental ill health among children and adolescents has increased worldwide. Mental health difficulties from a young age are associated with school absence and educational underachievement. A holistic perspective of treatments besides medical treatment is essential. Thus, there is a need for research regarding equine-assisted intervention (EAI). PURPOSE: The present study aimed to understand the outcomes of an equine-assisted intervention for children and adolescents with mental ill health from the perspectives of parents and close relatives. METHODS: This study used a qualitative research design informed by Charmaz's Grounded Theory, with a purposive sample including six in-depth interviews. RESULTS: The theory "building up bit by bit" was constructed, explaining the recognition that their children/adolescents were built up bit by bit and created a stronger self-identity. The participants referred to changes in the child's or adolescent's way of being and emotional regulation, which constituted building blocks leading to the child's or adolescent's (1.) increased Harmony, (2.) enhanced Self-identity, and (3.) improved Capability. CONCLUSION: Parents and close relatives experienced that their child or adolescent was built up bit by bit and gained a stronger foundation to stand on. This led to increased harmony in everyday life with stronger self-worth, better performance, and reduced school absenteeism.

05

Cheng, X., Qian, L., Fan, Y., Tang, Q., & Wu, H. (2023). The Effect of Equine-Assisted Activities in Children Aged 7–8 Years Inhibitory Control: An fNIRS Study. *J Integr Neurosci*, 22(4), 89. <https://doi.org/10.31083/j.jin2204089>

ABSTRACT: Inhibitory control (IC), an important component of executive function, plays an important role in the overall development of children and has not been better studied in the field of equine-assisted activity (EAA). Therefore, this study investigated the effects of EAA on IC and the underlying brain neural mechanisms in children aged 7–8 years. **METHODS:** Forty-eight healthy children aged 7–8 years from the Maple Leaf International School–Xi’an were randomly allocated to the equine-assisted activities group (EAAG) and control group (CG). The EAAG received 12 weeks of EAAG training from instructors at the MingLiu Horse Club while the CG continued their normal daily activities. The Flanker task was administered to both groups to assess IC pre- and post-intervention. Functional near-infrared spectroscopy (fNIRS) data were collected during the Flanker task to examine the underlying neural mechanisms. **RESULTS:** Our findings indicate that after 12 weeks of EAA, the EAAG performed significantly better on the Flanker tasks than the CG, with congruent and incongruent higher accuracy and faster reaction ($p < 0.01$). Importantly, fNIRS data analysis revealed increased oxyhemoglobin levels in the right dorsolateral prefrontal cortex (R-DLPFC) ($p < 0.05$) of the EAAG during the Flanker congruent task after the EAA intervention. **CONCLUSIONS:** Collectively, EAA demonstrated a positive impact on IC and could effectively activate R-DLPFC in children aged 7–8 years. Furthermore, it enhanced the activation of the brain regions related to IC and increased cognitive ability in children aged 7–8 years.

06

Coetzee, N., Boyce, S., & Masenge, A. (2022). The Role of the Eagala Model in Promoting Psychological Wellbeing in Adolescents: A Mixed-Methods Approach. *Society & Animals*, 1–23. doi:<https://doi.org/10.1163/15685306-bja10092>
<https://brill.com/view/journals/soan/aop/article-10.1163-15685306-bja10092/article-10.1163-15685306-bja10092.xml?rskey=slcq1v&result=1>

ABSTRACT: The aim of the study was to determine if the Eagala model, an equine-assisted intervention, would enhance the psychological wellbeing of adolescents living in a township in South Africa. An embedded mixed-methods research design with convenience sampling was used. Participants were randomly assigned to an experimental or control group. The experimental group participated in the Eagala intervention. The Ryff Scale of Psychological Wellbeing (RSPWB) was used to collect quantitative data while letters to the horses were used as qualitative data. Independent t-tests indicated significant differences between the two groups on the overall score of the RSPWB and five of its dimensions. Using thematic analysis, qualitative themes that enhanced understanding of the quantitative findings were identified. The results confirmed the effectiveness of the Eagala intervention. A Kruskal Wallis test, however, indicated that between four to eight sessions need to be attended in order for the intervention to be effective.

07

Coffin, J. (2019). The Nguudu Barndimanmanha Project-Improving Social and Emotional Wellbeing in Aboriginal Youth Through Equine Assisted Learning. *Front Public Health* 7, 278 doi:10.3389/fpubh.2019.00278
<https://pubmed.ncbi.nlm.nih.gov/31649910/>

ABSTRACT: Background: Recent statistics have painted a grim picture for Australia's Aboriginal youth, with reports of higher levels of almost every health indicator, including depression, sexual and emotional abuse, unemployment, and incarceration. Traditional western based therapies have proven to have limited effectiveness in engaging this group as they can often be culturally inappropriate. International studies have provided promising results using equine assisted learning, with a sound methodological basis underpinned by Indigenous ways of being and doing. In Australia Aboriginal people have strong historical ties to horses through their work on stations and were often considered some of the country's best horsemen and women. While equine assisted learning programs exist in Australia there are currently none catering specifically to Aboriginal youth, run and staffed by Aboriginal staff and provided in a culturally secure manner. Aims: Alternative therapy for Aboriginal youth in the areas of grief, loss, and trauma, through an equine assisted learning program that focussed on self-concept, self-regulation, self-awareness, anxiety and depression, and sense of connectedness. Methods: Participants (N = 270) aged 6-25 years old engaged in a minimum of 6-weeks of equine assisted learning. Each session was 45-50 min duration and occurred on a weekly basis. Sessions were undertaken individually, in pairs and in groups, depending on the needs of the participant and the focus of the session goals. Qualitative examination of the participants included photography to capture the lived experiences of the participants throughout the program. In addition an cultural and age appropriate adaptation of the Strength and Difficulties Questionnaire was trialed to track changes quantitatively. Conclusion: We observed improvements in self-regulation, self-awareness, and socialization skills, evident from the photography recording and the questionnaire data. In addition parent and/or caregiver and teacher reported changes in behavior, self-regulation, and socialization skills were recorded.

08

Dawson, S., et al. (2022). Equine-Assisted Therapy with Autism Spectrum Disorder in Serbia and the United States. *Therapeutic recreation journal* 56, 17-38
doi:10.18666/TRJ-2022-V56-I1-10387
<https://js.sagamorepub.com/trj/article/view/10387>

ABSTRACT: Adolescent and young adults with a diagnosed autism spectrum disorder (ASD) in the severe to moderate functioning range were recruited for this study in Serbia and the United States (U.S.). A total of ten participants, five from each respective country, participated in a 15-week equine-assisted therapy (EAT) intervention that utilized ground-based learning through a manualized program approach. The purpose of the study was to test the effects of a manualized 15-week EAT intervention on the social functioning of individuals with severe to moderate ASD across two cultures using a single subject research design. Nine out of 10 participants displayed improved social functioning over the course of the 15-week EAT intervention in both cultures.

09

Dunlop, K., M. Tsantefski (2018). A space of safety: Children's experience of equine-assisted group therapy. *Child & family social work* 23, 16–24 doi:10.1111/cfs.12378. <https://onlinelibrary.wiley.com/doi/abs/10.1111/cfs.12378>

ABSTRACT: Owing to a shift in alcohol and other drug practice towards a more ecological understanding of the impact of problematic parental substance use, children who were previously forgotten by practitioners are increasingly being included in alcohol and other drug service provision. Occurring concurrently with these changes has been a boom in interest in non-talk-based therapies to enhance child well-being. Examples of such therapeutic interventions include adventure-based activities, theatre, yoga, music, and purposeful interaction with animals. The latter approach, increasingly delivered by social workers, is known as animal-assisted therapy and involves the inclusion of animals in a goal-directed intervention. Equine-assisted therapy (EAT) is a specialised branch of animal-assisted therapy in which horses are used to cofacilitate therapeutic interventions. Although EAT practitioners argue horses are uniquely effective therapeutic animals, a strong evidence base has not yet developed. The present study utilised qualitative methods to explore children's individual experiences of an EAT program. Thematic analysis of interview data found that EAT is beneficial to children experiencing problematic parental substance use as it offers an environment in which children can feel safe and secure and are supported to grow, personally and socially, by mastering fears, making new friends, and improving their interpersonal behaviours.;Byline: Katie Dunlop, Menka Tsantefski Keywords: child therapy; groupwork; research with children; substance misuse (parental misuse and effects on children).

10

Frederick, K. E., J. Ivey Hatz, B. Lanning (2015). Not Just Horsing Around: The Impact of Equine-Assisted Learning on Levels of Hope and Depression in At-Risk Adolescents. *Community Ment Health J* 51, 809–17 doi:10.1007/s10597-015-9836-x. <https://pubmed.ncbi.nlm.nih.gov/25698076/>

ABSTRACT: Equine-assisted learning (EAL) is an experiential modality which utilizes horses to provide a unique learning experience for personal growth. Research by Damon et al. (*Appl Dev Sci* 7:119–128, 2003) suggests a positive relationship between hope and positive developmental trajectories. Hagen et al. (*Am J Orthopsychiatr* 75:211–219, 2005) showed hope to be a protective factor associated with adaptive functioning in at-risk youth. Ashby et al. (*J Couns Dev* 89:131–139, 2011) found a significant inverse relationship between hope and depression: as hope increases, depression decreases. The current study investigates the impact of a non-riding EAL curriculum entitled L.A.S.S.O. (Leading Adolescents to Successful School Outcomes) on levels of hope and depression in at-risk youth. The study uses an experimental design with longitudinal, repeated measures. Participants were randomly assigned to treatment and control groups. Participants in the treatment received 5 weeks of EAL, while participants in the control group received treatment as usual. Repeated measures ANOVA of participants' levels of hope and depression showed statistically significant improvements in the treatment group as compared with the control group. Even a brief (5-week) intervention of EAL had a positive impact on the lives and attitudes of at-risk adolescents, with increased levels of hope and decreased levels of depression.

Compiled for Horses for Mental Health (www.horsesformentalhealth.org) by Nerds for Herds (www.nerdsforherds.com), August 2024.

ABSTRACT: OBJECTIVE: To investigate clinical effects of equine-assisted activities and therapy (EAA/T) for treating attention-deficit/hyperactivity disorder (ADHD) in children age 6-13 years. METHODS: This 12-week, prospective, open-label trial included 24 sessions of EAA/T. Twenty participants (19 boys and 1 girl) completed 12 weeks of EAA/T. Various clinical tests were administered at baseline and after EAA/T. Assessments included the investigator-administered ADHD-Rating Scale (ARS-I), Clinical Global Impressions (CGI)-Severity Scale, Clinical Global Impressions-Improvement Scale (CGI-I), Gordon Diagnostic System, Korea-Child Behavior Checklist (K-CBCL), Self-Esteem Scale, second edition of the Bruininks-Oseretsky test of motor proficiency (BOT-2), and quantitative electroencephalography. The primary efficacy measure was the response rate. RESULTS: The response rate was 90% based on a 30% or greater decline in the ARS-I score or 85% based on CGI-I scores of 1 or 2. The mean \pm standard deviation ARS-I score decreased from 33.65 \pm 6.42 at baseline to 16.80 \pm 6.86 after 12 weeks of EAA/T ($p < 0.001$, paired t-test). EAA/T also resulted in significant improvement in the social problems subscale of the K-CBCL and in the manual dexterity, bilateral coordination, and total motor composite subscales of the BOT-2. The theta/beta ratio on electroencephalography was decreased significantly at the Pz electrode after 12 weeks of EAA/T. CONCLUSION: This is the first study demonstrating that EAA/T is effective for improving core ADHD symptoms. On the basis of these results, EAA/T could be a viable treatment strategy as a part of a multimodal therapy for children with ADHD.

ABSTRACT: OBJECTIVES: Internet gaming disorder (IGD) has been suggested to be a mental health disorder. Attachment and emotional status in IGD patients are important for understanding the etiology and progression of IGD because both parameters are considered to be associated with the affective network. Equine-assisted activities and therapies (EAAT) have been reported to improve emotional status and attachment in subjects. We hypothesized that EAAT would improve attachment in IGD adolescents with insecure attachment issues and increase functional connectivity (FC) within the affective network. DESIGN: Subjects completed a demographic questionnaire, the Korean Experiences in Close Relationships Scale Revised version (K-ECRS), the Child Depression Inventory, Young's Internet Addiction Scale, the Korean Attention-Deficit Hyperactivity Disorder Rating Scale, and resting state functional magnetic resonance imaging at baseline at the end of EAAT. SUBJECTS: Fifteen IGD adolescents with insecure attachment issues and 15 healthy comparison adolescents with secure attachment agreed to participate in this study. RESULTS: After 7 days of EAAT, K-ECRS avoidance and anxiety scores improved in all adolescents. K-ECRS avoidance scores of the IGD group showed marked improvement compared with those of

the healthy group. In all participants, FC from the left amygdala to the left parahippocampal gyrus, left medial frontal gyrus, and left inferior frontal gyrus, as well as from the right amygdala to the left caudate, right claustrum, and left inferior frontal gyrus increased. In IGD adolescents, FC from the left amygdala to the left frontal orbital gyrus, as well as from the right amygdala to the right corpus callosum also increased. CONCLUSION: These findings suggested that EAAT improves attachment, which could lead to a decrease in the severity of IGD symptoms in IGD patients with insecure attachment issues. In addition, EAAT increases FC within the affective network, which was associated with attachment not only in healthy adolescents but also in adolescents with IGD.

13 Kemeny, B., Burk, S., Hutchins, D., & Gramlich, C. (2021). Therapeutic Riding or Mindfulness: Comparative Effectiveness of Two Recreational Therapy Interventions for Adolescents with Autism. *J Autism Dev Disord.*
<https://doi.org/10.1007/s10803-021-05136-z>

ABSTRACT: Therapeutic riding (THR) and HeartMath (HM) mindfulness-based interventions have promise for reducing stress in adolescents with autism spectrum disorder. In three 10-week periods, this study compared THR, HM, and control on salivary cortisol, self-reported stress, parent-reported social responsiveness, and heart-rate variability. This crossover design included 27 participants (12–21 years) randomly assigned to order of intervention. Findings suggest that HM and THR manualized protocols are equally beneficial in decreasing cortisol levels immediately following a session, but HM sessions had more impact on heart-rate variability. There was no significant effect on follow-up cortisol levels within a week after either intervention, but THR had more impact on decreasing some self-reported stressors.

14 KMueller, M. K., L. McCullough (2017). Effects of Equine-Facilitated Psychotherapy on Post-Traumatic Stress Symptoms in Youth. *Journal of child and family studies* 26, 1164–1172 doi:10.1007/s10826-016-0648-6.
<https://link.springer.com/article/10.1007/s10826-016-0648-6>

ABSTRACT: Equine-assisted therapy has become an increasingly popular complementary mental health treatment approach, but there is limited empirical research assessing the effectiveness of this practice. In particular, equine-facilitated psychotherapy has many potential benefits for the treatment of trauma in youth. The purpose of the proposed study was to investigate changes in levels of post-traumatic stress symptomatology and levels of the human-animal bond in children and adolescents ages 10–18 over the course of a 10-week equine-facilitated psychotherapy (EFP) intervention. Youth in the treatment group (n = 36) participated in 10 weekly two hour EFP sessions, and were compared on changes in post-traumatic stress symptoms with a control group of participants (n = 32) who continued to receive the already existing traditional therapeutic services provided by their treatment facility or outpatient therapist. Findings suggested a significant decrease in post-traumatic stress symptoms across the intervention for both the treatment and control

group, but the treatment group did not decrease significantly more than the control group. These findings suggest that EFP may be an effective additional treatment modality for post-traumatic stress symptoms, but there was no evidence from this initial study that EFP was significantly more effective than traditional office-based therapy. Further research and discussion of the relative benefits of EFP compared to traditional treatment modalities is warranted. Equine-assisted therapy has become an increasingly popular complementary mental health treatment approach, but there is limited empirical research assessing the effectiveness of this practice. In particular, equine-facilitated psychotherapy has many potential benefits for the treatment of trauma in youth. The purpose of the proposed study was to investigate changes in levels of post-traumatic stress symptomatology and levels of the human-animal bond in children and adolescents ages 10–18 over the course of a 10-week equine-facilitated psychotherapy (EFP) intervention. Youth in the treatment group (n = 36) participated in 10 weekly two hour EFP sessions, and were compared on changes in post-traumatic stress symptoms with a control group of participants (n = 32) who continued to receive the already existing traditional therapeutic services provided by their treatment facility or outpatient therapist. Findings suggested a significant decrease in post-traumatic stress symptoms across the intervention for both the treatment and control group, but the treatment group did not decrease significantly more than the control group. These findings suggest that EFP may be an effective additional treatment modality for post-traumatic stress symptoms, but there was no evidence from this initial study that EFP was significantly more effective than traditional office-based therapy. Further research and discussion of the relative benefits of EFP compared to traditional treatment modalities is warranted.

15

Naste, T. M., et al. (2018). Equine Facilitated Therapy for Complex Trauma (EFT-CT). *J Child Adolesc Trauma* 11, 289–303 doi:10.1007/s40653-017-0187-3.
<https://pubmed.ncbi.nlm.nih.gov/30220956/>

ABSTRACT: Emerging research suggests that Equine Facilitated Psychotherapy (EFP) may be beneficial for traumatized youth. In addition, complex trauma (i.e., multiple and/or prolonged developmentally adverse traumatic events which are typically interpersonal in nature) treatment research is still growing and there is a need for the development and examination of novel treatments for youth with complex trauma histories. The current article describes a promising EFP model for this population called Equine Facilitated Therapy for Complex Trauma (EFT-CT). EFT-CT embeds EFP practices within Attachment, Regulation and Competency (ARC), an extant evidence-based complex trauma treatment framework for children and adolescents. The authors provide three case studies using both observational data provided by clinicians, as well as longitudinal measures of psychosocial functioning, to illustrate the potential promise of EFT-CT. The article concludes with a discussion about implications for EFP treatment and research.

ABSTRACT: Multiple studies have investigated the positive effects of human-animal interactions and showed that animal-assisted activities can be successfully used to better human physical and mental health. Equine-assisted activities have also raised considerable attention within the field. Our research focuses on healthy students (aged 14–18) without deviations or special educational needs. We analyze the occurrence of behavior problems and prosocial behavior among adolescents who regularly have interactions with horses, and those who have no connection to horses at all. The subjects of our investigation completed the strengths and difficulties questionnaire (SDQ), and we use a 'quasi' 2 x 2 before-after control-impact design to analyze the data. Students studying equine-related vocations and students of other vocations are compared, at the beginning and at the end of their studies. Our results indicate that students of equine-related vocations are more helpful and empathetic, and have fewer behavior problems, than those studying other vocations. There is a negative correlation between prosocial behavior and behavior problems. The development of the prosocial behaviors of students with regular horse-human interactions is more remarkable than of those who have no connection to horses. With these results, we are going to confirm the hypothesis that equine-assisted activities correlate with positive behavioral traits among healthy adolescents.

ABSTRACT: There is growing evidence that promoting social competence in youth is an effective strategy to prevent mental, emotional, and behavioral disorders in adulthood. Research suggests that programs delivered in collaboration with schools are particularly effective when they target social and emotional skill building, utilize an interactive instructional style, provide opportunities for youth participation and self-direction, and include explicit attempts to enhance youth social competence. A relatively new but popular approach that incorporates these characteristics is human animal interaction, which can be implemented in educational settings. We report the results from a randomized clinical trial examining the effects of an 11-week equine facilitated learning (EFL) program on the social competence and behavior of 5th–8th grade children. Children (N = 131) were recruited through referral by school counselors and school-based recruitment and then screened for low social competence. Researchers randomly assigned children to an experimental (n = 53) or waitlisted control group (n = 60). Children in the experimental group participated in an 11-week EFL program consisting of once-weekly, 90-min sessions of individual and team-focused activities, whereas children in the control group served as a wait-listed control and participated 16 weeks later. Parents of children in both groups rated child social competence at pretest and posttest. Three independent raters observed and reported children's positive

and negative behavior using a validated checklist during each weekly session. Results indicated that program participation had a moderate treatment effect ($d = .55$) on social competence ($p = .02$) that was independent of pretest levels, age, gender, and referral status. Results showed that higher levels of program attendance predicted children's trajectories of observed positive ($\beta = .500$; $p = .003$) and negative behavior ($\beta = -.062$; $p < .001$) over the 11-week program.

18

Perkins, B. L. (2018). A Pilot Study Assessing the Effectiveness of Equine-Assisted Learning with Adolescents. *Journal of creativity in mental health* 13, 298–305 doi:10.1080/15401383.2018.1427168.

<https://www.tandfonline.com/doi/abs/10.1080/15401383.2018.1427168>

ABSTRACT: This study contains an observation of six female participants ($N = 6$) who completed 8 weeks of a psychoeducational life skills program. The program included psychoeducational sessions that covered life skills related to partnership, respect, boundaries, communication, emotional regulation, problem-solving, and teamwork followed by an Equine-Assisted Learning (EAL) session. A paired sample t-test was conducted to measure the effectiveness of the equine therapy program with the psychoeducation lesson. A mental health professional, equine specialist, and a ranch worker observed and scored participants' behaviors after each session. A paired-samples t-test was conducted after week 4 and week 7; the results indicated that participants showed improvement in communication, confidence, and respect scores. The participants demonstrated improvements with emotional regulation $t(11) = 2.862$, $p = .015$.

19

PPunzo, K., Skoglund, M., Carlsson, I. M., & Jormfeldt, H. (2022). Experiences of an Equine-Assisted Therapy Intervention among Children and Adolescents with Mental Illness in Sweden – A Nursing Perspective. *Issues Ment Health Nurs*, 43(12), 1080–1092.

<https://doi.org/10.1080/01612840.2022.2126571>

ABSTRACT: Mental illness among children and adolescents is increasing globally, and prescription of psychiatric drugs for children and adolescents with mental illness is increasing worldwide, including Sweden. Holistic health-promoting interventions have shown promising long-lasting significant health benefits in young individuals with mental illness, but holistic health-promoting mental health interventions are often disregarded due to a lack of systematic theory-based knowledge. Consequently, the lack of scientific knowledge thwarts implementation of equine-assisted therapy as an established intervention in mental health nursing for children and adolescents with mental illness. The purpose of the study was to better understand experiences of equine-assisted therapy among children and adolescents with mental illness. The study adopted an inductive approach and data was collected using photovoice methodology. Six young persons, 7–18 years of age, referred by a psychologist to the equine-assisted intervention due to mental health issues, were included in the study. Data was analyzed using qualitative content analysis. The results could be summarized by an overarching theme, a physical, emotional,

and social milieu for growth, consisting of three subcategories: feeling relief from everyday stress and anxiety; nurturing self-esteem in a mutual friendship; and strengthening self-reliance through synchronized interplay. The results indicate that equine-assisted therapy has essential values closely related to the goals of mental health nursing. Further research should strive to attain even gender distribution in study samples and focus on how equine-assisted therapy could be thoroughly integrated into established nursing intervention for children and adolescents with mental illness.

20

Roberts, H., N. Honzel (2020). The Effectiveness of Equine-Facilitated Psychotherapy in Adolescents with Serious Emotional Disturbances. *Anthrozoös* 33, 133-144
doi:10.1080/08927936.2020.1694317.

<https://psycnet.apa.org/record/2020-04491-009>

ABSTRACT: Adolescents with serious emotional disturbances (SED) are a particularly difficult population to treat owing to high comorbidity rates of anxiety, depression, post-traumatic stress, and behavioral conduct disorders. The current study compared the effectiveness of equine-facilitated psychotherapy (EFP) and traditional group therapy (TGT) on levels of positive and negative affect in adolescents with SED. We hypothesized that participants would have higher overall positive affect after EFP compared with TGT and that negative affect would be significantly lower after EFP compared with TGT. Adolescents with SED participated in EFP and TGT sessions once a week over an 8-week period in addition to normative treatment. The Positive and Negative Affect Scale was administered immediately before and after the sessions. Statistical analyses revealed that EFP was just as effective as TGT in increasing positive affect and decreasing negative affect. More importantly, participants had significantly higher positive affect before and after EFP compared with TGT. Even though positive affect scores improved in both therapies, participants arrived to and left EFP with significantly higher positive affect scores than those attending TGT. Owing to its effect on positive affect, EFP may be a beneficial alternative to traditional therapies for adolescents with SED.

21

Tan, V. X.-L., J. G. Simmonds (2017). Parent Perceptions of Psychosocial Outcomes of Equine-Assisted Interventions for Children with Autism Spectrum Disorder. *Journal of autism and developmental disorders* 48, 759-769 doi:10.1007/s10803-017-3399-3.

<https://pubmed.ncbi.nlm.nih.gov/29196865/>

ABSTRACT: This research explored parents' perceptions of the psychosocial outcomes of their children's experience of receiving equine-assisted interventions (EAI). Participants were the parents of six children (aged 3-14) diagnosed with autism spectrum disorder. Five semi-structured interviews were conducted and the transcript data was analysed using Interpretative phenomenological analysis. Four super-ordinate themes emerged from the analysis: (1) child's improved self-concept and enhanced emotional well-being, (2) child's improved self-regulatory ability, (3) social benefits for the child, and (4) unexpected outcomes. EAI was perceived by the parents as having several levels of psychosocial

benefits for their children. These benefits may also extend to parents and family through ecopsychological and “flow on” effects associated with the children’s involvement in EAI programs.

22

Tsantefski, M., L. Briggs, J. Griffiths, A. Tidyman (2017). An open trial of equine-assisted therapy for children exposed to problematic parental substance use. *Health Soc Care Community* 25, 1247-1256 doi:10.1111/hsc.12427. <https://pubmed.ncbi.nlm.nih.gov/28147452/>

ABSTRACT: Children exposed to problematic parental substance use (PPSU) often face a number of deleterious developmental outcomes, yet these children are less likely to become known to child protection and welfare services. Although there is a growing evidence base for equine-assisted therapy (EAT) as an effective treatment modality for atypically developing children and adolescents, scant research has explored the benefit of EAT for children exposed to PPSU. The current study is the first to explore the benefit of EAT for children exposed to PPSU in Victoria, Australia. Five 12-week EAT programmes were delivered from 2012 to 2015 with a total of 41 children (mean age of 10.26 years) taking part. Children's parents (n = 41) and schoolteachers (n = 31) completed the Strengths and Difficulties Questionnaire pre- and post-intervention. Parents reported that children's total difficult behaviour and emotional problems decreased following the 12-week EAT programme. In addition, parents and teachers observed a significant decrease in children's hyperactivity. The findings obtained highlight the benefit of EAT for children exposed to PPSU and thus, extends the existing evidence base for this treatment modality.

23

Wilson, K., M. Bultjens, M. Monfries, L. Karimi (2017). Equine-Assisted Psychotherapy for adolescents experiencing depression and/or anxiety: A therapist's perspective. *Clin Child Psychol Psychiatry* 22, 16-33 doi:10.1177/1359104515572379. <https://pubmed.ncbi.nlm.nih.gov/26668260/>

ABSTRACT: Animal-Assisted Interventions (AAs) are thought to overcome some of the limitations of traditional therapies as they do not rely exclusively on language as a medium for change. One such Animal-Assisted Therapy (AAT) approach involves horses as a therapeutic medium. Equine-Assisted Psychotherapy (EAP) comprises a collaborative effort between a licensed therapist and a horse professional working with clients to address treatment goals. The purpose of the present Australian-based qualitative study was to examine EAP facilitators' perspectives on the biopsychosocial benefits and therapeutic outcomes of EAP for adolescents experiencing depression and/or anxiety. The findings suggest a range of improvements within adolescent clients, including increases in confidence, self-esteem and assertiveness, as well as a decrease in undesirable behaviours. The effectiveness of the therapy was thought to be due to the experiential nature of involving horses in therapy. The lack of understanding in the wider community about EAP was seen as a barrier to recognition and acceptance of EAP as a valid therapeutic intervention.

ABSTRACT: This study was a preliminary evaluation of a life skills training program conducted by the Equine Partnership Program (EPP) integrating Equine Assisted Services (EAS) with social emotional learning (SEL) competencies. SEL programs aim to foster character development, curb maladaptive behaviors, and enhance social skills in at-risk youth by promoting positive relationships and emotional regulation. Many youth still require more targeted or alternative approaches to effectively nurture these skills. EAS has the potential to enhance SEL through its experiential learning approach and use of horses as a bridge, which is believed to be effective because of the horse's innate ability to mirror and respond to human emotion. The purpose of this study was to assess the impact of EAS on the social-emotional development of at-risk youth as measured by the Depression, Anxiety, Pain, and Stress (DAPS) visual analog tool. It was hypothesized that participants would demonstrate measurable improvements in emotional regulation post intervention. Data were collected before and after the EAS experience from 33 participants. Participants were asked to rate their levels of DAPS ranging from a high of 10 to a low of 1. Using t-test comparisons, statistically significant decreases in scores were found in depression ($M = -0.67, p = 0.02$), and anxiety ($M = -1.18, p < 0.001$). Emotional pain and stress also showed decreases, though not statistically significant. This intervention shows promise to serve as an effective modality in addressing resilience and pro-social skills necessary for improved outcomes in behavioral and emotional development, thereby improving future academic, career, and overall life success, including improved social relationships.

STUDENT & STAFF WELLNESS



01

Chakales, P. A., J. Locklear, T. Wharton (2020). Medicine and Horsemanship: The Effects of Equine-assisted Activities and Therapies on Stress and Depression in Medical Students. *Cureus* 12, e6896 doi:10.7759/cureus.6896.

<https://pubmed.ncbi.nlm.nih.gov/32195063/>

ABSTRACT: This study examined the use of an equine-assisted brief course module on stress and depression among medical students (n = 28), a demographic known to experience high pressure. Evidence supports that animal-assisted therapies can lead to the improvement of health and quality of life, particularly in terms of cognitive, psychological, and physical benefits. This study used the seven-session Kane Medicine and Horsemanship program; students completed pre- and post-measures one week before and after the course. Participation in the course significantly reduced perceived stress (p: 0.001), depression (p: <0.001), stress severity (p: 0.014), and stress frequency (p: 0.001) among medical students. This approach should be further investigated as an option for improving well-being among medical students.

02

Everett, K., Friend, M. M., Farnlacher, E., Hilliard, A., Nicodemus, M. C., Cavinder, C. A., Holtcamp, K., & Jousan, D. (2024). Short-term equine interaction for reducing test anxiety and facilitating coping skill development in college students during examination periods: A preliminary study. *J Equine Vet Sci*, 137, 105091.

<https://doi.org/10.1016/j.jevs.2024.105091>

ABSTRACT: Mental health concerns are common among college students and more prevalent during examination periods when stress and anxiety are heightened. While the benefits of equine interaction have been reported, the impact of short-term equine interaction on coping skills valuable for managing test anxiety have yet to be studied. Therefore, the purpose of this preliminary study was to evaluate the impact of short-term equine interaction during the college examination period on development of coping skills and anxiety levels associated with testing, both self-reported and those reflected in physiological measures. Full-time college students engaged in a one-hour equine interaction session held on campus at the onset of final exam week. Participants completed a survey targeting perception of anxiety levels and coping skills. Heart rate and salivary cortisol measurements were collected pre- and post-session. Paired t-tests were performed between pre- and post- session measures and correlations between survey answers and physiological measures determined. Significant reductions were found in all areas of anxiety (Overall Academics P = 0.0003, Final Exam Preparation P = 0.0003, Taking Final Exam P = 0.0003). The reduction in exam-related anxiety was positively correlated to cortisol concentrations (r = 0.69, P = 0.03) with lower concentrations (P = 0.05) and increased heart rate (P = 0.003) post-session. Regarding coping skills, improvements were observed post-session in assertiveness (P = 0.008). Skill development coupled with reduced anxiety supports the potential benefits short-term equine interaction can offer students during the high stress periods, but these findings should be confirmed with more in-depth study.

03

Marchand, W. R., & Sullivan-Sakaeda, L. (2022). A pilot observational study of a psychotherapy incorporating equines resiliency intervention for staff at a large medical center. *Complementary Therapies in Clinical Practice*, 49, 101660.
<https://www.sciencedirect.com/science/article/pii/S1744388122001281?via%3Dihub>

ABSTRACT: Background: and purpose: Stress and burnout among healthcare workers are significant public health concerns. The primary aim of this pilot study was to conduct preliminary assessments of safety, feasibility, and participant satisfaction with a psychotherapy incorporating equines (PIE)-based resiliency intervention for healthcare workers. The overarching goal was to lay the groundwork for future, more rigorous investigations. Lastly, a very preliminary assessment of using the Acceptance and Action Questionnaire II (AAQII) to assess for changes in psychological flexibility (PF) associated with PIE was conducted. Materials and methods: Thirty-seven staff members from a medical center participated in a 4-h PIE-based resiliency retreat. Pre- and post-intervention instruments were utilized to assess participants' self-perception of physical and psychological health (PROMIS Global Short Form) and enjoyment of (Physical Activity Enjoyment Scale) and satisfaction with (Client Satisfaction Questionnaire) the intervention, as well as changes in PF (AAQII). Results: There were no adverse effects on participants, staff, or equines. Preliminary results suggested that the intervention was perceived as enjoyable by participants. However, the intervention was not fully utilized. Finally, there was a significant ($p = 0.02$) pre- to post-intervention change in AAQII scores. Conclusion: This study provides a foundation for future rigorous studies of PIE-based resiliency interventions for medical staff. Given the limitations of this pilot work, firm conclusions cannot be drawn regarding safety and feasibility. However, the preliminary results suggest that future studies of this intervention are warranted and that the AAQII may be a useful instrument to assess for possible changes in PF.

04

Marchand, W. R., Sullivan-Sakaeda, L., Lackner, R., Taplin, D., & Nazarenko, E. (2023). A replication study of a psychotherapy incorporating horses resiliency intervention for healthcare workers. *Complement Ther Med*, 76, 102965.
<https://doi.org/10.1016/j.ctim.2023.102965>

ABSTRACT: OBJECTIVES: The first aim of this pilot observational study was to replicate a previous study of a resiliency psychotherapy incorporating horses (PIH) intervention for healthcare workers. The second aim was to address some gaps in the literature regarding equine-assisted services more broadly. DESIGN: Prospective open trial. SETTING: A large healthcare system and a community equine facility INTERVENTION: A single-session four-hour intervention that focused on participants resilience. MAIN OUTCOME MEASURES: Safety, feasibility, and utilization were assessed, and psychological instruments were administered. Instruments utilized were the Positive and Negative Affect Scale the Acceptance and Action Questionnaire II, and the Conner-Davidson Resiliency Scale. RESULTS: Thirty-eight subjects participated in the study, the majority of which were female (71.1 %). The age group with the

most representation included those ranging from age 25-34. The intervention was safe but underutilized. Participation was associated with improved psychological flexibility (PF), and positive affect, as well as reduction in negative affect pre- to post-intervention. There was no change in resiliency and there were no associations between improvements in affect and PF. CONCLUSIONS: Resiliency PIH interventions for healthcare workers can be utilized safely and likely result in short-term psychological benefits for participants. Future randomized controlled investigations are warranted, and these studies should implement methods to maximize utilization. Additionally, this study and the literature suggest that enhanced affect and PF are likely important EAS outcomes across a variety of interventions. These constructs should be investigated with more rigorous studies including comparisons of interventions with and without a psychotherapy component.

05

Rentko, V., Warner, A., Timlege, E., & Richman, E. (2022). Equine-Assisted Learning – An Experiential, Facilitated Learning Model for Development of Professional Skills and Resiliency in Veterinary Students. *J Vet Med Educ*, e20210165.

<https://doi.org/10.3138/jvme-2021-0165>

ABSTRACT: Stress has been identified as a major obstacle for students in DVM training programs and can be associated with a high incidence of anxiety and depression among students. Interventions for stress reduction and improved self-confidence have been introduced at many veterinary schools with the intention of increasing resiliency among students and improving skills for wellness to be used throughout a veterinary career. Equine-assisted learning (EAL) is a facilitated, reflective discussion method based on interpretation of equine behavior in a group experiential setting that has been used to improve confidence, self-assurance, verbal and non-verbal communication, focus, mindfulness, and coping strategies in populations of students, medical students, corporate groups, and career professionals. We worked with the Cummings School equine teaching herd to develop an EAL course offered as a weekly class to veterinary students in Spring and Fall semesters since 2018. Our course was modeled after one offered to medical students at the University of Arizona and Stanford University, using progressively more complex equine handling exercises over the course of the semester (Kane, 2007). Our goal was improved communication, focus, and self-awareness among students to help reduce stress and improve resiliency. Outcome surveys showed that the students found a safe space to share anxieties, concerns, or challenges and learn professionalism skills. Incidentally, they also reported improvement in their equine handling skills. We advocate the use of EAL principles and the use of veterinary teaching horses to reduce stress and improve resiliency and equine handling skills among veterinary students.



HORSES FOR
MENTAL HEALTH

MILITARY

01

Arnon, S., et al. (2020). Equine-Assisted Therapy for Veterans with PTSD: Manual Development and Preliminary Findings. *Mil Med* 185, e557–e564
doi:10.1093/milmed/usz444. <https://pubmed.ncbi.nlm.nih.gov/32034416/>

ABSTRACT: INTRODUCTION: Equine-assisted therapy (EAT) for post-traumatic stress disorder (PTSD) has attracted great interest despite lacking empirical support, a manual, and a standardized protocol. Our team of experts in EAT and PTSD developed an eight-session group EAT treatment protocol for PTSD (EAT-PTSD) and administered it to two pilot groups of military veterans to assess initial effects. MATERIALS AND METHODS: We describe the development of the treatment manual, which was used with two pilot groups of veterans. Protocol safety, feasibility, and acceptability were assessed by reported adverse events, treatment completion rates, and self-rated patient satisfaction. Preliminary data on PTSD, depressive, and anxiety symptoms and quality of life were collected pretreatment, midpoint, post-treatment, and at 3-month follow up. RESULTS: No adverse events were recorded. All patients completed treatment, reporting high satisfaction. Preliminary data showed decreases in clinician-assessed PTSD and depressive symptoms from pre to post-treatment and follow-up (medium to large effect sizes, $d = .54-1.8$), with similar trends across self-report measures ($d = 0.72-1.6$). In our pilot sample, treatment response and remission varied; all patients showed some benefit post-treatment, but gains did not persist at follow-up. CONCLUSIONS: This article presents the first standardized EAT protocol. Highly preliminary results suggest our new manualized group EAT-PTSD appears safe, well-regarded, and well attended, yielding short-term benefits in symptomatology and quality of life if unclear length of effect. Future research should test this alternative treatment for PTSD more rigorously.

02

Burton, L. E., F. Qeadan, M. R. Burge (2019). Efficacy of equine-assisted psychotherapy in veterans with posttraumatic stress disorder. *J Integr Med* 17, 14–19
doi:10.1016/j.joim.2018.11.001. <https://pubmed.ncbi.nlm.nih.gov/30497951/>

ABSTRACT: BACKGROUND: Posttraumatic stress disorder (PTSD) is a common and debilitating disorder among war veterans. Although complementary and alternative therapies are gaining acceptance in the treatment of PTSD, the efficacy of animal-based therapies in this disorder is unknown. The goal of equine-assisted psychotherapy (EAP) is to improve the social, emotional, and/or cognitive functions of individuals with PTSD. OBJECTIVE: This study aims to explore the effects of EAP on PTSD symptoms. We hypothesized that veterans with PTSD who participate in a standardized EAP program for 1 h per week for 6 weeks would experience decreased PTSD symptoms and would demonstrate increased resilience as compared with individuals who do not receive EAP intervention. DESIGN, SETTING, PARTICIPANTS AND INTERVENTIONS: We conducted a sequentially assigned, two-arm parallel group trial comparing 6 weeks of EAP with standard, previously established, ongoing PTSD therapy. Therapy was conducted at a community EAP facility in conjunction with an academic University Hospital. Twenty adult veterans with symptomatic PTSD completed the study. Ten adult veterans with previously diagnosed PTSD were assigned to EAP and received directed interaction with trained horses for one hour a week in groups of 3 or 4 individuals,

while also continuing their previously established therapies. A certified therapist supervised the sessions, and a professional horse handler was also present. Results were compared with those from 10 adult veterans who only received their standard previously established PTSD care as prescribed by their provider. MAIN OUTCOME MEASURES: Changes in salivary cortisol, scores for the PTSD Check List–Military Version (PCL–M) and the Connor–Davidson Resilience Scale (CD–RISC) after 6 weeks of study were measured. RESULTS: Of the 20 enrolled patients, 10 served in Afghanistan, 5 served in Iraq, and 3 served in Vietnam. Subjects were (47+/-14) years old, were predominantly male, and had a body mass index of (29+/-7) kg/m². They had (9.2+/-6.1) years of military service and carried 66%+/-37% service-connected disability. PCL–M scores declined significantly in both groups and CD–RISC scores increased significantly in the EAP group. There was no difference between the groups with respect to the magnitude of change. CONCLUSION: As compared to the control group, a 6-week EAP program did not produce a statistically significant difference with respect to PCL–M and CD–RISC scores, or salivary cortisol. However, our results suggest that EAP may work as well as standard therapy with respect to these parameters. This study supports further inquiry into EAP as a potentially efficacious alternative for veterans suffering from PTSD. TRIAL REGISTRATION: ClinicalTrials.gov NCT #03039361.

03

Fisher, P. W., et al. (2021). Equine-Assisted Therapy for Posttraumatic Stress Disorder Among Military Veterans: An Open Trial. *J Clin Psychiatry* 82, doi:10.4088/JCP.21m14005. <https://pubmed.ncbi.nlm.nih.gov/34464523/>

ABSTRACT: Objective: As veterans have high rates of posttraumatic stress disorder (PTSD) and historically poor treatment outcomes and high attrition, alternative treatments have gained much popularity despite lack of rigorous research. In this study, a recently developed and manualized 8-session group Equine-Assisted Therapy for PTSD (EAT-PTSD) was tested in an open trial to assess its preliminary feasibility, acceptability, and outcomes for military veterans. Methods: The study was conducted from July 2016 to July 2019. Sixty-three treatment-seeking veterans with PTSD enrolled. PTSD diagnosis was ascertained using the Structured Clinical Interview for DSM-5, Research Version (SCID-5-RV) and confirmed using the Clinician-Administered PTSD Scale (CAPS-5). Mean age was 50 years, and 23 patients (37%) were women. Clinician and self-report measures of PTSD and depression were assessed at pretreatment, midtreatment, and posttreatment and at a 3-month follow-up. An intent-to-treat analysis and a secondary analysis of those who completed all 4 clinical assessments were utilized. Results: Only 5 patients (8%) withdrew from treatment, 4 before midtreatment and 1 afterward. Posttreatment assessment revealed marked reductions in both clinician-rated and self-reported PTSD and depression symptoms, which persisted at 3-month follow-up. Specifically, mean (SD) CAPS-5 scores fell from 38.6 (8.1) to 26.9 (12.4) at termination. Thirty-two patients (50.8%) showed clinically significant change (>/= 30% decrease in CAPS-5 score) at posttreatment and 34 (54.0%) at follow-up. Conclusions: Manualized EAT-PTSD shows promise as a potential new intervention for veterans with PTSD. It appears safe, feasible, and clinically viable. These preliminary results encourage examination of EAT-PTSD in larger, randomized controlled trials. Trial Registration: ClinicalTrials.gov identifier: NCT03068325.

04

Johnson, R. A., et al. (2018). Effects of therapeutic horseback riding on post-traumatic stress disorder in military veterans. *Mil Med Res* 5, 3 doi:10.1186/s40779-018-0149-6. <https://pubmed.ncbi.nlm.nih.gov/29502529/>

ABSTRACT: **BACKGROUND:** Large numbers of post-deployment U.S. veterans are diagnosed with post-traumatic stress disorder (PTSD) and/or traumatic brain injury (TBI), leading to an urgent need for effective interventions to reduce symptoms and increase veterans' coping. PTSD includes anxiety, flashbacks, and emotional numbing. The symptoms increase health care costs for stress-related illnesses and can make veterans' civilian life difficult. **METHODS:** We used a randomized wait-list controlled design with repeated measures of U.S. military veterans to address our specific aim to test the efficacy of a 6-week therapeutic horseback riding (THR) program for decreasing PTSD symptoms and increasing coping self-efficacy, emotion regulation, social and emotional loneliness. Fifty-seven participants were recruited and 29 enrolled in the randomized trial. They were randomly assigned to either the horse riding group (n = 15) or a wait-list control group (n = 14). The wait-list control group experienced a 6-week waiting period, while the horse riding group began THR. The wait-list control group began riding after 6 weeks of participating in the control group. Demographic and health history information was obtained from all the participants. PTSD symptoms were measured using the standardized PTSD Checklist-Military Version (PCL-M). The PCL-M as well as other instruments including, The Coping Self Efficacy Scale (CSES), The Difficulties in Emotion Regulation Scale (DERS) and The Social and Emotional Loneliness Scale for Adults-short version (SELSA) were used to assess different aspects of individual well-being and the PTSD symptoms. **RESULTS:** Participants had a statistically significant decrease in PTSD scores after 3 weeks of THR ($P \leq 0.01$) as well as a statistically and clinically significant decrease after 6 weeks of THR ($P \leq 0.01$). Logistic regression showed that participants had a 66.7% likelihood of having lower PTSD scores at 3 weeks and 87.5% likelihood at 6 weeks. Under the generalized linear model (GLM), our ANOVA findings for the coping self-efficacy, emotion regulation, and social and emotional loneliness did not reach statistical significance. The results for coping self-efficacy and emotion regulation trended in the predicted direction. Results for emotional loneliness were opposite the predicted direction. Logistic regression provided validation that outcome effects were caused by riding longer. **CONCLUSION:** The findings suggest that THR may be a clinically effective intervention for alleviating PTSD symptoms in military veterans.

05

Malinowski, K., et al. (2018). The Effects of Equine Assisted Therapy on Plasma Cortisol and Oxytocin Concentrations and Heart Rate Variability in Horses and Measures of Symptoms of Post-Traumatic Stress Disorder in Veterans. *Journal of equine veterinary science* 64, 17. <https://pubmed.ncbi.nlm.nih.gov/30973147/>

ABSTRACT: With the increase in the number of horses being used in Equine-Assisted Activities and Therapies (EAAT) programs and with the increasing concern for animal welfare, it is important to understand the impact of such interventions on the stress level and quality of life for the horses involved. The purpose of the present pilot study was to test the hypothesis

that participation in EAAT would acutely alter physiological markers of stress and well-being, including plasma cortisol, plasma oxytocin, and heart rate variability (HRV), in horses and that symptoms of posttraumatic stress disorder (PTSD) would be reduced after five sessions of EAAT in veterans who had previously been diagnosed with PTSD. Nine healthy geldings, of various breeds, ages 10–23 years, conditioned and experienced as therapeutic riding horses, were selected to participate in the study. Of these, seven were selected at random to wear electrocardiogram units, and all nine were used for blood sampling to measure plasma cortisol and oxytocin. Each horse was randomly assigned to partner with a veteran for five EAAT sessions, 1 hour in duration. A standing control was conducted on a later date on which horses did not participate in EAAT. Measurement after 5 days of EAAT was conducted immediately after the end of the last session on day 5 using the Brief Symptom Inventory and the PCL-5 (a 20 item self-report measure of the Diagnostic and Statistical Manual of Mental Disorders - 5 for symptoms of PTSD). Two way repeated measure analysis of variance showed no significant day by time interactions for plasma cortisol ($P = .821$) or oxytocin ($P = .861$). There was a significant day by time interaction ($P = .006$) for heart rate (HR); where on day 1, HR (bpm) was significantly lower during the interaction with the veterans. There were no significant differences in HRV variables. Posttherapy measures in PTSD symptoms in veterans were significantly reduced except for interpersonal sensitivity ($P = .08$) and phobic anxiety ($P = .17$). There was an effect of EAAT on HR which was significantly reduced on day 2 during the actual EAAT session. Equine-Assisted Activities and Therapies had no effect on respiration rate and systolic or diastolic blood pressure in veterans involved in five sessions of EAAT, lasting 60 minutes in duration over the course of 5 days. Stress levels, as demonstrated by plasma cortisol concentrations and HRV, did not change in horses involved in EAAT sessions with veterans who had been previously diagnosed with PTSD. Furthermore, the horses used in this study did not demonstrate increased levels of well-being as demonstrated by the lack of change in plasma oxytocin concentrations after EAAT sessions. Symptoms of PTSD did. change significantly in the veterans who participated in this study.

06

Marchand, W. R., Joubert, K., Smith, J., Nazarenko, E., Klinger, W., Sheppard, S., & Hoopes, K. H. (2022). A Pilot Observational Study of Implementing an Equine-Assisted Services Program Within a VA Medical Center Residential Substance Use Disorder Treatment Program. *Military medicine*. doi:10.1093/milmed/usac028
<https://academic.oup.com/milmed/advance-article/doi/10.1093/milmed/usac028/6540479>

ABSTRACT: The aim of this observational pilot study was to assess the safety, feasibility, preliminary outcomes, and predictors of participant response as a result of implementing an equine-assisted intervention within a residential substance abuse treatment program at a large Veterans Administration medical center. A secondary aim was to evaluate psychological instruments for use in future, more rigorous studies. The overarching goal was to complete the necessary work to prepare for a large randomized controlled trial of this intervention for Veterans with addictive disorders. Participants were 33 Veterans, 29 males and 4 females, who participated in one 4-hour session of combined equine-assisted learning

and equine-assisted psychotherapy during an admission to a residential substance abuse treatment program. Preintervention and postintervention instruments were utilized to assess changes in affect, anxiety, and craving. Demographic and diagnostic variables were evaluated for the potential to predict outcomes. The intervention was safe and feasible to utilize as there were no adverse outcomes to patients, staff, or equines. The State-Trait Anxiety Inventory, Craving Experience Questionnaire, and Positive and Negative Affect Scale revealed preliminary findings of significant preintervention to postintervention decreases in anxiety, negative affect, and craving, as well as increased positive affect. Lastly, the presence or absence of a history of suicide attempts and/or suicidal ideation were predictive of some postintervention scores. While more rigorous studies are needed, these results indicate that the intervention evaluated in this study is safe and feasible to utilize for Veterans admitted to a residential substance abuse treatment program. Furthermore, preliminary outcomes suggest that this intervention, and perhaps other equine-assisted interventions, has the potential to be beneficial to Veterans with addictive disorders as well as those at risk of suicide. The psychological instruments used in this intervention appear to be appropriate for use in future investigations. Additionally, more rigorous studies are warranted, and this work provides the necessary first steps needed to proceed with those investigations.

07

Nevins, R., S. Finch, E. J. Hickling, S. D. Barnett (2013). The Saratoga WarHorse project: a case study of the treatment of psychological distress in a veteran of Operation Iraqi Freedom. *Adv Mind Body Med* 27, 22-5 . <https://pubmed.ncbi.nlm.nih.gov/24067322/>

ABSTRACT: **OBJECTIVE:** We theorized that ability to direct and control a horse will lead to a sense of empowerment, facilitate a relationship between horse and veteran, lead to a decrease in anxiety, and improve physical and social functioning. **METHODS:** This case study utilizes the Connection methodology: nonverbal language of the horse in a predictable, sequential, and repeatable method. Psychological testing occurred immediately pre- and post-Connection with follow-up occurring at 2, 4, 6, and 12 wks post-Connection. **PARTICIPANT:** Twice-deployed combat medic who served in Operation Iraqi Freedom (OIF). **SETTING:** Saratoga Springs, New York. **PRIMARY OUTCOME MEASURES:** Beck Depression Inventory-II (BDI-II); Posttraumatic Stress Disorder Checklist (PCL-C); the Response to Stressful Experiences Scale (RSES); the Quality of Life Inventory (QOLI); and the Modified Social Support Survey (MSSS). **RESULTS:** The participant demonstrated significant improvement in measures of psychological functioning (eg, over 12 wks); both PCL-C and RSES scores decreased 58% and 44%, respectively. Participant further reported an increase in sleep quality. **CONCLUSION:** The results of this case study strongly support the potential for the intervention and indicate the need for a controlled, randomized study that might more stringently investigate the impact of the intervention.

08

Romaniuk, M., J. Evans, C. Kidd (2018). Evaluation of an equine-assisted therapy program for veterans who identify as wounded, injured or ill and their partners. PLoS One 13, e0203943 doi:10.1371/journal.pone.0203943.

<https://pubmed.ncbi.nlm.nih.gov/30260975/>

ABSTRACT: The aim of this study was to evaluate outcomes of an equine-assisted therapy program for Defence Force veterans and their partners across the psychological domains of depression, anxiety, stress, posttraumatic stress, happiness, and quality of life, as well as compare the outcomes of an Individual and Couples program. A non-controlled, within-subjects longitudinal design was utilized with assessment at three time points (pre-intervention, post-intervention, and three months follow-up). Between-subjects analysis with two groups was also conducted to compare the outcomes of the Individual and Couples programs. Participants were recruited from ten programs in 2016 with a total of 47 veterans and partners from both an Individual program (n = 25; veterans only) and a Couples program (n = 22). Outcome measures included the Depression Anxiety Stress Scale-21, Posttraumatic Stress Disorder Checklist for DSM-5, Oxford Happiness Questionnaire, and Quality-of-Life Enjoyment and Satisfaction Questionnaire-Short Form. Paired samples t-tests revealed that within both the Individual and Couples programs, there were significantly fewer psychological symptoms and significantly greater levels of happiness and quality of life at post-intervention compared to pre-intervention. Reduced psychological symptoms were maintained at the three months follow-up for participants of the Couples program only. Independent samples t-tests revealed participants in the Couples program reported significantly less symptoms of depression, stress, and posttraumatic stress disorder (PTSD) at follow-up compared to participants in the Individual program. These results indicate there may only be meaningful benefits for equine-assisted therapy in the reduction of depression, stress, and PTSD symptoms for veterans, if partners are integrated into the intervention.

09

Steele, E., D. S. Wood, E. J Usadi, D. M. Applegarth (2018). TRR's Warrior Camp: An Intensive Treatment Program for Combat Trauma in Active Military and Veterans of All Eras. Military medicine 183, 403-407 doi:10.1093/milmed/usx153.

<https://pubmed.ncbi.nlm.nih.gov/29635563/>

ABSTRACT: Effective treatments for combat trauma in military service members exist, but barriers to care abound, including poor access, stigma, and dropout. Although the effects of post-traumatic stress disorder (PTSD) can be severe, recovery is possible when proper treatment is implemented. Trauma and Resiliency Resources, Inc.'s Warrior Camp (WC) program is designed to address the effects of combat trauma in military service members and veterans. This intensive, 7-d treatment incorporates eye movement desensitization and reprocessing therapy, equine-assisted psychotherapy, yoga, and narrative writing in context of community. This single-group pretest-posttest design included paired t-tests and effect size analyses for 85 participants of WC. Outcome measures included the Mississippi Scale for Combat-related PTSD, the Patient Health Questionnaire, the Revised Adult Attachment Scales, and the Moral Injury Events Scale. Clinician-administered measures included the Davidson

Trauma Scale and the Dissociative Experiences Scale. All measures showed statistically significant reductions in distress. The effect sizes ranged from small to large. Results suggest that WC participants experienced significant improvement in PTSD, depression, moral injury, dissociation and adult attachment. Clinicians should consider the potential benefits of this short-term, intensive treatment when addressing combat-related PTSD among military service members and veterans.;

10

Sylvia, L., et al. (2020). Acceptability of an adjunct equine-assisted activities and therapies program for veterans with posttraumatic stress disorder and/or traumatic brain injury. *J Integr Med* 18, 169-173 doi:10.1016/j.joim.2020.01.005.
<https://pubmed.ncbi.nlm.nih.gov/31996299/>

ABSTRACT: OBJECTIVE: Equine-assisted activities and therapies (EAATs) have been a growing adjunctive integrative health modality, as they allow participants to practice mindfulness, emotional regulation, and self-mastery or self-esteem building skills. Preliminary evidence suggests that these programs may be helpful in reducing posttraumatic stress disorder (PTSD), anxiety, and depressive symptoms. The current study examines the acceptability of integrating an EAAT program as part of a two-week, intensive clinical program for veterans with PTSD and/or traumatic brain injury (TBI). METHODS: A family member or support person could accompany veterans and participate in the program. One hundred and six participants (veteran n = 62, family n = 44) left the urban environment in an intensive outpatient program (IOP) to attend a two-day, weekend EAAT in rural New Hampshire. Satisfaction surveys were conducted on the last day of the program and examined using thematic analysis. RESULTS: The following themes were reported in the surveys: ability of horses to catalyze emotional rehabilitation, effectiveness of immersion in equine-assisted activities, program's ability to foster interpersonal relationships and necessity of education about PTSD for staff. Participants also reported enjoying the program as highlighted by qualitative feedback, a mean score of 9.76 (standard deviation [SD] = 0.61) as reported by veterans and a mean score of 9.91 (SD = 0.29) as reported by family members on a 10-point visual analog scale with higher scores indicating a greater overall experience. CONCLUSION: These data offer preliminary evidence that an adjunct EAAT program is acceptable for veterans with PTSD and/or TBI participating in an IOP.

11

Wharton, T., J. Whitworth, E. Macauley, M. Malone (2019). Pilot testing a manualized equine-facilitated cognitive processing therapy (EF-CPT) intervention for PTSD in veterans. *Psychiatr Rehabil J* 42, 268-276
doi:10.1037/prj0000359. <https://pubmed.ncbi.nlm.nih.gov/30907609/>

ABSTRACT: The objective of this study was to test effectiveness and feasibility of equine-facilitated cognitive processing therapy (EF-CPT), a manualized adaptation of the cognitive processing therapy model for veterans with posttraumatic stress disorder (PTSD) championed by the Department of Veterans Affairs, in which equine-facilitated activities are integrated into face-to-face sessions. Twenty-seven veterans with a diagnosis of PTSD

participated (M = 51; 78% male) in a pretest-posttest design. Veterans were seen by a single psychologist for 12 sessions of individual EF-CPT. Instruments included: PTSD Checklist (PCL), Trauma Related Guilt Inventory (TRGI), Working Alliance Inventory (WAI), and the Human Animal Bond Scale (HABS). We hypothesized improvement on all measures, low attrition, and good model fidelity. Paired sample t tests were conducted using SPSS. PCL scores improved significantly (M1 = 68.25, M2 = 35.96, $p \leq .001$), as did TRGI scores ($p \leq .001$ on all scales). HABS and WAI indicated good working relationship. Two individuals attended one session and did not return (both under the age of 50); there was no other attrition (7% rate). Audio of sessions was reviewed for fidelity; there were variations in temporal order of session plans, which is within the acceptable flexibility of the manual. This manualized intervention has promise as an effective and well-tolerated treatment for veterans with PTSD. (PsycINFO Database Record (c) 2019 APA, all rights reserved).;Objective: The objective of this study was to test effectiveness and feasibility of equine-facilitated cognitive processing therapy (EF-CPT), a manualized adaptation of the cognitive processing therapy model for veterans with posttraumatic stress disorder (PTSD) championed by the Department of Veterans Affairs, in which equine-facilitated activities are integrated into face-to-face sessions. Method: Twenty-seven veterans with a diagnosis of PTSD participated (M age = 51; 78% male) in a pretest-posttest design. Veterans were seen by a single psychologist for 12 sessions of individual IF-CPT. Instruments included: PTSD Checklist (PCL), Trauma Related Guilt Inventory (TRGI), Working Alliance Inventory (WAI), and the Human Animal Bond Scale (HABS). We hypothesized improvement on all measures, low attrition, and good model fidelity. Paired sample t tests were conducted using SPSS. Results: PCL scores improved significantly (M1 = 68.25, M2 = 35.96, $p \leq .001$), as did TRGI scores ($p \leq .001$ on all scales). HABS and WAI indicated good working relationship. Two individuals attended one session and did not return (both under the age of 50); there was no other attrition (7% rate). Audio of sessions was reviewed for fidelity; there were variations in temporal order of session plans, which is within the acceptable flexibility of the manual. Conclusions and Implications for Practice: This manualized intervention has promise as an effective and well-tolerated treatment for veterans with PTSD. order of session plans, which is within the acceptable flexibility of the manual. Conclusions and Implications for Practice: This manualized intervention has promise as an effective and well-tolerated treatment for veterans with PTSD.

12

Highfill, M. C., Cassidy, J., Lee, K., Pollio, E. W., Kotamarti, V. S., O'Brien, J. M., Sharky, R., McDonald, K., Pollio, D., & North, C. S. (2024). A Focus Group Study of Equine-Assisted Activities and Therapy for Military Veterans Reintegrating Into Civilian Life. *Journal of Humanistic Psychology*, 00221678241256143.

<https://journals.sagepub.com/doi/abs/10.1177/00221678241256143?journalCode=jhpa>

ABSTRACT: Many veterans returning to civilian life face medical and mental health issues. As there is a stigma of using mental health services, equine-assisted activities and therapy (EAAT) has been considered a nonconventional intervention to support the mental health and well-being of veterans. In this qualitative study, 14 focus groups with 67 participants and program volunteers and staff of a veteran-led EAAT program were conducted to explore

perspectives among current and past participants in the program. Five themes emerged: (a) benefits of EAAT, (b) connections with horses, (c) program engagement, (d) equestrian experience related to military experience, and (e) recommendations for the program. In spite of emotional and physical challenges, they indicated that they felt stronger, confident, and fulfilled. The participants developed meaningful relationships with the horses and developed horsemanship skills. Some participants connected their involvement in the program to their past military experience based on interactions with peers in a group setting. Recommendations made by the participants included efforts to increase community awareness and expand the program by including families and adding therapeutic and aftercare components. Findings from this study suggest relevance for care of veterans reintegrating to civilian life from the point of view of individuals participating in EAAT.

13

Hoopes, K. H., Osborne, M., Marchand, W. R., Joubert, K., Nazarenko, E., Black, H., Klinger, W., & Sheppard, S. (2022). A pilot observational study of recreational trail riding for Veterans with addictive disorders. *Complementary Therapies in Medicine*, 65, 102813. <https://www.sciencedirect.com/science/article/pii/S0965229922001133?via%3Dihub>

ABSTRACT: Objectives: The aim of study was to assess the safety, feasibility, and preliminary outcomes of recreational trail riding for Veterans with addictive disorders. Design: This was an observational pilot study. Setting: United States Veterans Health Care Administration Medical Center. Participants were 18 Veterans, 13 males and 5 females All had at least one addictive disorder, with most common being alcohol use disorder. Intervention: A recreational trail ride of approximately two hours duration. Main outcome measures: Assessment of safety and pre- and post-intervention instruments, The State-Trait Anxiety Inventory, Craving Experience Questionnaire, Positive and Negative Affect Scale and Conner-Davidson Resilience Scale were utilized to assess changes in anxiety, craving, affect, and resilience, respectively. Results: The intervention was feasible to utilize for the population studied. In addition, it was possible to conduct the rides in such a way as to minimize risk to participants and there were no serious adverse outcomes to patients, staff, or equines. However, there was one incident that had potential to cause injury. There were significant pre- to post-intervention decreases in anxiety, negative affect and craving as well as increased positive affect. There was not a statistically significant increase in resilience. Conclusions: These results indicate that recreational trail riding is, at least in some settings, feasible to utilize for this population. The safety assessment indicated that this intervention can be conducted in a manner such that risk can be mitigated. However, trail riding is a dangerous activity that can result in serious injury or death to participants. Thus, such activities should only be considered by programs that have the ability to implement stringent safety protocols. Preliminary outcomes suggest that this intervention has the potential to be beneficial to for Veterans with addictive disorders. Additional, more rigorous randomized, controlled studies are warranted.

14

Marchand, W. R., Joubert, K., Smith, J., Nazarenko, E., Klinger, W., Sheppard, S., & Hoopes, K. H. (2023). A pilot observational study of implementing an equine-assisted services program within a VA medical center residential substance use disorder treatment program. *Military medicine*, 188(7-8), e2175-e2180.

<https://academic.oup.com/milmed/article/189/1-2/e220/7234016>

ABSTRACT: INTRODUCTION: The aim of this observational pilot study was to assess the safety, feasibility, preliminary outcomes, and predictors of participant response as a result of implementing an equine-assisted intervention within a residential substance abuse treatment program at a large Veterans Administration medical center. A secondary aim was to evaluate psychological instruments for use in future, more rigorous studies. The overarching goal was to complete the necessary work to prepare for a large randomized controlled trial of this intervention for Veterans with addictive disorders. MATERIALS AND METHODS: Participants were 33 Veterans, 29 males and 4 females, who participated in one 4-hour session of combined equine-assisted learning and equine-assisted psychotherapy during an admission to a residential substance abuse treatment program. Preintervention and postintervention instruments were utilized to assess changes in affect, anxiety, and craving. Demographic and diagnostic variables were evaluated for the potential to predict outcomes. RESULTS: The intervention was safe and feasible to utilize as there were no adverse outcomes to patients, staff, or equines. The State-Trait Anxiety Inventory, Craving Experience Questionnaire, and Positive and Negative Affect Scale revealed preliminary findings of significant preintervention to postintervention decreases in anxiety, negative affect, and craving, as well as increased positive affect. Lastly, the presence or absence of a history of suicide attempts and/or suicidal ideation were predictive of some postintervention scores. CONCLUSION: While more rigorous studies are needed, these results indicate that the intervention evaluated in this study is safe and feasible to utilize for Veterans admitted to a residential substance abuse treatment program. Furthermore, preliminary outcomes suggest that this intervention, and perhaps other equine assisted interventions, has the potential to be beneficial to Veterans with addictive disorders as well as those at risk of suicide. The psychological instruments used in this intervention appear to be appropriate for use in future investigations. Additionally, more rigorous studies are warranted, and this work provides the necessary first steps needed to proceed with those investigations

15

Marchand, W. R., Smith, J., Nazarenko, E., Joubert, K., Black, H., Osborne, M., Andersen, S., Bell, K., Baldwin, S., & Klinger, W. (2024). A Pilot Replication Study of Implementing an Equine-Assisted Services Program Within a VA Residential Substance Use Disorder Treatment Program. *Military medicine*, 189(1-2), e220-e226.

<https://academic.oup.com/milmed/article/188/7-8/e2175/6540479?login=false>

ABSTRACT: INTRODUCTION The aim of this observational pilot study was to assess the safety, feasibility, preliminary outcomes, and predictors of participant response as a result of implementing an equine-assisted intervention within a residential substance abuse treatment program at a large Veterans Administration medical center. A secondary aim

was to evaluate psychological instruments for use in future, more rigorous studies. The overarching goal was to complete the necessary work to prepare for a large randomized controlled trial of this intervention for Veterans with addictive disorders. **MATERIALS AND METHODS** Participants were 33 Veterans, 29 males and 4 females, who participated in one 4-hour session of combined equine-assisted learning and equine-assisted psychotherapy during an admission to a residential substance abuse treatment program. Preintervention and postintervention instruments were utilized to assess changes in affect, anxiety, and craving. Demographic and diagnostic variables were evaluated for the potential to predict outcomes. **RESULTS** The intervention was safe and feasible to utilize as there were no adverse outcomes to patients, staff, or equines. The State-Trait Anxiety Inventory, Craving Experience Questionnaire, and Positive and Negative Affect Scale revealed preliminary findings of significant preintervention to postintervention decreases in anxiety, negative affect, and craving, as well as increased positive affect. Lastly, the presence or absence of a history of suicide attempts and/or suicidal ideation were predictive of some postintervention scores. **CONCLUSION** While more rigorous studies are needed, these results indicate that the intervention evaluated in this study is safe and feasible to utilize for Veterans admitted to a residential substance abuse treatment program. Furthermore, preliminary outcomes suggest that this intervention, and perhaps other equine-assisted interventions, has the potential to be beneficial to Veterans with addictive disorders as well as those at risk of suicide. The psychological instruments used in this intervention appear to be appropriate for use in future investigations. Additionally, more rigorous studies are warranted, and this work provides the necessary first steps needed to proceed with those investigations.

16

Marchand, W. R., Lackner, R., Hartquist, A., Finnell, L., & Nazarenko, E. (2023). Evaluation of a mindfulness and self-compassion-based psychotherapy incorporating horses for Veterans who have experienced trauma. *Complement Ther Med*, 72, 102914. <https://doi.org/10.1016/j.ctim.2023.102914>

ABSTRACT: **OBJECTIVES:** The primary aim of this pilot study was to assess the safety, feasibility, acceptability, as well as preliminary outcomes of a mindfulness and self-compassion-based psychotherapy incorporating horses (PIH) intervention, Whispers with Horses, for Veterans who had experienced trauma. Whispers with Horses was developed as a structured intervention that could be easily replicated for additional studies. If shown to be effective by future rigorous research, the aim is to disseminate a manualized version of the intervention to the field. **DESIGN:** Prospective open trial. **SETTING:** A large Veterans Administration healthcare system and local equine facilities. **INTERVENTION:** A six-session PIH intervention that focused on participants developing or enhancing mindfulness and self-compassion skills in the context of an emerging horse-human relationship. **MAIN OUTCOME MEASURES:** Safety, feasibility and acceptability were assessed, and psychological instruments were administered. Instruments utilized were the PTSD Checklist for DSM 5 (PCL-V), the Patient Health Questionnaire 9 (PHQ-9), the Positive and Negative Affect Scale (PANAS), the Acceptance and Action Questionnaire II (AAQ-II), and the Physical Activity Enjoyment Scale (PACES). **RESULTS:** Subjects were 33 Veterans who were 52% male with a mean age of 46 y

Compiled for Horses for Mental Health (www.horsesformentalhealth.org) by Nerds for Herds (www.nerdsforherds.com), August 2024.

ears-old. There were no adverse outcomes to participants indicating the intervention was safe. Participants completed an average of 3.8 sessions with 24% completing all sessions indicating the intervention is feasible to use, and acceptable to, the population studied. The mean PACES score for all sessions together was 110.4, indicating subjects generally enjoyed participation. Preliminary outcome assessments revealed pre- to post-session significant improvements in affect and psychological flexibility for some sessions (p ranging from .001 to .015). Pre- to post-intervention outcomes indicated significant improvements in depression ($p = .003$) and psychological flexibility ($p = .005$). CONCLUSIONS: The Whispers with Horses intervention shows promise as a PIH for Veterans who have experienced trauma. More rigorous studies of this intervention are warranted. Also, additional investigations aimed at better understanding mechanisms underlying changes in psychological flexibility are justified

17

Rosing, T., Malka, M., Brafman, D., & Fisher, P. W. (2022). A qualitative study of equine-assisted therapy for Israeli military and police veterans with PTSD-impact on self-regulation, bonding and hope. *Health Soc Care Community*, 30(6), e5074-e5082. <https://doi.org/10.1111/hsc.13922>

ABSTRACT: Equine-assisted therapy (EAT) is an increasingly popular form of treatment for people suffering from post-traumatic stress disorder (PTSD) who, for one reason or another, find psychotherapy and other traditional treatment approaches unsuitable or unhelpful. However, the concomitant growth of research in the field is yet to engage with key factors relating to EAT; specifically, there are few studies considering the phenomenological perspective of patients, and the embodied knowledge deriving from the lived experience of PTSD patients who participated in EAT-based intervention programs. Based on a qualitative-phenomenological study, interviews were conducted with 12 PTSD patients who had completed an EAT-based intervention program. From these, three main themes characterizing the meanings they gave to participation in an EAT-based treatment program were identified: the ability to relax (self-regulation); establishing a relationship (bonding) and transformation and hope for the future. The findings of this study point to a process whereby participation in an EAT-based treatment program facilitates the ability to cope with PTSD symptoms in a way that bridges the patient's emotional, social and spiritual-existential dimensions. The findings suggest that EAT can contribute to the healing process of veterans suffering from PTSD.



HORSES FOR
MENTAL HEALTH

PSYCHIATRIC DISORDERS & CLINICAL APPLICATIONS

01

Alfonso, S. V., L. A. Alfonso, M. M. Llabre, M. I. Fernandez (2015). Project Stride: An Equine-Assisted Intervention to Reduce Symptoms of Social Anxiety in Young Women. *Explore (NY)* 11, 461-7 doi:10.1016/j.explore.2015.08.003.
<https://pubmed.ncbi.nlm.nih.gov/26386749/4>

ABSTRACT: INTRODUCTION: Although there is evidence supporting the use of equine-assisted activities to treat mental disorders, its efficacy in reducing signs and symptoms of social anxiety in young women has not been examined. METHOD: We developed and pilot tested Project Stride, a brief, six-session intervention combining equine-assisted activities and cognitive-behavioral strategies to reduce symptoms of social anxiety. A total of 12 women, 18-29 years of age, were randomly assigned to Project Stride or a no-treatment control. Participants completed the Liebowitz Social Anxiety Scale at baseline, immediate-post, and 6 weeks after treatment. RESULTS: Project Stride was highly acceptable and feasible. Compared to control participants, those in Project Stride had significantly greater reductions in social anxiety scores from baseline to immediate-post [decrease of 24.8 points; $t(9) = 3.40, P = .008$] and from baseline to follow-up [decrease of 31.8 points; $t(9) = 4.12, P = .003$]. CONCLUSION: These findings support conducting a full-scale efficacy trial of Project Stride.

02

Cappelen, H., Ivarsson, A., & Jormfeldt, H. (2023). The Effects of an Equine-Assisted Therapeutic Intervention on Well-Being in Persons Diagnosed with Schizophrenia. A Pilot Study. *Issues Ment Health Nurs*, 44(2), 104-111.
<https://doi.org/10.1080/01612840.2022.2158408>

ABSTRACT: The process of personal recovery among persons diagnosed with schizophrenia may be facilitated through innovative health promotion interventions targeting multidimensional aspects of subjective well-being. The current pilot study aims to test the use of self-rated questionnaires as a means of evaluation of the effects of an equine-assisted intervention for persons diagnosed with schizophrenia. Twenty adults diagnosed with schizophrenia were offered a 12-week EAT intervention performed six times once every 14 days by a licensed mental health nurse. Two validated self-rated questionnaires, HSCL-25 and SHIS were used as outcome measurements at baseline and at post-treatment, additionally the self-rated questionnaire PANAS was completed twice a week starting 1 week before the 12 week-EAT intervention. Only six of the 20 participants managed to complete the validated questionnaires. Despite the low response rate of approximately 30%, a significant difference was found between pre and post scores for positive affect and well-being. Effect sizes, ranging from small to large for pre-to-post treatment scores indicated less depression and anxiety, more positive affect, less negative affect, and reinforced well-being. Results suggest that EAT interventions may have beneficial effects among persons diagnosed with schizophrenia and that a varied range of research methods are needed to create a solid evidence base for EAT interventions intended for the target group.

03

Earles, J. L., L. L. Vernon, J. P. Yetz (2015). Equine-assisted therapy for anxiety and posttraumatic stress symptoms. *J Trauma Stress* 28, 149–52 doi:10.1002/jts.21990. <https://pubmed.ncbi.nlm.nih.gov/25782709/>

ABSTRACT: We tested the efficacy of the Equine Partnering Naturally((c)) approach to equine-assisted therapy for treating anxiety and posttraumatic stress 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). Participants engaged in tasks with horses for 6 weekly 2-hour sessions. Immediately following the final session, 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, $d = 0.54$. As well, 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((c)) approach to equine-assisted therapy may be an effective treatment for anxiety and posttraumatic stress symptoms. Future research should include larger groups, random assignment, and longer term follow-up.

04

Friden, L., Hultsjo, S., Lydell, M., & Jormfeldt, H. (2024). Experiences of a Therapeutic Equine-Assisted Group Intervention for People with Common Mental Disorders on Sick-Leave. *Issues Ment Health Nurs*, 45(3), 344–351. <https://doi.org/10.1080/01612840.2023.2301611>

ABSTRACT: Common mental disorders such as anxiety, depression and stress-related disorders are increasing worldwide, resulting in long-term sick leave and lower quality of life. Traditional treatment is often insufficient to facilitate the recovery process, and the need for holistic interventions that enable successful recovery is evident. Equine-assisted interventions have shown promising results in health promotion among people with mental disorders, and further research is needed to implement them within the range of available care. The aim of the study is therefore to describe experiences of a therapeutic equine-assisted group intervention for people with common mental disorders on sick leave. The study has a descriptive qualitative design with an inductive approach. Ten participants with common mental disorders on sick leave were interviewed after participating in a 12-week equine-assisted intervention and the data were analysed with conventional content analysis. The analysis generated the overall theme "The equine-assisted group intervention facilitates recovery," which summons the four categories "The environment of the horses contributes to relaxation and an ability to be in the present," "The presence of the horses facilitates supportive relationships in the group," "Interplay with the horses entails physical activity and bodily improvements" and "Emotional interactions with the horses strengthen inner power." In conclusion, equine-assisted interventions have the potential to facilitate recovery for people with common mental disorders by providing relaxation, promoting the ability to be in the

present, cultivating supportive relationships and providing physical activity and bodily improvements as well as emotional interactions that strengthen the participants' inner power.

05

Friden, L., Hultsjo, S., Lydell, M., & Jormfeldt, H. (2022). Relatives' experiences of an equine-assisted intervention for people with psychotic disorders. *Int J Qual Stud Health Well-being*, 17(1), 2087276. <https://doi.org/10.1080/17482631.2022.2087276>

ABSTRACT: PURPOSE: The aim of this study was to describe relatives' experiences of an equine-assisted intervention for people with psychotic disorders. METHODS: The study has a qualitative and descriptive design. Ten semi-structured interviews were performed with relatives of people with a psychotic disorder who had participated in an equine-assisted intervention. A conventional content analysis was used to analyse the data. RESULT: The overall category "Being with the horses strengthens health capabilities" summarizes the four identified subcategories "The horses contribute to a context with a common focus", "Interaction with the horses enhances self-confidence and motivation", "The interplay with the horses nurtures positive emotions" and "Being with the horses encourages physical activity". CONCLUSIONS: The result of this study contributes to the growing body of research about the potential outcomes of equine-assisted interventions. The result also indicates that equine assisted interventions may improve health capabilities among people with psychotic disorders. The generated knowledge may be useful in mental health services when developing equine-assisted interventions.

06

Hemingway, A., & Sullivan, K. (2022). Reducing the incidence of domestic violence: An observational study of an equine-assisted intervention. *Family process*, 61(2), 549-570. doi:10.1111/famp.12768 <https://go.exlibris.link/q7kWntg4>

ABSTRACT: This paper is presenting results from an observational study which has measured the impact of an equine-assisted education (EAE) intervention on the future occurrence of domestic violence within the family over 1 year following completion of the intervention as part of the troubled families program. The data analyzed were collected by the local authority troubled family's team from the different agencies involved including crime, health, and social care data. The data were analyzed and compared across four groups, those families on the troubled families program who had a key worker with a member or members who had attended and completed the equine-assisted intervention (n = 268); those families who were on the troubled families program but no support had been offered (n = 10,569), those families who were on the program and were being supported by a key worker only (n = 2119), and those families on the program who were being supported by a key worker and had received further support, not from the equine-assisted intervention (N = 1119). Significant reductions in domestic violence and child in need status were found for those families who had a member or members attend and complete the equine-assisted intervention under study. Those families referred to the equine-assisted intervention also had significantly more complex needs than those in the other groups. Referrals to this intervention are normally for

those families for whom talk-based interventions such as parenting, or education-based interventions are not working.

07

Højgaard-Bøytler, J., & Argentzell, E. (2023). Experiences of equine assisted therapy and its influence on occupational engagement among people with mental health problems. *Occupational Therapy in Mental Health*, 39(4), 394-418.

<https://www.tandfonline.com/doi/full/10.1080/0164212X.2022.2156428#abstract>

ABSTRACT: Equine Assisted Therapy (EAT) has positive influence on health. However, research is scarce regarding how people with mental health problems experience EAT and if it influences occupational engagement. Eleven people with mental health problems were interviewed regarding this issue. Data was analyzed using a hermeneutic phenomenological approach. Results showed that EAT had a positive influence on personal development and occupational engagement in forms of a catalytic experience, taking control in daily life, and being active and building relationships in life. Although the study is small in size, the results indicate that EAT could be used to facilitate meaningful occupations.

08

Hultsjo, S., & Jormfeldt, H. (2022). The Role of the Horse in an Equine-Assisted Group Intervention—as Conceptualized by Persons with Psychotic Conditions. *Issues Ment Health Nurs*, 43(3), 201-208. <https://doi.org/10.1080/01612840.2021.1975332>

ABSTRACT: Adopting positive health interventions is necessary to promote self-image, improve well-being, support meaningful social interaction and reduce loneliness, with benefits for psychological and physical health for persons with psychotic conditions. Raised awareness of the potential benefits of involving horses in these kinds of interventions is warranted. Thus, the aim of this study was to explore the role of the horse in equine-assisted interventions (EAI) as conceptualized among persons with psychotic conditions. Interviews were conducted with eight persons with psychotic conditions who had participated in an EAI, and data were analyzed following conventional qualitative content analysis. The results illustrate how the horse united the group and facilitated personal maturity both at a group level and at a personal level. In the group the horse facilitated interaction and became a healthy and normal topic of discussion. The interaction between the horse and others helped the participants to become aware of and reflect on behaviors of oneself and of others. At an individual level, the horse helped to develop participants' identities and growth by offer mutual friendship. With its size and calming way of being, the horse evoked a healing power among participants who identified characteristics of themselves in the horse. Through its clear body language and communication, the horse facilitated personal maturity and development among the participants that would not have occurred without the horse's presence.

09

Kovacs, G., van Dijke, A., Leontjevas, R., & Enders-Slegers, M. J. (2022). The Relevance of Internal Working Models of Self and Others for Equine-Assisted Psychodynamic Psychotherapy. *Int J Environ Res Public Health*, 19(17).

<https://doi.org/10.3390/ijerph191710803>

ABSTRACT: Attachment characteristics play a key role in mental health and in understanding mental disorders. The aim of this study was to gain insight into the role the attachment characteristics can play in treatment effects in adult patients with intrapsychic and interpersonal problems who underwent Equine-assisted Short-term Psychodynamic Psychotherapy (ESTPP). In the first part of the study, we compared the effects of ESTPP to treatment-as-usual from a previous dataset regarding psychological dysfunction. For this, an explorative experimental non-randomized pre-treatment and 1-year post-treatment design was used. A mixed model revealed a significant decline in psychological dysfunction for both conditions, with no significant difference between the two. In the second part of the study, we examined the course of ESTPP effects over the period of 1 year when controlled for attachment styles and, subsequently, for internal working models of self and others. To this end, measurements were taken at baseline, 2 months waiting time, one-week intensive module, 6 months, and one year after the start of the treatment. Mixed models accounted for repeated measures showed significant improvements in psychological dysfunction, remoralization, and depression for ESTPP patients over time. The study implies that models of self and others may be used to predict the course of effects, which is relevant in determining what works for whom. In particular, duration and intensity of therapy and a focus on the Model of Self seem relevant for shaping a more personalized treatment. ESTPP seems beneficial for patients with low pre-treatment attachment security.

10

Malcolm, R., S. Ecks, M. Pickersgill (2018). 'It just opens up their world': autism, empathy, and the therapeutic effects of equine interactions. *Anthropology & medicine* 25, 220-234 doi:10.1080/13648470.2017.1291115. <https://pubmed.ncbi.nlm.nih.gov/28513182/>

ABSTRACT: Experiences of autism-spectrum disorder are now increasingly studied by social scientists. Human-animal relations have also become a major focus of social inquiry in recent years. Examining horse-assisted therapy for autistic spectrum disorders, this is the first paper that brings these fields together. Drawing on participant observation and interviews at a UK horse therapy Centre, this article examines how staff and the parents of riders account for the successes and limitations of equine therapy. To the respondents, horses 'open up' autistic children and make possible interactions that seemed impossible before. Horses were regarded as facilitating the emergence of apparently social behaviours, which included eye contact, pointing, and speech. Three key explanations emerged for therapeutic success: the sensorial, embodied experience of riding the horse; the specific movements and rhythms of the horse; and, the 'personality' of the horse. Equine therapy can be regarded as enabling a form of multispecies intersubjectivity, with the resonance between rider and horse seeming to make possible a new attunement between humans. Practices of equine therapy, and perceptions of its efficacy, serve in turn to attune social scientists to a version of empathy

constituted through lively and sensorial interactions, as opposed to one that is restricted to particular kinds of humans.

11 Meinersmann, K. M., J. Bradberry, F. B. Roberts (2008). Equine-facilitated psychotherapy with adult female survivors of abuse. *J Psychosoc Nurs Ment Health Serv* 46, 36-42 doi:10.3928/02793695-20081201-08. <https://pubmed.ncbi.nlm.nih.gov/19133493/>

ABSTRACT: This qualitative study examined the stories of 5 women who experienced abuse and participated in equine-facilitated psychotherapy (EFP) as part of their recovery. Anecdotal accounts support the effectiveness of EFP with women who have experienced abuse, but there is a lack of supporting research. This study was designed to examine the effectiveness of EFP in the treatment of women who have experienced abuse. Selection criteria included age, experience of abuse, participation in EFP, and ability to understand English. Data analysis identified four patterns in the participants' stories: I Can Have Power; Doing It Hands On, Horses as Co-Therapists, and Turned My Life Around. Overall, the participants' stories show that EFP can be an effective intervention for women who have experienced abuse.

12 Nurenberg, J. R., et al. (2015). Animal-assisted therapy with chronic psychiatric inpatients: equine-assisted psychotherapy and aggressive behavior. *Psychiatr Serv* 66, 80-6 doi:10.1176/appi.ps.201300524. <https://pubmed.ncbi.nlm.nih.gov/25269512/>

ABSTRACT: OBJECTIVE: Animal-assisted therapy (AAT), most frequently used with dogs, is being used increasingly as an adjunctive alternative treatment for psychiatric patients. AAT with larger animals, such as horses, may have unique benefits. In this randomized controlled study, equine and canine forms of AAT were compared with standard treatments for hospitalized psychiatric patients to determine AAT effects on violent behavior and related measures. METHODS: The study included 90 patients with recent in-hospital violent behavior or highly regressed behavior. Hospitalization at the 500-bed state psychiatric hospital was two months or longer (mean 5.4 years). Participants were randomly selected to receive ten weekly group therapy sessions of standardized equine-assisted psychotherapy (EAP), canine-assisted psychotherapy (CAP), enhanced social skills psychotherapy, or regular hospital care. Participants' mean age was 44, 37% were female, 76% had diagnoses of schizophrenia or schizoaffective disorder, and 56% had been committed involuntarily for civil or forensic reasons. Violence-related incident reports filed by staff in the three months after study intake were compared with reports two months preintake. RESULTS: interventions were well tolerated. Analyses revealed an intervention group effect ($F=3.00$, $df=3$ and 86 , $p=.035$); post hoc tests showed specific benefits of EAP ($p<.05$). Similar AAT effects were found for the incidence of 1:1 clinical observation ($F=2.70$, $df=3$ and 86 , $p=.051$); post hoc tests suggested benefits of CAP ($p=.058$) as well as EAP ($p=.082$). Covariance analyses indicated that staff can predict which patients are likely to benefit from EAP ($p=.01$). CONCLUSIONS:

AAT, and perhaps EAP uniquely, may be an effective therapeutic modality for long-term psychiatric patients at risk of violence.

13

Meinersmann, K. M., J. Bradberry, F. B. Roberts (2008). Equine-facilitated psychotherapy with adult female survivors of abuse. *J Psychosoc Nurs Ment Health Serv* 46, 36-42 doi:10.3928/02793695-20081201-08.

<https://pubmed.ncbi.nlm.nih.gov/19133493/>

ABSTRACT: Purpose The purpose of this paper is to examine prisoner experience of an equine assisted psychotherapy (EAP). This paper explores the use of therapeutic interventions; specifically focussing on EAP, within this paper EAP constitutes the use of horses in therapy and involves a team approach from equine and mental health experts.

Design/methodology/approach This paper took a qualitative approach; due to the exploratory nature of this study a phenomenological approach was adopted. Interpretative phenomenological analysis was deemed appropriate; the intervention took place in an adult, male, open condition prison in England (Category D) however participants who engaged in the equine intervention were from both the open prison and a nearby closed Category C prison. The equine intervention was delivered by qualified therapists who worked to help improve emotional regulation among participants with a history of drug and alcohol abuse.

Findings The findings within this paper identify a strong correlation between EAP and positive experiences expressed by participants. Alternative approaches such as animal assisted therapies are worthy of consideration when attempting to support the rehabilitation and treatment needs of incarcerated clients. Participants achieved a number of goals and their confidence improved as they felt a sense of achievement. Research limitations/implications

This paper demonstrates the complexities of therapeutic interventions. Research relating to EAP in the UK is few and far between, consequently understanding is limited. This paper seeks to offer an insight into this topic and build upon this research in the future. Practical

implications Access to prison for research purposes is challenging. Due to the nature of this study and the resources required sometimes EAP therapy cannot be implemented in or near many prisons in England and Wales. Therefore gaining access to this prison and exploring the data is the first phase of further research in this area. Social implications

Researching the way individuals experience therapeutic interventions is a "growing phenomenon". This paper aimed to explore EAP interventions, however due to the sample size it was imperative that the role of EAP was not misrepresented. Therefore this papers intention is to raise awareness of EAP interventions and therapeutic interventions in prisons in England and Wales.

Originality/value To the authors knowledge no previous study has examined such an intervention using this method and as such the findings of this evaluation are important. Moreover this paper enhances and develops our knowledge about how best to support and treat people with histories of substance use and/or mental health problems and anxiety while in prison, and the vital role such therapies may play.

ABSTRACT: Introduction Equine assisted therapy (EAT) which includes therapeutic horseback riding (THR), grooming, horsemanship and ground level work with horses, has been studied as treatment for children with special needs and/or autistic spectrum disorder. Preliminary evidence indicates that EAT is also effective for improving self-efficacy and self-esteem in adults with psychiatric disorders. Empowerment, bonding and building trust with the horses, may promote functioning of patients struggling with post traumatic stress disorder (PTSD). The authors performed a prospective, pilot open case series study to assess the effect of EAT on patients with PTSD in terms of symptoms and functioning in work, family and social interaction. Methods Patients with PTSD received EAT once a week for 3 consecutive hours for 6 months. The Short Post Traumatic Stress Disorder Rating Interview (SPRINT) and the Sheehan Disability Scale (SDS) were assessed at baseline, the SDS after 1 and 6 months, and the SPRINT after 6 months. Results Thirteen of 23 participants completed the study. Ten participants withdrew from the study for various reasons including discomfort from horses. Total SPRINT scores showed a statistically significant improvement in PTSD symptoms (baseline vs. 6 months: 24.38 ± 6.4 vs. 21.54 ± 7.94 points; $p < 0.05$). SPRINT scores indicated improvement in the ability to work and perform daily tasks ($p < 0.05$). A statistically significant improvement in the total SDS score was revealed following 1 month ($p < 0.03$) and after 6 months ($p < 0.02$) of EAT. There was also a significant decline in the days of inefficiency (baseline vs. 6 months: 4.15 ± 2.73 vs. 1.88 ± 2.18 days per week, $p < 0.02$). Conclusion This preliminary pilot open case series study suggests that EAT may be a beneficial treatment for patients suffering from PTSD. The study demonstrated improved ability to work and perform daily tasks and reduction in the number of days of inefficiency. Further large-scale long-term studies are warranted to substantiate our observation.

ABSTRACT: This study entailed a qualitative content analysis of therapeutic factors in equine-facilitated group psychotherapy (EFGP) for women trauma survivors ($n = 9$). Our findings indicated that instillation of hope, self-understanding, learning from interpersonal action, guidance, and acceptance frequently appeared in group members' narratives about their most important session events. These, as well as other group therapeutic factors, manifested in unique ways specific to the EFGP format. Clinical practice implications and new directions for future research investigations are discussed within the context of designing and delivering equine-facilitated therapy groups. This study entailed a qualitative content analysis of

therapeutic factors in equine-facilitated group psychotherapy (EFGP) for women trauma survivors (n = 9). Our findings indicated that instillation of hope, self-understanding, learning from interpersonal action, guidance, and acceptance frequently appeared in group members' narratives about their most important session events. These, as well as other group therapeutic factors, manifested in unique ways specific to the EFGP format. Clinical practice implications and new directions for future research investigations are discussed within the context of designing and delivering equine-facilitated therapy groups.

16

Willmund, G., et al. (2021). Equine-assisted psychotherapy with traumatized couples-Improvement of relationship quality and psychological symptoms. *J Marital Fam Ther* 47, 925-944 doi:10.1111/jmft.12485. <https://pubmed.ncbi.nlm.nih.gov/33512042/>

ABSTRACT: Many traumatized individuals suffering from deployment related PTSD report severe problems in their relationships. Up until now, the therapeutic interventions used by the German Armed Forces have rarely targeted these problems through the integration of partners. For this reason, a Program designed specifically for couples was developed. In this prospective study equine-assisted psychotherapy was applied to soldiers and their spouses. The study population consisted of n = 36 couples, divided in n = 20 therapy group with a inpatient equine-assisted intervention and a 16-couples control group. After the intervention, numerous significant improvements occurred in the therapy group in the areas of current, somatic and communication problems, depressive symptoms and partnership quality but not in the control group. PTSD was reduced significantly on the sub-scale associated with negative thoughts. These results show that the intervention is an effective way to improve partnership quality and reduce the stressors that the partners of afflicted service members face.

17

Zhu, X., et al. (2021). Neural changes following equine-assisted therapy for posttraumatic stress disorder: A longitudinal multimodal imaging study. *Hum Brain Mapp* 42, 1930-1939 doi:10.1002/hbm.25360. <https://pubmed.ncbi.nlm.nih.gov/33547694/>

ABSTRACT: BACKGROUND: While effective treatments for posttraumatic stress disorder (PTSD) exist, many individuals, including military personnel and veterans fail to respond to them. Equine-assisted therapy (EAT), a novel PTSD treatment, may complement existing PTSD interventions. This study employs longitudinal neuro-imaging, including structural magnetic resonance imaging (sMRI), resting state-fMRI (rs-fMRI), and diffusion tensor imaging (DTI), to determine mechanisms and predictors of EAT outcomes for PTSD. **METHOD:** Nineteen veterans with PTSD completed eight weekly group sessions of EAT undergoing multimodal MRI assessments before and after treatment. Clinical assessments were conducted at baseline, post-treatment and at 3-month follow-up. **RESULTS:** At post-treatment patients showed a significant increase in caudate functional connectivity (FC) and reduction in the gray matter density of the thalamus and the caudate. The increase of caudate FC was positively associated with clinical improvement seen immediately at post-treatment and at 3-month

follow-up. In addition, higher baseline caudate FC was associated with greater PTSD symptom reduction post-treatment. CONCLUSIONS: This exploratory study is the first to demonstrate that EAT can affect functional and structural changes in the brains of patients with PTSD. The findings suggest that EAT may target reward circuitry responsiveness and produce a caudate pruning effect from pre to post-treatment.

AGING



01

Bos-Van Essen, S. M. (2022). [Equine Assisted Group Therapy. The Effect on the Quality of Life in Elderly with Dementia]. *Tijdschr Gerontol Geriatr*, 53(4).

<https://doi.org/10.36613/tgg.1875-6832/2022.04.03>

ABSTRACT: As people worldwide generally live longer, the number of people with dementia is also increasing, a condition for which there is no cure yet. Therefore, there is a growing focus on enhancing the quality of life of people with dementia, as well as a growing need for (new) psychosocial interventions that enhance quality of life. An example of this is Animal assisted therapy (AAT), a goal oriented, planned and structured therapeutic intervention directed and/or delivered by professionals. Equine assisted therapy (EAT) is a specific form of AAT which uses horses or other equines. In our research, the effect of EAT as group therapy was compared to the effect of group therapy without the assistance of animals. Over a period of six weeks, weekly group therapy sessions were conducted by a professional, who is psychologist and equine assisted therapist. In both groups, quality of life was measured before and after the therapy program with the Qualidem and the Quality of Life in Alzheimer's Disease questionnaires. Compared to the group that only participated in group therapy sessions, participation in the EAT program with assistance of a pony led to better results.

02

Cairns, K., Weaver, K., & McNiven, M. (2022). Palliative Inpatients' Experiences with Equine Therapy: A Qualitatively Driven Mixed-Method Exploratory Study. *International Journal of Advanced Nursing Education and Research*, 7, 19- 38.

https://ijaner.com/archive/vol7_no1_2022/2.pdf

ABSTRACT: With advances in modern medicine, Canadians are living longer with chronic illnesses. While many live at home, those in inpatient units may require comfort measures to complement treatment programs. Anecdotal evidence established that equine (horse) therapy can be beneficial, but there has been limited research about the utilization of horse therapy within the inpatient palliative care population in Canada. The study aimed to understand palliative inpatients' experiences with equine therapy. Of eight adult palliative care unit inpatients recruited by nursing staff, six (aged 58 – 82) completed the study. A qualitatively driven mixed-methods research design was used to collect qualitative data via individual interviews with participants, and quantitative data through inpatient records and the revised Edmonton Symptom Assessment System (ESASr). The quantitative data, analyzed using a non-parametric sign test, guided the interview questions. Then, narrative analysis of the interview data allowed rich descriptions and exploration of the participants' real-life experiences. The results of the study identified equine therapy as an effective intervention that allowed participants to "live in the moment." Narrative threads of quality of life, fatigue, distraction, reminiscence, and identification with the therapy horse were examined. This research project outlays an innovative approach for conducting horse therapy within an institutional setting and begins to scientifically address the knowledge gap on the meaning of horse therapy to the adult palliative care inpatient population.

03

Lee, K., H. Dabelko-Schoeny, H. Jedlicka, T. Burns (2020). Older Adults' Perceived Benefits of Equine-Assisted Psychotherapy: Implications for Social Work. *Research on social work practice* 30, 399-407 doi:10.1177/1049731519890399. <https://journals.sagepub.com/doi/full/10.1177/1049731519890399>

ABSTRACT: The purpose of this study was to explore participants' perceived benefits of equine-assisted psychotherapy and to understand if older adults with functional or cognitive impairment found meaning and purpose in their interactions with horses. This study employed a mixed methods study design with a concurrent triangulation approach. The findings from our study suggest that those impacted with functional or cognitive impairment can meaningfully engage in EAGALA model of equine-assisted psychotherapy and demonstrate the ability to find purpose from their experience. Their perceived benefits were not limited to their interactions with horses but instead wide-ranging, including positive influences from their peers, the outdoor environment associated with equine-assisted activities, and the increased level of social interactions through reminiscence. Social workers can serve a vital role in the use of equine-assisted psychotherapy among older adults, and equine-assisted psychotherapy may hold less stigma than traditional talk therapy to the older adult population.

04

Schmidt, J., A. Wartenberg-Demand, S. Forstmeier (2020). Equine-assisted biographical work (EABW) with individuals in the second half of life: study protocol of a multicentre randomised controlled trial. *Trials* 21, 857 doi:10.1186/s13063-020-04784-3. <https://pubmed.ncbi.nlm.nih.gov/33059730/>

ABSTRACT: BACKGROUND: Equine-assisted therapy is more often practiced with children and adolescents than with the elderly, although individuals in the second half of life could also profit from it. This group, from the age of 50, is characterised by increasing emotional, social, health-related and cognitive changes; a critical life event, such as a neurological illness or loss of a family member, can increase the likelihood of subclinical depression. Individuals who exhibit depressive symptoms not necessarily diagnosed with a major depression may suffer from relevant losses of quality of life (e.g. sleep disorders, memory disorders, feelings of guilt, hopelessness). Despite the fact that the various healthcare systems are in general more frequently used, such individuals often do not receive adequate therapy. The processing of one's biography (reminiscence) is an elementary component of most psychotherapy approaches and has been demonstrated to treat and prevent the development of major depression. In this study, equine-assisted biographical work (EABW), a combination of equine-assisted therapy and biographical work, will be applied with individuals with subclinical depression in the second half of their life. METHODS: This is a multicentre, prospective, randomised, controlled and open phase III study in enrolling participants with subclinical depression. The aim of the study is to evaluate whether a preventive, equine-assisted, age-specific treatment combining elements of equine-assisted intervention with those of biographical work offers better treatment potentials in comparison to a control group with no intervention. Study participants in the intervention group will receive weekly equine-assisted biographical work over a period of 8 weeks. The primary endpoint is the

change in Beck Depression Inventory-II (BDI-II) in a pre-post comparison. Secondary endpoints include other health-related questionnaires including quality of life, reminiscence functions and anxiety. DISCUSSION: The present study is the first randomised study examining the efficacy of biographical work with a horse and has the potential to establish an empirically based treatment for individuals in the second half of life and improving the symptoms of subclinical depression. TRIAL REGISTRATION: German Clinical Trials Register DRKS00017010 . Registered on 01 April 2019.

REVIEWS

01

Cleary, M., West, S., Thapa, D. K., Hungerford, C., McLean, L., Johnston-Devin, C., & Kornhaber, R. (2024). A Scoping Review of Equine-Assisted Therapies on the Mental Health and Well-Being of Autistic Children and Adolescents: Exploring the Possibilities. *Issues Ment Health Nurs*, 1-13. <https://doi.org/10.1080/01612840.2024.2364236>

ABSTRACT: Animals are increasingly being utilized to assist with therapies for people with various health conditions. Horses are often used as a mechanism of engagement and development for autistic children and adolescents. Horses offer a unique opportunity for interaction as the child or adolescent can physically ride and interact with the animal, thus creating a therapy that involves contact that is different to other animals. Benefits derived from equine-assisted therapies can be physical, social, behavioral, emotional, sensory, and cognitive. However, a current and specific research gap exists in understanding the potential mental health impacts of horse riding on autistic children and adolescents, as perceived and experienced by their parents, carers, and horse-riding service providers. This scoping review examined research on parents' and service providers' perceptions of the benefits of horse-related therapies, with a particular focus on perceptions of positive mental health impacts. A comprehensive electronic search across PubMed, Scopus and Cumulative Index to Nursing and Allied Health Literature identified 16 articles from 15 studies which met the inclusion criteria. Findings included non-mental health-related benefits (as perceived by parents and service providers), mental health-related benefits (as perceived by parents and service providers), benefits for those other than the child/adolescent, and limitations of equine-assisted therapies. With the increased use of equine therapy, and the mounting evidence of its positive impacts on mental health, it is timely to expand research on how to better harness interventions and maximize the mental health benefits for autistic children and adolescents.

02

Haig, L., & Skinner, K. (2022). Use of Equine-Assisted Services to Improve Outcomes Among At-Risk and Indigenous Youth: A Scoping Review. *Front Public Health*, 10, 730644. <https://doi.org/10.3389/fpubh.2022.730644>

ABSTRACT: Equine-assisted services (EAS) are gaining popularity as ways to promote psychological health and social well-being. EAS may show particular promise as culturally appropriate initiatives for at-risk Indigenous youth, as they are thought to align well with Indigenous ways of knowing which place emphasis on relationships between the land and all living beings. We seek to better understand previous uses of EAS as initiatives for at-risk youth populations, including Indigenous populations, and learn about which outcomes have been addressed in the literature with an EAS initiative by conducting a scoping review. The review focused on initiatives targeting at-risk youth aged 10-18 years of age in Canada, Australia, New Zealand, and the United States. A total of 27 studies were included in the final analysis from all target countries except New Zealand. The target populations were further divided into four subgroups: at-risk youth, youth with mental health disorders and/or learning disabilities, youth survivors of trauma/abuse, and at-risk Indigenous youth. Overall findings of the review suggest EAS are promising approaches for achieving therapeutic and learning goals with the potential to be successful with both Indigenous youth and at-risk youth more broadly.

03

Li, J., & Sanchez-Garcia, R. (2023). Equine-assisted interventions for veterans with posttraumatic stress disorder: a systematic review. *Front Psychiatry, 14*, 1277338. <https://doi.org/10.3389/fpsy.2023.1277338>

ABSTRACT: Equine-assisted intervention therapy has a nearly 60-year history and has been shown to have a significant positive impact on various types of psychotherapy patients. Due to an increase in research on EAT, the number of existing methods of equine-assisted intervention therapy has gradually increased. Based on existing literature on the application of equine-assisted intervention therapy on veterans with post-traumatic stress disorder (PTSD), this study examines the characteristics of several types of equine interventions and includes a systematic review of peer reviewed literature on equine-assisted interventions for veterans with PTSD published over the past 5 years, from 2018 to the present. Ten articles met the review criteria and served as the primary data for analysis. Several types of equine-assisted interventions were shown to have a beneficial psychological impact on veterans. However, some limitations were also found in the studies, such as that the majority of experiments were constrained by small sample sizes. Equine-assisted intervention therapy has been shown to be effective, but further research is merited in order to focus on the specific details and theories involved in equine-assisted interventions, and on the welfare of the horses involved in the therapy.

04

Palomar-Ciria, N., & Bello, H. J. (2023). Equine-Assisted Therapy in Post-Traumatic-Stress Disorder: A Systematic Review and Meta-Analysis. *J Equine Vet Sci, 128*, 104871. <https://doi.org/10.1016/j.jevs.2023.104871>

ABSTRACT: Alternative treatments for Post-traumatic-Stress Disorder (PTSD) have attracted attention, especially Equine-Assisted Services (EAS) including psychotherapy and occupational therapy involving horses. In this work, we measured the effectiveness of EAS in PTSD through a meta-analysis. An intensive bibliography search focusing in EAS and PTSD was conducted following the PRISMA recommendations. The search was not restricted by date. For the quantitative analyses, 5 works were selected. They were chosen based on the instrument utilized for the assessment of PTSD symptoms: the PTSD Checklist for DSM-5 (PCL-5). A random effects model was carried out, showing significant results in the reduction of PTSD symptoms. In the qualitative synthesis, 10 studies were included which showed interesting results in the improvement of PTSD symptoms and other variables. In conclusion, EAS are beneficial for post-traumatic symptoms in the short term follow-up period. However, EAS require further research and major standardization.

05

Provan, M., Ahmed, Z., Stevens, A. R., & Sardeli, A. V. (2024). Are equine-assisted services beneficial for military veterans with post-traumatic stress disorder? A systematic review and meta-analysis. *BMC Psychiatry*, 24(1), 544.

<https://doi.org/10.1186/s12888-024-05984-w>

ABSTRACT: **BACKGROUND:** Equine-assisted services (EAS) involves the use of horses within therapy, learning or horsemanship sessions and has been used with military veterans suffering from post-traumatic stress disorder (PTSD). This study systematically reviewed existing research on the use of EAS in the treatment of PTSD in military veterans and evaluated its effectiveness. **METHODS:** A systematic review was performed, in May 2023, with searches and data extraction carried out from three separate databases (PubMed, JSTOR and Science Direct) related to testing the effect of EAS on PTSD outcomes in veterans. A risk of bias assessment of included studies was conducted and meta analysis of outcomes performed when two or more studies reported the same outcomes. Other effects of EAS on veterans' health were also discussed. **RESULTS:** A total of 13 studies were identified based on our inclusion and exclusion criteria with 11 originating from the US and the remaining two from Australia and Israel. There were 344 participants amongst all of the studies with a mean age of 47 years and a male: female ratio of 19:6. Eight out of the 13 studies reported PTSD scores, as measured by either PTSD Checklist for DSM-5 (PCL-5) or PCL-Veteran/-Military versions (PCL-V/-M), and results suggested a reduction in PTSD score after EAS treatment of 22.6%. A meta-analysis confirmed that EAS favored a significantly lower PTSD score after treatment, with a mean difference of 12.46, 95% CI [9.03,15.88], $p < 0.00001$. However, only one study had low risk of bias whilst all the rest of the studies had some concerns to high risk of bias. **CONCLUSIONS:** EAS appeared to have a positive influence on PTSD symptoms in military veterans, significantly reducing PTSD severity scores. Other benefits of EAS may be peer support, social integration, learning new skills and bonding. However, the results of this systematic review must be interpreted with caution as almost all of the studies were of low quality. Therefore, further rigorous research is required with larger participants to be able to draw conclusions about the benefits of EAS on PTSD severity.

06

Rankins, E. M., McKeever, K. H., & Malinowski, K. (2023). Equids in Equine Assisted Services: A Scoping Review. *J Equine Vet Sci*, 127, 104825.

<https://doi.org/10.1016/j.jevs.2023.104825>

ABSTRACT: Equid welfare in equine assisted services (EAS) is an area that has received attention, but less attention than the documentation of human outcomes in response to EAS. To safeguard the well-being of equids and minimize human risk of injury, continued research on the effects of EAS programming and participants on equids needs to occur. The aims of this systematic scoping review were to identify the approaches taken for describing and understanding equids in EAS and the methods employed in evaluating equids' responses to EAS programming, participants, or both. Literature searches were performed in relevant databases to identify titles and abstracts for screening. Fifty-three articles were identified for full-text review. Fifty-one articles met the inclusion criteria and were retained for information

and data extraction. The qualitative grouping of articles by study aim resulted in four categories: (1) characterization and description of equids in EAS; (2) the acute responses of equids to EAS programming, participants, or both; (3) the effects of management practices; and (4) the chronic responses of equids to EAS programming and participants. The latter three areas are in need of more research, especially as it relates to differentiating acute and chronic effects of EAS on the equids involved. Detailed reporting of information on study design, programming and participant characteristics, equid demographics, and workload are needed to facilitate comparison among studies and permit eventual meta-analysis of studies. Multi-faceted approaches including an array of measurements as well as relevant and informative control groups or conditions are required to identify the complex effects of EAS work on equids, their welfare, well-being, and affective states.

07

Sebalj, M., Lakhani, A., Grindrod, A., & Stuckey, R. (2024). Equine-assisted services for people living with dementia: a systematic review. *Alzheimers Res Ther*, 16(1), 76. <https://doi.org/10.1186/s13195-024-01453-4>

ABSTRACT: **BACKGROUND:** Dementia has a significant impact on the social, physical, and psychological wellbeing of people living with dementia, their families and society. Animal-assisted interventions can have positive effects on the health and wellbeing of people living with dementia. Equine-assisted services are animal-assisted non-pharmacological interventions which have improved the health and wellbeing of diverse populations. The impact of participating in equine-assisted services on the health and wellbeing of people with dementia is unclear. A systematic review was conducted to synthesise evidence investigating the effects of participating in equine-assisted services on the health and wellbeing of people living with dementia. **DESIGN:** Systematic review following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. **METHODS:** The databases CINAHL, EMBASE, MEDLINE, and Web of Science were searched for any research published prior to 14 June 2023. Peer-reviewed publications in the English language utilizing methods deriving quantitative and/or qualitative data were eligible. Methodological quality of included studies was assessed using the Mixed Methods Appraisal Tool. Findings from studies were synthesised using a deductive approach. **RESULTS:** Of the 223 articles screened, six met the inclusion criteria: four quantitative and two qualitative studies. The six studies represent four separate equine interventions. Studies were of moderate to strong quality. Participants were people living with dementia (n = 44, mean age range 70-83 years), dementia care partners (n = 5, mean age 58), and equine-assisted services providers (n = 5). Interventions varied in duration, activities conducted, outcomes measured, and measurement tools used. Studies found a favourable impact of participating in equine-assisted services on the neuropsychiatric symptoms and quality of life of people living with dementia. Participating in equine-assisted services improved well-being, functional abilities, social participation, and communication, while also having a positive effect on social, emotional, and behavioural outcomes, and physical health. **CONCLUSIONS:** The limited but high-quality literature investigating the impact of equine-assisted services among people living with dementia suggests that equine-assisted services can have a positive impact on

the health and wellbeing of people living with dementia. Additional robust studies contributing to the evidence base are warranted; such studies can support the development of programs and further elucidate the impact of participation.

08

Xiao, N., Shinwari, K., Kiselev, S., Huang, X., Li, B., & Qi, J. (2023). Effects of Equine-Assisted Activities and Therapies for Individuals with Autism Spectrum Disorder: Systematic Review and Meta-Analysis. *Int J Environ Res Public Health*, 20(3).

<https://www.mdpi.com/1660-4601/20/3/2630>

ABSTRACT: Autism spectrum disorder (ASD) has become a critical public health issue that affects more than 78 million people. In many recent studies, the authors have demonstrated that equine-assisted activities and therapies (EAATs) can substantially improve the social and behavioral skills of children with ASD. However, the qualities of the studies differ, and some authors reached opposite conclusions. In this review, we systematically and objectively examined the effectiveness of EAATs for people with ASD, combining both qualitative and quantitative methods. We searched five databases (PubMed, Scopus, ERIC, ProQuest, and MEDLINE) and added relevant references, and we identified 25 articles for data extraction and analysis. According to our results, EAAT programs can substantially improve the social and behavioral functioning and language abilities of children with ASD. However, among the subdomains, the results were inconsistent. According to the meta-analyses, there were considerable improvements in the social cognition, communication, irritability, and hyperactivity domains, but not in the domains of social awareness, mannerisms, motivation, lethargy, stereotypy, or inappropriate speech. Moreover, there was a lack of sufficient comparative data to conclude that EAAT programs lead to substantial improvements in motor and sensory functioning. In addition, among the included studies, we noted the indicator of whether EAAT programs decreased parental stress and improved family functioning, and although there were four articles in which the researchers considered this aspect, we were unable to draw any conclusions because of the insufficient data and conflicting descriptive evidence. However, we need to consider the improvement in parental mental health as a factor in the effectiveness of this complementary intervention. We hope that in future studies, researchers will focus on family functioning and conduct more randomized controlled trials (RCTs) with blinded assessments using different scales and measures.