



Research and Evidence Base in Equine Assisted Services and Animal Assisted Services

The 2013 - 2025 Collection

Total of 364 Studies

Prepared by Dr Jo Curry and Meg Kirby

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(** Denotes thorough research)

MENTAL HEALTH PTSD/Depression/Schizophrenia/Veterans - Improved – Social Attention, Behaviour, Interpersonal Interaction, Mood, Empathy, Resiliency & Decreased Aggression

- **(**) Anastasya, K.S., Syamsuddin, I.G., Faradilla, M.A., Aminurrohman, A. & Imawan, I.A. (2024) Mechanisms and Benefits of Equine Therapy for Enhancing Mental Health. Research & Development 5(1) Pp 40-3 <https://doi.org/10.11648/j.rd.20240501.16>**

The aim of this EAP review is to deepen the understanding of the mechanisms and benefits of Equine Therapy as an innovative and effective therapy in enhancing individual mental well-being, by detailing previous research results to contribute further to our understanding. This is a literature review, involving a critical examination and review of knowledge, ideas, or findings in academically-oriented literature. The results of the study on Equine-Assisted Psychotherapy (EAP) have proven effective in addressing depression and anxiety in adolescents, as well as having the potential as a valuable addition to the treatment of PTSD in first responders and substance use disorders. Despite positive results in increasing self-confidence, social interaction, and well-being, limited public understanding poses a challenge to the recognition of this therapy. Further research is needed to strengthen empirical evidence and understand the positive impact of human-horse interaction in the context of animal-assisted therapy.

- **(**) Craig, J., Kaplan, C., Rode, D., Stojanowski, M., Smith, C., & Cohen, B. (2024) The Impact of Facility Dog Programming on Mood and Stress Among Healthcare Workers in Adult Inpatient Oncology Units. Practical Implementation of Nursing Science 3(1) Pp 16–26 DOI: <https://doi.org/10.29024/pins.62>**

(Also in Physiological category) Results: Seventy-six staff members participated in the intervention. Statistically significant improvements in mood occurred across all 32 items and eight subscales of the Brunel Mood Scale, which showed increased feelings of calmness, happiness, and vigor, and decreased feelings of depression, fatigue, anger, confusion, and tension. Self-reported physical symptoms of stress, including dry mouth, fatigue, headache, elevated heart rate, muscular tension, heart palpitations, stomach upset, and sweating also decreased following interaction with the facility dog. AAMH

- **(**) Coakley, A.B, Annese, C.D, Empoliti, J.H, & Flanagan, J.M. (2021) The experience of animal assisted therapy on patients in an acute care setting. Clinical Nursing Research 30(4) Pp 401-5 DOI: [10.1177/1054773820977198](https://doi.org/10.1177/1054773820977198)**

(Also In Physiological category) This investigation aimed to explore the effects of the AAT dog visitation program on patients. Measures included salivary cortisol, anxiety, wellbeing, comfort, respiratory and heart rate. Analysis indicates a significant reduction in heart and respiratory rates and level of anxiety, with improved levels of comfort and well-being. The salivary cortisol result was non-significant. This ATT dog program resulted in reduced anxiety levels and decreased heart and respiratory rates while improving subjective measures of comfort and wellbeing. AAMH

- **(**) Finistrella, M., Flores, P. & Frediani, G. (2024) Animal-assisted therapy in patients affected by schizophrenia and schizophrenic-related disorders: A scoping review. Advances in Medicine, Psychology, and Public Health 1(2) Pp 53-61 <https://hal.science/hal-04567974v1>**

This scoping review aims to map the existing literature on the impact of AAT on schizophrenia, focusing on changes in symptoms and overall well-being of affected individuals and identifying potential areas for intervention and future research. The review highlights AAT as a promising co-therapeutic approach, demonstrating benefits across physical, mental, emotional, and social dimensions in schizophrenia patients. It is particularly noted for its potential

in alleviating the disorder's negative symptoms. AAT could play a significant role in treating and managing schizophrenia, enhancing patient well-being and treatment adherence.

- **(**) Germain, S.M. (2024) Animal-Assisted Psychotherapy: A Meta Analytic Review. Thesis - The University of Manitoba** <https://mspace.lib.umanitoba.ca/server/api/core/bitstreams/43ad98d7-bc18-4480-96a2-b28c978a7681/content>

I conducted three meta-analyses to examine the efficacy of Animal-Assisted Psychotherapy (AAPT) to address the research gap in this area. The first study examined the effect of AAPT on mental disorders. The second study examined the effect of AAPT on internalizing disorders. The third study examined the effect of AAPT on individuals who had experienced a trauma. I also conducted a systematic review for the second study. The results of Study 1 found a large effect for pre-versus post intervention comparisons for all disorders, attention deficit hyperactivity disorder, reading disability, and trauma/PTSD. I found a moderate effect for the pre-versus post-comparison for autism. Additionally, I found a large effect for treatment versus control comparisons for anxiety disorders, and a moderate effect for the treatment versus control comparison for all disorders, reading disability, autism measures, and trauma/PTSD. The systematic review in Study 2 (internalizing disorders) found that the majority of studies reported no statistical difference between their experimental group and their control group (treatment versus treatment-as-usual). The meta-analytic results indicated a significant large effect. In study 3 (trauma) I found a large effect size for the pre-versus post- comparison analysis and a moderate effect size for the treatment versus control comparison analysis. Overwhelmingly, the majority of the moderator analyses were non-significant. Moderators that emerged as significant across studies were 'place of study,' 'percentage of women' (in the total sample and in the treatment group), and 'provider of the intervention.' The results of this dissertation tentatively support the use animal-assisted psychotherapy programs to reduce mental disorder symptoms.

- **(**) 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 Pp 1-28 00221678241256143 DOI: 10.1177/00221678241256143**

To contribute to the knowledge base on the feasibility of equine-assisted therapeutic interventions for veterans and to explore in greater depths the experience of veterans using a phenomenological lens, the current qualitative study partnered with a veteran-led EAAT program to explore perspectives among current and past veteran program recipients reintegrating into civilian life and program volunteers and staff. One of the programs provided by Equest, Hooves for Heroes, serves honorably discharged veterans of the U.S. Armed Forces seeking to integrate into civilian community life.

Two prominent findings reflected general agreement that the EAAT program was beneficial and that horses were uniquely integral to its benefits. The theme with the largest number of comments emerging from the 14 focus groups addressed the benefits of the Equest program, revealing general agreement and extensive focus on how beneficial the program was to its participants. The majority of participant comments reflected appreciation for the physical and psychosocial gains from participation in the program. The findings of this study point to activities with the horse, such as grooming and riding, as a fundamental basis for forming emotional bonds with the horse and instrumental in developing horsemanship skills and self-confidence with the horse. Once these gains were secured, the participants in the current study explained that they were then able to move to the next therapeutic step involving generalization of emotional growth and relationship skills from the horse to self-understanding and application to interpersonal relationships with humans. The discussants also described the pastoral equestrian setting as a particularly salutary influence (i.e. nature).

- **(**) Holtcamp, K., Nicodemus, M.C., Phillips, T., Christiansen, D., Rude, B.J., Ryan, P.L. & Galarneau, K. (2023) Psychotherapy Incorporating Equine Interaction as a Complementary Therapeutic Intervention for Young Adults in a Residential Treatment Program during the COVID-19 Pandemic. COVID 3(10) Pp 1571-1585 <https://doi.org/10.3390/covid3100107>**

To the best of our knowledge, this is the first study to examine the impact of equine interaction on emotional safety and learning within young adults with SUD (Substance Use Disorder). The objective of this study was to evaluate the efficacy of psychotherapy incorporating equine interaction in a residential treatment program during the COVID-19 pandemic for developing an emotionally safe environment for learning for young adults. Participants were involved in weekly equine therapy for 2–7 weeks. Assessment of emotional safety and long-term memory development was performed at the beginning and end of the treatment program. The development of memories centered around equine information that was covered during the treatment program. Semantic memory was assessed using a self-reporting knowledge exam and procedural memory was assessed using a skill evaluation. Emotional safety was determined using a self-reporting survey instrument. Significant improvement was determined in emotional safety, semantic memory and procedural memory for all participants by the end of the program. Length of stay and participation level were not significant indicators of emotional safety, and semantic memory or procedural memory development. These results suggest psychotherapy incorporating equine interaction was an efficient complementary therapeutic intervention for developing emotional safety and encouraging learning in a young-adult residential addiction treatment program during the COVID-19 pandemic.

- **(**) Huber, A, J. Klug, S.J. Abraham, A., Westenberg, E., Schmidt, V. & Winkler, A.S. (2024) Animal-Assisted Interventions Improve Mental, But Not Cognitive or Physiological Health Outcomes of Higher Education Students: a Systematic Review and Meta-analysis International Journal of Mental Health and Addiction 22 Pp 1597–1628 doi.org/10.1007/s11469-022-00945-4**

The objective of this study was to systematically review of the effects of AAls on the mental, physiological, and cognitive outcomes of higher education students. Almost all studies used dogs as the intervention animal. The quality of most included studies was rated as moderate. Studies showed an overall reduction of acute anxiety and stress. For other mental outcomes, studies showed smaller, but nonetheless beneficial effects. Studies showed no clear effect on physiological or cognitive outcomes. Strong methodological heterogeneity between studies limited the ability to draw clear conclusions.

- **(**) Kline, J. A., VanRyzin, K., Davis, J. C., Parra, J. A., Todd, M. L., Shaw, L. L., Haggard, B. R., Fisher, M. A., Pettit, K. L., & Beck, A. M. (2020) Randomized Trial of Therapy Dogs Versus Deliberative Coloring (Art Therapy) to Reduce Stress in Emergency Medicine Providers. Academic emergency medicine: official journal of the Society for Academic Emergency Medicine, 27(4), 266–275 <https://doi.org/10.1111/acem.13939>**

(Also in Physiological category) Objective: We hypothesize that if physicians and nurses interact with a therapy dog for 5 minutes while on ED shift, both their perceived and their manifested stress levels will decrease. In this single-center, prospective, randomized controlled clinical trial we tested the effectiveness of therapy dogs versus coloring a mandala and versus no intervention (control) on provider stress. Consenting emergency medicine physicians and nurses provided three self-reported assessments of stress and saliva samples at the start (T1), at the middle (T2), and near the end (T3) of shift. Thirty minutes prior to T2, participants were randomized to either interacting with a therapy dog or coloring for 5 minutes; controls had neither.

Conclusion: This randomized controlled clinical trial demonstrates preliminary evidence that a 5-minute therapy dog interaction while on shift can reduce provider stress in ED physicians and nurses. In conclusion, in this three-arm trial, we found that emergency providers randomized to a 5-minute interaction with a therapy dog and handler had a significant reduction in self-reported anxiety using a visual analog scale compared with patients randomized to deliberate coloring. Emergency providers had lower end-of-shift salivary cortisol with either coloring or therapy dog exposure compared with controls. These findings suggest that therapy dogs can reduce cognitive and physiological stress experienced by emergency care providers while on duty in the ED.

- **(**) Li J, Sánchez-García R. (2023) Equine-assisted interventions for veterans with posttraumatic stress disorder: a systematic review. *Frontiers in Psychiatry* 3(14) Pp1277338 eCollection PMID: 38025432 [doi: 10.3389/fpsy.2023.1277338](https://doi.org/10.3389/fpsy.2023.1277338)**

In this systematic review, we critically evaluated publications from the last 5 years relevant to equine interventions for veterans with PTSD. Across the board, regardless of the specific equine intervention applied, all veterans with PTSD exhibited benefits. All studies in the review indicate efficacy within a 6-month period.

Some possible benefits are the development of nonverbal communication abilities through interaction with horses and a reduction of blood pressure, heart rate, and anxiety levels, and AAT can also effectively treat depression, anxiety, attention deficit/hyperactivity disorder, conduct disorder, dissociative disorder, Alzheimer's disease, dementia, autism, and various other chronic mental illnesses.

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. (Inclusion criteria specified original studies evaluating the role of live horses in Psychologically-Assisted Therapy for Humans, excluding interventions using horse simulators.) 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.

See Main Findings Table below.

TABLE 4 Main findings.

Study	Intervention	Outcome measures	Overall findings	Limitation
Shelef et al. (47)	Group; EAT(equine-assisted therapy)	The Short Post Traumatic Stress Disorder Rating Interview (SPRINT) ; The Sheehan Disability Scale (SDS) questionnaire	Improvements in daily functioning have been observed. This enhancement not only instills coping mechanisms but also fosters the development of a healthier, stronger self-image. Significant progress has been noted in functional domains, particularly regarding the ability to work and complete daily tasks as measured by the SPRINT scale. Additionally, there was a noticeable decrease in inefficiencies related to work, study, and household chores as per the SDS scale.	The sample size was small, resulting in limited statistically significant changes across all PTSD symptoms.
Marchand et al. (33)	Equine-assisted services (EAS)	Physical Activity Enjoyment Scale (PACES); Acceptance and Action Questionnaire II (AAQII); Positive and Negative Affect Scale (PANAS); Beck Depression Inventory (BDI-II); DSM 5 (PCL-V); Quality-of-Life Enjoyment and Satisfaction Questionnaire (QLES-Q-SF)	The AAQII may serve as a tool to investigate PF as a potential mechanism underlying the efficacy of this intervention. Despite not being a traditional mental health treatment, the intervention could offer psychological benefits to Veterans diagnosed with PTSD.	Initially, the study was uncontrolled, thus not delineating clear cause-and-effect relationships. The potential for selection bias was evident as randomization was not employed. The research faced challenges with subject attrition and a limited sample size, potentially limiting its generalizability to other Veterans. While PMM was utilized to impute missing data—a technique apt for nonparametric datasets—its application may not be suitable for studies with small sample sizes. Additionally, the fidelity of intervention delivery was not evaluated.
Sylvia et al. (48)	Equine-assisted activities and therapies (EAATs)	PCL-5; Posttraumatic Stress Disorder Check List for Diagnostic and Statistical Manual of Mental Disorders (Fifth Edition); PHQ-9; Patient Health Questionnaire; NSI: Neurobehavioral Symptom Inventory; AUDIT-C: Alcohol Use Disorders Identification Test.	Of the 62 seniors who participated in the program, 15 (24.2%) expressed interest in returning, while 13 (21.0%) opined that the weekend group size was optimal. Similarly, from the 44 families engaged in the program, 11 (22.4%) indicated their willingness to return, and 12 (24.5%) considered the weekend group size as ideal. Such findings provide initial evidence suggesting the acceptability of an adjunct EAAT program for veterans with PTSD and/or TBI participating in an IOP.	Rather than implementing a clinical trial, the study aimed to ascertain the feasibility of utilizing EAAT in veterans undergoing treatment for PTSD and/or TBI. The data were derived from anonymized satisfaction surveys.
Marchand et al. (49)	Group or individual; Whispers with horses – a model EAS intervention	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).	Several sessions resulted in a significant enhancement in psychological flexibility, as evidenced by decreased AAQ-II scores, and demonstrated an improvement in affect, as reflected by PANAS scores. This trend might suggest that the efficacy of these sessions declines over time. Noteworthy reductions were observed in both PHQ and AAQ-II indices, indicating shifts in depression levels and psychological flexibility.	The study was limited by its small sample size. Furthermore, due to its uncontrolled design, causal relationships could not be definitively established. The lack of randomization also introduces potential selection bias concerns.
Romaniuk et al. (50)	Group; EAT	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.	Throughout the duration of the program, participants indicated enhanced levels of happiness and life quality. However, these improvements were not sustained 3 months post-program. Notably, only participants in the Couples program sustained reductions in psychological symptoms at the three-month mark. This suggests that long-term psychological benefits may be more pronounced for couples compared to individuals.	The absence of a control group impedes definitive conclusions concerning the efficacy of the intervention. Outcomes might be influenced by uncontrolled variables, including involvement in other therapeutic interventions. Furthermore, a significant proportion of participants were not available for follow-up at the three-month interval.

(Continued)

TABLE 4 (Continued)

Study	Intervention	Outcome measures	Overall findings	Limitation
Arnon et al. (51)	Group; Equine-assisted therapy (EAT)-PTSD	Diagnostic and Statistical Manual of Mental Disorders-5 (PCL-5 47); DSM-5; CAPS-IV; HAM-D; Beck Depression Inventory-II (BDI-II); Quality of Life Enjoyment and Satisfaction Questionnaire-Short Form (QLESQ-SF); Client Satisfaction Questionnaire (CSQ)	Post-treatment, five patients exhibited a response, with one achieving remission. At the three-month mark, three out of the initial five responders persisted in their response, whereas two regressed. Among the three individuals who did not respond post-treatment, one persisted in non-response, and two opted out of the follow-up assessment. A relapse was observed 3 months post-treatment. Of the seven individuals who did not achieve remission post-treatment, only one attained remission during the follow-up.	The sample size was limited and may not be representative. Patients concurrently undergoing psychotherapy or medication therapy were incorporated into the open trial, introducing potential confounding variables.
Malinowski et al. (36)	Individual; equine-assisted activities and therapies (EAAT)	Brief Symptom Inventory and the PCL-5 (The PTSD Checklist for the DSM-5); Blood samples; Post-Traumatic Stress Disorder (PTSD);	An analysis of symptom clusters highlighted significant reductions in Cluster E Hyperarousal Symptoms. Concurrently, the PCL-5 Composite Score demonstrated marked reductions in PTSD symptoms, with heart rates showing a decline on day 2. Pertaining to horses: During EAAT, there was a noted decrease in the horses' heart rates. No significant variation was observed in HRV variables such as SDNN and the LF/HF ratio. Additionally, plasma cortisol levels remained stable, suggesting the treatment regimen was not stressful for the horses. Furthermore, plasma oxytocin concentrations remained consistent in horses engaged in EAAT with veterans.	Measurement of the same hormones or physiological parameters for heart rate variability, as assessed in horses, was not feasible.
Burton et al. (34)	Group; Equine-assisted psychotherapy (EAP)	Salivary cortisol; PTSD Check List-Military Version (PCL-M); Connor-Davidson Resilience Scale (CD-RISC)	Participants reported enhanced levels of trust, relaxation, and patience. They also observed individual amelioration in symptoms and overall quality of life. EAP did not exhibit a significant alteration or increase in morning salivary cortisol concentrations.	Both the intervention and control groups suffered from a small sample size. Additionally, the study was limited by the lack of a randomization schedule. The research did not employ a dedicated instrument to gauge improvements in social or emotional functioning, or shifts in the overall quality of life. It is noteworthy that neither the intervention nor the control group excluded participants actively engaged in preexisting therapies. The study also did not consider the nature or quality of the participants' previous professional therapies. Another limitation may stem from the short duration of the therapy sessions; EAP therapy was administered for a total of 6 h spread over 6 weeks, equating to 1 h per week.

(Continued)

TABLE 4 (Continued)

Study	Intervention	Outcome measures	Overall findings	Limitation
Fisher et al. (52)	Group; Equine-Assisted Therapy for PTSD (EAT-PTSD)	PTSD Checklist for DSM-5 (PCL-5); (SCID-5-RV); Clinician-Administered PTSD Scale (CAPS-5); HDRS; self-report Beck Depression Inventory-II (BDI-II).	Reductions were observed in CAPS-5, PCL-5, HDRS, and BDI-II scores.	The absence of a control group without active therapy limits the study's ability to evaluate the clinical efficacy of EAT, especially considering many participants were already on stable psychological and/or pharmacological treatments. Open trials may yield inflated results, and observed symptom changes could merely be attributed to the passage of time. Nevertheless, clinically significant symptom reductions were sustained at the 3-month follow-up. Furthermore, independent evaluators were not blinded to the open treatment, introducing potential bias. The study also did not account for any additional treatments received between the post-EAT assessment and the follow-up, as the intent was not to deter patients from seeking further treatment.
Johnson et al. (53)	Group; EAT-Therapeutic horseback riding (THR)	Coping Self Efficacy (CSES); traumatic brain injury (TBI); eight-item investigator-developed Riding Questionnaire.	Participants reported that THR fostered positive personal transformations, enhanced interpersonal connections among veterans, facilitated a bond between veterans and horses, and promoted constructive interactions between veterans and staff/volunteers. Additionally, the intervention was perceived to have minimal adverse effects.	The setting and timing of data collection possibly deterred veterans from giving comprehensive responses. The nature of survey environments can induce varied impacts. Although ensuring intervention fidelity complicated the study logistics, the co-authors achieved thematic consensus. However, this consensus does not guarantee participant concordance.

- **(**) 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) Pp e2175-80 [no DOI](#)**

(Also put in SUD Category) 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.

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.

- **(**) Marchand, W.R., Smith, J., Hoopes, K.H., Osborne, M., Andersen, S.J., Bell, K., Nazarenko, E., Macneill, R. & Joubert, K. (2023) A pilot observational study of horsemanship skills training for veterans with posttraumatic stress disorder. Complementary Therapies in Medicine 72 Pp 102910 <https://doi.org/10.1016/j.ctim.2022.102910>**

Two sessions of instruction in horsemanship skills and two sessions of trail rides. Main outcome measures: Safety and feasibility of recruitment, retention, providing the intervention, and measuring outcomes, as well as acceptability of the intervention to the population studied were the main outcome measures. Finally, this work provides preliminary evidence that this intervention, without a mental health treatment component, might benefit the mental health of Veterans with PTSD. HMS not EAMH

- **(**) Marchand, W.R., Smith, J., Nazarenko, E., Joubert, K., Black, H., Osborne, M., Andersen, S., Bell, K., Baldwin, S., Klinger, W. & Connelly, H. (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) Pp e220-6 [no DOI](#)**

There were statistically significant pre- to post-session improvements, with medium-to-large effect sizes, for sessions 1–3 for negative affect and sessions 1 and 2 for positive affect, anxiety, and craving. Taken together, this study and our previous investigation of this equine-assisted services intervention suggest that it is safe and feasible to utilize for veterans admitted to a residential substance abuse treatment program and we have now found short-term benefits in two separate studies. The finding that there was no additional benefit from attendance at more than two intervention sessions suggests that dose–response relationship studies of equine-assisted services interventions for veterans are needed.

- **(**) 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. Complementary Therapies in Medicine 72 Pp 102914 <https://doi.org/10.1016/j.ctim.2023.102914>**

A six-session Psychotherapy Incorporating Horses (PIH) intervention that focused on participants developing or enhancing mindfulness and self-compassion skills in the context of an emerging horse-human relationship. There were no adverse outcomes to participants indicating the intervention was safe. Preliminary outcome assessments revealed pre- to post-session significant improvements in affect and psychological flexibility for some sessions. Pre- to post-intervention outcomes indicated significant improvements in depression and psychological flexibility.

- **(**) Marchand, W.R. (2023) Review: Potential Mechanisms of Action and Outcomes of Equine-Assisted Services for Veterans with a History of Trauma: A Narrative Review of the Literature** *Int J of Environmental Research & Public Health* 20(14) Pp 6377 [10.3390/ijerph20146377](https://doi.org/10.3390/ijerph20146377)

The aim of this article is to address these gaps by reviewing the extant literature of animal-assisted interventions in general, and equine-assisted services in particular, with the goal of providing guidance for future investigations in the field.

Preliminary results, reviewed herein, indicate that EAS interventions might benefit the military veteran population by enhancing treatment engagement and therapeutic alliance, as well as by contributing to symptom reduction and resulting in various transdiagnostic benefits.

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

A single-session four-hour intervention that focused on participants resilience. Resiliency PIH (Psychotherapy Incorporating Horses) interventions for healthcare workers can be utilized safely and likely result in short-term psychological benefits for participants. This study and the literature suggest that enhanced affect and Psychological Flexibility are likely important EAS outcomes across a variety of interventions. However, it must be acknowledged that all risk cannot be eliminated. These constructs should be investigated with more rigorous studies including comparisons of interventions with and without a psychotherapy component.

- **(**) Marcus, D.A., Bernstein, C.D., Constantin, J.M., Kunkel, F.A., Breuer, P. & Hanlon, R.B. (2021)** *Animal-assisted therapy at an outpatient pain management clinic. Pain Medicine* 13(1) Pp 45-57 <https://academic.oup.com/painmedicine/article/13/1/45/1854248>

Conclusions: Therapy dog visits in an outpatient setting can provide significant reduction in pain and emotional distress for chronic pain patients. Therapy dog visits can also significantly improve emotional distress and feelings of well-being in family and friends accompanying patients to appointments and clinic staff. AASP

- **(**) Nelson, L., Lasiter, S. & Emerson, A. (2024) Companion Dogs and Depression, Anxiety, and Posttraumatic Stress Disorder in Adult ICU Survivors: A Scoping Review. People and Animals: The International Journal of Research and Practice** 7(1) Article 14 <https://docs.lib.purdue.edu/pajj/vol7/iss1/14>

The purposes of our review were to summarize the literature focused on the influence of companion dogs on depression, anxiety, and posttraumatic stress disorder (PTSD); identify what is known about the potential role companion dogs play in the well-being of adult ICU survivors; and inform future research and practice. Depression was the most frequently reported condition, whereas the greatest effects were reported for PTSD.

Our review suggests companion dogs have the potential to improve symptoms in all three mental health domains, yet understanding the unique mechanisms behind these potential benefits remains unclear. The reviewed literature suggests companion dogs facilitate a meaningful recovery by instilling a sense of responsibility, purpose, and identity; a sense of normalcy by supporting routines and consistency; and enhanced social support, especially for those with higher levels of human social support. For those with limited human social support, companion dogs may facilitate connections to other people, building the potential for meaningful human relationships. Additionally, multiple mechanisms may work together to facilitate human well-being, thereby providing a holistic approach to recovery, where physical, social, and mental health benefits can occur simultaneously.

- **(**) Nelson, C., Dossett, K. & Walker, D.L. (2024) Equine-assisted therapy for posttraumatic stress disorder among first responders. Psychological Reports 127(5) Pp 2203-19**
<https://docs.lib.purdue.edu/paij/vol7/iss1/14>

Seven first responders participated in an 8-week, 90-minute, equine-assisted therapy program. Primary outcome measures (i.e., anxiety, depression, trauma, inflexibility and avoidance) were administered pre- and post-intervention. Additional measures examined feelings about the self and views towards aspects of the program. Findings suggested initial support for symptom reduction, particularly for depressive and trauma-related symptoms. Qualitative feedback from participants suggested significant benefits including increased sense of peace, reduced anxiety, mindfulness, and increased trust in the self and others. To our knowledge, this is the first study to directly examine clinical outcomes of first responders with PTSD participating in equine-assisted therapy and presents a promising adjunct to care in first responders moving forward.

- **(**) Pandey, R.P., Mukherjee, R. & Chang, C.M. (2024) The Role of Animal-Assisted Therapy in Enhancing Patients' Well-Being: Systematic Study of the Qualitative and Quantitative Evidence. Jmirx med. 5(1):e51787 doi: 10.2196/51787**

This systematic study aims to assess the outcomes of animal-assisted therapy interventions and explore the associated policies. All studies showed positive outcomes for depression and neurological disorders. Regarding stress and anxiety, 3 studies indicated supportive mediation, while 2 studies showed activating mediation. Conclusions: The overall assessment of animal-assisted therapy shows promise as an effective intervention in promoting well-being among diverse populations.

First, “supportive mediation” involves AATs providing emotional and psychological support to individuals. Second, “therapeutic mediation” entails AATs addressing specific therapeutic goals and needs in a structured manner. Finally, “activating mediation” comprises AATs designed to stimulate engagement and participation in various activities or tasks.

- **(**) Pruskowski, K. A., Gurney, J. M., & Cancio, L. C. (2020) Impact of the implementation of a therapy dog program on burn center patients and staff. Burns: journal of the International Society for Burn Injuries, 46(2), 293–297 <https://doi.org/10.1016/j.burns.2019.11.024>**

(Summary only in word) Animal-assisted interventions have not been previously reported in any burn center. This study has the intent of improving duration and quality of rehabilitation sessions and physical therapy. Satisfaction surveys were distributed to patients and staff. 14 patient surveys and 23 staff surveys were collected. Implementation of this program was feasible and patients worked with the therapy dogs in all environments of the burn center: outpatient, ward, and ICU. Most patients reported improved pain and anxiety after working with the therapy dogs. All patients reported that they would like more sessions with the therapy dogs. All staff members were satisfied or very satisfied with their therapy dog visit and all enjoyed having the therapy dogs present. Most reported an improved mood after seeing the therapy dogs and wanted that additional therapy dog visits. AASP

- **(**) Reed, B., Sellers, J., Russell, K., Russell, K. & Heidelberg, R.E. (2024) Take time to “paws”: a quality improvement project utilizing facility dogs for staff support Academia Mental Health & Well-Being (1) <https://doi.org/10.20935/MHealthWellB7434>**

87 unit visits were conducted and 792 surveys were completed across three timepoints. Most respondents identified as inpatient nurses. Immediately following facility dog visits, more than 90% of respondents reported improved individual and unit mood, and over 70% reported sustained improvements in unit mood in the post-visit survey. Respondents' comments reinforced the benefits of facility dog visits for staff wellness and resilience. Facility dog visits promote the well-being of pediatric hematology/oncology nurses, both individually and at the unit level, and should be scheduled regularly and frequently. This project highlights the importance of supporting the well-being of healthcare professionals and is relevant for individual healthcare professionals, the institutions they serve, and the patients under their care. AASP

- **(**) Shih, C.A. & Yang, M.H. (2023) Effect of animal-assisted therapy (AAT) on social interaction and quality of life in patients with schizophrenia during the COVID-19 pandemic: an experimental study. Asian Nurs Res (Korean Soc Nurs Sci) 17(1) Pp 37-43 doi: [10.1016/j.anr.2023.01.002](https://doi.org/10.1016/j.anr.2023.01.002)**

The study aimed to evaluate the effectiveness of AAT in improving social interactions and quality of life in patients with chronic schizophrenia during the COVID-19 pandemic. Comparisons were made before and after the intervention on social function, social adaptive function, and quality of life.

An experimental study was conducted, with six institutions for psychiatric rehabilitation in Taiwan as the case institutions. Patients in these institutions were randomly allocated to the experimental group, which received 60 minutes of AAT once a week for 12 weeks, or the control group, which engaged in routine discussion groups and watched short films about animals. (Real animals Vs videos of animals) Comparisons between the two groups were made before and after the intervention on social function, social adaptive function, and quality of life. Data were collected before the intervention (T1), immediately after the intervention (T2), and 3 months after the intervention (T3).

Social functioning was significantly higher in the experimental group than in the control group immediately after the intervention. However, there was no sign of improvement in social adaptive functions of the experimental group. The experimental group exhibited significantly higher quality of life than the control group immediately after the intervention and 3 months after the intervention.

- **(**) Sullivan, K., Hemingway, A. (2024) Equine-assisted learning reduces anxiety and increases calmness & social skills in young people. Academia Mental Health and Well-Being 1(3) Nov 28 <https://doi.org/10.20935/MHealthWellB7424>**

This quantitative before and after measures study evaluates an equine-assisted learning program involved in developing positive social and coping skills in participants with anxiety. Participants with anxiety aged between 8 and 18 were referred to the program which consisted of 5 × 2h sessions of learning natural horsemanship groundwork. Significant improvements were observed across all eight attributes at post-test, as well as the total score for all attributes combined. The eight attributes were assertiveness, focus, responsibility, empathy, calmness, planning, communication, and engagement in learning. There was a significant interaction between Time and Age for Planning and Empathy attributes, suggesting that early adolescence (ages 11–14) is a key period for providing early interventions for skill development, which may help reduce anxiety in other contexts.

- **(**) Zaker, A., Dudley, L., Slouka, M., Stallones, L. (2024) Integration of equine assisted services and social-emotional learning: A preliminary evaluation of a life skills training program for at-risk youth. Human-Animal Interactions, 12:1 <https://doi.org/10.1079/hai.2024.0019>**

The findings of this study offer valuable insights, contributing to the existing literature on the effectiveness of EAS in promoting SEL skill development among youth, and highlight the potential for EAS as a supportive educational tool. Specifically, our findings demonstrated statistically significant improvements in participant scores related to depression and anxiety. These results underscore the potential advantages of interventions aimed at enhancing these specific areas of emotional well-being.

This intervention shows promise to serve as an effective modality in addressing resilience and pro-social skills necessary for improved outcomes in behavioural and emotional development, thereby improving future academic, career, and overall life success, including improved social relationships.

- **Ágoston, D., Bozori, G. & Kiss, R. M. (2024) Investigating the Effectiveness of Equine-assisted Therapy on Children Regardless of Their Mental Disorder. Periodica Polytechnica Mechanical Engineering, 68(3) Pp 264–271 doi.org/10.3311/PPme.37390**

The effectiveness of EAT was investigated on children with diverse mental disorders by analyzing their gait. Significant differences were observed for eight out of the twenty-one parameters which investigation provides some promising results regarding the benefits of equine-assisted therapy for children's quality of life.

- **Amado-Fuentes M, Denche-Zamorano A, Barrios-Fernandez S, Gozalo M. (2024) Bibliometric Analysis on Equine-Assisted Interventions. Animals 14(12) Pp 1776 doi.org/10.3390/ani14121776**

The present work presents a snapshot of the state of the art of Equine-Assisted Intervention (EAI) research, including published articles and the most cited research as well as the most used keywords, and prolific authors and co-authors and their countries. To our knowledge, no other bibliometric studies have been performed, so it can be a tool to support future research.

- **Bishop, R., Underwood, F., Fraser, F., Burrows, L. & Shawe, J. (2023) Characteristics of natural environment use by occupational therapists working in mental health care: a scoping review JBI Evidence Synthesis 21(4) Pp 753-61 DOI: [10.11124/JBIES-23-00437](https://doi.org/10.11124/JBIES-23-00437)**

(Nature-Assisted Intervention including animals) Research has demonstrated the link between human health and the environment. The benefits appear to be particularly relevant to people with mental health conditions. The scoping review included any publication relating to the use of the natural environment/outdoor space in mental health occupational therapy practice. There were no geographical, gender, or age restrictions. All mental health diagnoses were eligible for inclusion. The environments used included forests, beaches, gardens, and parks. A variety of interventions were delivered in these environments, including gardening and nature-based activities, physical activities, and animal-assisted interventions. This review can support further development and implementation of nature-based approaches in mental health occupational therapy.

- **Chapman, C., Baselmans, C., Howell, T.J., Ronken, C. & Butler, D. (2024) Exploring the Benefits of Dog-Assisted Therapy for the Treatment of Complex Trauma in Children: A Systematic Review. Children 11:8 Pp 1017 <https://doi.org/10.3390/children11081017>**

In summary, research involving AAT indicates that it can be an effective means to reduce various mental health issues, including complex trauma.

- **Frederick, K.E., Ivey Hatz, J. & Lanning, B. (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 Pp 809–817 DOI [10.1007/s10597-015-9836-x](https://doi.org/10.1007/s10597-015-9836-x)**

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. 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.

- **Fridén, L., Hultsjö, S., Lydell, M & Jormfeldt, H. (2024) Experiences of a therapeutic equine-assisted group intervention for people with common mental disorders on sick-leave. Issues in Mental Health Nursing 45(3) Pp 344-51 <https://doi.org/10.1080/01612840.2023.2301611>**

Primary healthcare project called “Green Rehabilitation” in a county in southwestern Sweden. 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.

- **Friend, M.M., Nicodemus, M.C., Cavinder, C., Lemley, C., Prince, P., Cagle-Holtcamp, K.A. & Swanson, R.M. (2024) Impact of Equine Interaction during Psychotherapy on Anxiety and Depression for Residential Treatment Program Patients Experiencing Substance Withdrawal. People and Animals: The International Journal of Research and Practice 7(1):3** <https://docs.lib.purdue.edu/paij/vol7/iss1/3>

(Also in SUD) Psychotherapy incorporating equine interaction (PIE) has emerged in other populations as a treatment that decreases cortisol concentrations and improves treatment retention. The present study investigated the impact of 4 weeks of PIE on 10 (n = 10) withdrawing patients in a residential substance abuse treatment program. A survey instrument consisting of 17 questions tracking perceived anxiety and depression was given prior to the first week of PIE and at the end of the fourth week of PIE. On weeks 1 and 4 of PIE, heart rate and salivary cortisol measures were taken.

Significant improvements were seen in 24% of the survey questions analyzing nervousness, control of worry, trouble relaxing, and irritability. Tendencies toward improvements in another 17% of measures concerning control of one’s life, worry, and fear. Patient heart rates were higher following the fourth week of PIE compared to the first week of PIE, and no significant changes in cortisol concentrations were seen. These results, in addition to therapist observations of limited activity levels in the first week of treatment, indicate potential increased activity and participation through the 4 weeks of PIE. This improvement is in addition to improvements in survey responses associated with severity of depression and anxiety during the withdrawal period, indicating PIE’s effective-ness in SUD treatment.

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

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. 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.

- **Hoagwood, K.; Vincent, A.; Acri, M.; Morrissey, M.; Seibel, L.; Guo, F.; Flores, C.; Seag, D.; Peth Pierce, R.; Horwitz, S. (2022) Reducing Anxiety and Stress among Youth in a CBT-Based Equine-Assisted Adaptive Riding Program. Animals 12, 2491** doi.org/10.3390/ani12192491

(Also in Physiological) All instructors were trained in the RiA curriculum and delivered the same lessons. In addition to assessing the youth’s perception and changes over time, the researchers also assessed changes in the horses, both through saliva sampling. Physiological data and self-report measures were taken at weeks one, four, seven, and ten for the youth and horses. Saliva assays assessed cortisol as a physiological marker of stress and anxiety, and oxytocin as a measure of relaxation. Anxiety, as measured by caregiver self-reporting, significantly decreased from pre- to post-test, while emotional regulation scores increased. No significant changes in self-efficacy from pre- to post-test were observed. Saliva samples obtained from participants before and after riding sessions showed a consistent decrease in cortisol and a significant increase in oxytocin at two of the four timepoints (Week 1 and Week 7), but no overall pre- to post-test changes. Horse saliva data were collected using a modified bit; there were no significant changes in oxytocin or cortisol, suggesting that the horses did not have an increase in stress from the intervention.

- **Hunjan, U.G. & Reddy, K.J. (2023) Effect of Animal Assisted Therapy on Depression Memory Attention and Emotion Regulation Human Research in Rehabilitation 13:1 Pp120-129 DOI: [10.21554/hrr.042314](https://doi.org/10.21554/hrr.042314)**

This research aimed to study the effect of animal-assisted therapy (AAT), with therapy dogs, on depressive symptoms, emotional regulation, memory and attention of individuals. A pretest-posttest quasi-experimental research design was used. The therapeutic procedure involved various goal-directed activities performed by an animal-assisted therapist and mediated by a therapy dog. The findings reveal a positive impact of AAT on the given domains of memory, attention, emotion regulation and depressive symptoms, in the experimental group. The results help validate the module of AAT to improve an individual's cognitive functioning and alleviate depressive and emotional dysregulations.

- **Hyland, M.H. (2023) Thesis - Hooves for Hope: Equine Assisted Psychotherapy as a Modality for Social and Emotional Learning in At-Risk Youth. Psychology Doctoral Specialization Projects. 28. Eastern Kentucky University https://encompass.eku.edu/psych_doctorals/28**

...transitions into explaining and defining Equine Assisted Therapies broadly; examining the history of this field and moving towards a better understanding of how Equine Assisted Psychotherapy can be used to teach social and emotional learning. This can be done through targeting four key areas of deficit found within at-risk youth: 1) building self-esteem, 2) developing empathy and trust, 3) teaching emotional control and distress tolerance through mindfulness, and 4) learning how to be a friend and have a friend through the human-animal bond. Finally, a model program design including eight sessions of Equine Assisted Therapy is presented as a template for use by future providers. (No results reported)

- **Kovács, G., van Dijke, A., Inge Noback, I. & Enders- Slegers, M.-J. (2021) Integrated Equine-Assisted Short Term Psychodynamic Psychotherapy (EASTPP) equals regular STPP and outperforms in overcoming core problems of patients with personality problems: interpersonal sensitivity and self-esteem. Applied Neuroscience and Mental Health. 1(1):2-1 DOI: [10.31739/ANAMH.2021.1.2](https://doi.org/10.31739/ANAMH.2021.1.2)**

The aim of this study is to investigate if equine-assisted psychotherapy integrated in Short Term Psychodynamic Psychotherapy facilitates these nonverbal components and intersubjective relations compared to regular Short Term Psychodynamic Psychotherapy (STPP).

EASTP combines a nature-based setting, including dogs and horses, with a team of therapists to form a short-term psychodynamic psychotherapy

Conclusion: Integrated Equine- Assisted Short Term Psychodynamic Psychotherapy (EASTPP) seems feasible and effective in a patient group with personality problems especially in overcoming interpersonal sensitivity, self-efficacy and self-esteem.

- **Lavan, S., Ein, N. & Vickers, K. (2023) Examining the Effects of Nature and Animal Videos on Stress. Anthrozoos 36(5) Pp 849-868 DOI:[10.1080/08927936.2023.2210439](https://doi.org/10.1080/08927936.2023.2210439)**

Visual representations of animals, such as videos, may serve as an alternative intervention to the physical presence of live animals. These results suggest that watching a video of a puppy can be useful to improve wellbeing among university students. AASP

- **Lowry, C.S. (2023) Thesis - Straight from the Horse's Mouth: A Thematic Analysis Exploring Client and Practitioner Perceptions of an Equine-Assisted Family Therapy Session. Nova Southeastern University (FL) [no DOI](#)**

The purpose of this study was to answer the following question: What were the experiences of the multiple participants involved in the documented EAFT session? More specifically: In what ways, if any, did the participants perceive EAFT to be helpful in facilitating therapeutic change? This study also allowed me to utilize my own experiences regarding horses and therapeutic change to collect and present rich and descriptive insider perspectives of the study participants' experiences of EAFT treatment.

This research was the first time an EAFT session was documented and explored with the clinical team and the client. Obtaining the in-depth perspectives and the experiences of EAFT treatment from the ES, the therapist, and the client for the first time revealed significant patterns that can now be further explored in future studies to determine if the themes were unique to this case or are consistent with EAFT treatment as a whole across larger samples, client populations, and presenting problems.

Posits a Theory of Change, including Paradoxical, Mindfulness (living in the present moment), Openness/Exploratory, Connection, Safe Space, Embodied Experiential Learning & Parts/Whole work, and likens EAFT work to a “therapeutic odyssey” (Odyssean Change).

- **Matias, A.R, Santos, G.D. & Almeida, N. (2023) Equine-assisted therapeutic intervention in institutionalized children: Case studies. International Journal of Environmental Research and Public Health 20(4) Pp 2846 doi.org/10.3390/ijerph20042846**

There was an improvement in skills, with an impact on intrapersonal skills and marked improvement in self-regulation and self-control, in addition to an improvement in the intentionality of movement and adequacy of gesture to the context.

- **Peel, N., Nguyen, K., Tannous, C. (2023) The Impact of Campus-Based Therapy Dogs on the Mood and Affect of University Students. Int. J. Environ. Res. Public Health 20(6) Pp 4759 doi.org/10.3390/ijerph20064759**

This study aimed to investigate the impact of therapy dog interventions on students’ moods across a multi-campus university during a 2-week final examination period. The results were statistically significant, students who engaged with therapy dogs on campus during the examination period were more likely to have a more positive affect.

- **Pelyva, I. Z., R. Kresak, E. Szovak, A. L. Toth (2020) How Equine-Assisted Activities Affect the Prosocial Behavior of Adolescents. Int J Environ Res Public Health 17(8) Pp 2967 [doi:10.3390/ijerph17082967](https://doi.org/10.3390/ijerph17082967)**

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. 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.

- **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) Pp 544 doi.org/10.1186/s12888-024-05984-w**

This study systematically reviewed existing research on the use of EAS in the treatment of PTSD in military veterans and evaluated its effectiveness. 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. Further rigorous research is required with larger numbers of participants.

- **Saccoccia, N. (2024) Thesis - Empowering Children With Post-Traumatic Stress Disorder Through Horse Connection in Occupational Therapy. Doctor of Occupational Therapy, Boston University [no DOI](#)**

A two-part solution is discussed in this dissertation that includes educating occupational therapy practitioners (OTPs) about the benefits of incorporating equines for children with trauma and PTSD and review of a proposed program evaluation study. The proposed program evaluation study will help contribute to provider knowledge and research gaps of how horses impact pediatric social skills and their mental health. This dissertation will also discuss a plan for program implementation, evaluation, funding, and dissemination. (no results reported)

- **Tyssedal, M.K., Johnsen, E., Brønstad, A. & Skrede S. (2023) Dog-assisted interventions for adults diagnosed with schizophrenia and related disorders: a systematic review. *Frontiers in Psychiatry* 2023 14 Pp 1192075 doi: [10.3389/fpsy.2023.1192075](https://doi.org/10.3389/fpsy.2023.1192075)**

General psychopathology, positive and negative symptoms of psychosis, anxiety, stress, self-esteem, self-determination, lower body strength, social function, and quality of life were among the outcome measures with significant improvement. Most documentation for significant improvement was found for positive symptoms. One study indicated significant deterioration of non-personal social behavior. Studies indicate potential effects of dog-assisted interventions for adults diagnosed with schizophrenia and related disorders, mostly beneficial.

- **(**) Chen, T.T., Hsieh, T.L., Chen, M.L., Tseng, W.T., Hung, C.F. & Chen, C.R. (2021) Animal-assisted therapy in middle-aged and older patients with schizophrenia: a randomized controlled trial. *Front Psychiatry* 12:713623 doi: [10.3389/fpsy.2021.713623](https://doi.org/10.3389/fpsy.2021.713623)**

This study implemented a randomized controlled trial to assess the efficacy of a 12-week AAT psychological intervention with dogs for middle-aged and older patients with chronic schizophrenia in a clinical setting. AAT seemed to be effective in reducing psychiatric symptoms and stress levels of middle-aged and older patients with schizophrenia. AAT could be considered as a useful adjunctive therapy to the usual treatment programs.

- **(**) Fisher, P., Lazarov, A., Lowell, A., Arnon, S., Turner, J.B., Bergman, M., Ryba, M., Such, S., Marohasy, C., Zhu, X., Suarez-Jimenez, B., Marcowitz, J.C. & Neris, Y. (2021) Equine-Assisted Therapy for Posttraumatic Stress Disorder Among Military Veterans: An Open Trial *J Clinical Psychiatry* 82(5) Pp 36449 <https://doi.org/10.4088/jcp.21m14005>**

In this study, a recently developed and manualised 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. Posttreatment assessment revealed marked reduction in both clinician-related and self-reported PTSD and depression symptoms, which persisted at 3-month follow up.

- **(**) Maran, D.A., Cortese, C.G., Ilesanmi, O.S., Gianino, M.M. & Chirico, F. (2022) Animal-Assisted Intervention and Health Care Workers' Psychological Health: A Systematic Review of the Literature. *Animals* 12 Pp 383-398 <https://doi.org/10.3390/ani12030383>**

(Also in Physiology section) The studies included in our review showed that lower levels of cortisol, which is a biological indicator of work-related stress in an occupational context, as well as lower levels of BOS and better levels of perceived psychological well-being and real-time mood, may be manifestations of lower levels of work-related stress. However, other benefits of AAI in healthcare workers relate to the areas of relationships and interpersonal communication, such that their empathy towards colleagues and patients may increase. The results indicate that implementing the AAI program in a busy clinic is feasible and that the program is accepted by medical professionals because of the immense psychological benefits it provides. However, the healthcare professionals disliked the experimental design that forced them to leave their workplaces at a certain time. We believe that an ideal design to reduce provider stress would be better described as a “dog on demand”.

- **(**) Marchand, W.R., Andersen, S.J, Smith, J.E., Hoopes, K.H. & Carlson, J.K. (2021) Equine-assisted activities and therapies for veterans with posttraumatic stress disorder: current state, challenges and future directions. *Chronic Stress* 5 Pp 1-11 DOI: [10.1177/2470547021991556](https://doi.org/10.1177/2470547021991556)**

EAAT holds promise as adjunctive complementary interventions for symptom reduction among Veterans with PTSD. Additionally, there is evidence that these approaches may enhance wellbeing in this population. The authors of this work provide recommendations as a roadmap to move the field forward. These include standardizing the EAAT nomenclature, focusing mechanism of action studies on the human-horse bond using biological metrics and using a standardized intervention model across studies.

- **(**) Pawluczuk, P., Kusz, M., Maslak, A., Alzubedi, A. & Polski, P. (2020) Positive effects of Dog Assisted Therapy in the Pediatric Population. Journal of Education, Health and Sport. Online 10(5) Pp 128-132 DOI [10.12775/JEHS.2020.10.05.013](https://doi.org/10.12775/JEHS.2020.10.05.013)**

Most of studies confirmed that Autistic Spectrum Disorder, Down Syndrome or Cerebral Palsy may benefit from Dog Assisted Therapy. It is important to emphasise the role of Dog Assisted Therapy in improving children mental and physical development.

- **(**) Roberts, H. & Honzel, N. (2020) The effectiveness of equine-facilitated psychotherapy in adolescents with serious emotional disturbances. Anthrozoös 33(1) Pp 133-44 DOI: [10.1080/08927936.2020.1694317](https://doi.org/10.1080/08927936.2020.1694317)**

The current study compared the effectiveness of equine-facilitated psychotherapy (EFP) and traditional group therapy (TGT – who received a trauma focused cognitive behavioral therapy (TF-CBT) model) on levels of positive and negative affect in adolescents with SED. Both the equine and traditional group therapies focused on one TF-CBT sequence each week; the order was psychoeducation, stress management, affect expression/modulation, cognitive coping, cognitive processing, behavior management, and trauma narrative. 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. 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.

- **(**) Santaniello, A., Garzillo, S., Amato, A., Sansone, M., Di Palma, A., Di Maggio, A., Fioretti, A. & Menna, L.F. (2020) Animal-assisted therapy as a non-pharmacological approach in Alzheimer's disease: a retrospective study. Animals (Basel) 10(7) Pp 1-10 doi: [10.3390/ani10071142](https://doi.org/10.3390/ani10071142)**

The purpose of this study was to apply, over a long period of time (2012–2019), AAT interventions adapted to reality orientation therapy (ROT), in groups of patients with mild-to-moderate Alzheimer's disease. The results obtained in the present study show an improvement in both cognitive function and mood of patients who carried out the therapy with the dog. In conclusion, we can therefore affirm how the study conducted confirms the potential of animal-assisted therapy as a non-pharmacological therapy in the treatment of deficits deriving from Alzheimer's disease patients.

- **(**) Willmund, G., Zimmermann, P., Alliger-Horn, C., Varn, A., Fischer, C., Parent, I., Sobottka, A., Bering, R., Rose, C., Ströhle, A. & Köhler, K. (2021) Equine-assisted psychotherapy with traumatized couples – Improvement of relationship quality and psychological symptoms. Journal of marital and family therapy 47(4) Pp 925-44 DOI: [10.1111/jmft.12485](https://doi.org/10.1111/jmft.12485)**

Equine-assisted psychotherapy was applied in this Program was designed specifically for soldiers and their spouses. 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.

- **(**) Wołyńczyk-Gmaj, D., Ziółkowska, A., Rogala, P., Ścigała, D., Bryła, L., Gmaj, B., Wojnar, M. (2021) Can Dog-Assisted Intervention Decrease Anxiety Level and Autonomic Agitation in Patients with Anxiety Disorders? J. Clin. Med. 10(21) Pp5171 DOI:[10.3390/jcm10215171](https://doi.org/10.3390/jcm10215171)**

We investigated the influence of an Animal-Assisted Intervention on patients with mental disorders, specifically it's impact on anxiety symptoms. For anxious patients, a short walk with a dog is more beneficial than a walk without one. We found significant positive effects of a dog's company on vegetative arousal and mental comfort. This is another study confirming the possible therapeutic effect of the animal on anxiety symptoms.

- **(**) Zhu, X., Suarez-Jimenez, B., Zilcha-Mano, S., Lazarov, A., Arnon, S., Lowell, A.L., Bergman, M., Ryba, M., Hamilton, A.J., Hamilton, J.F., Turner, J.B., Markowitz, J.C., Fisher, P.W. & Neria, Y. (2021) Neural changes following equine-assisted therapy for posttraumatic stress disorder: A longitudinal multimodal imaging study. *Hum Brain Mapp* 1–10 DOI: [10.1002/hbm.25360](https://doi.org/10.1002/hbm.25360)**

This exploratory study is the first to demonstrate that EAT can affect functional and structural changes in the brains of patients with PTSD. The data gathered revealed significant brain changes in the limbic-basal ganglionic reward system along with sustained improvement in PTSD symptoms. The findings suggest that EAT may target reward circuitry responsiveness and produce a caudate pruning effect from pre- to post-treatment.

- **Almasloukh KB. (2022) Equine-assisted activities and therapies: state-of-the-art review. *Nurs Sci Q.* 35(1) Pp92–100 <https://doi.org/10.1177/08943184211051367>**

Limited studies examined the effect of equine-assisted activities and therapies on cancer survivors, although preliminary data were promising. EAAT may facilitate improving Quality of Life (QOL) in all four adaptation modes.

- **Almasloukh K. B., Fahs P. S. (2020) Are nurses joining the ride? Equine assisted activities and therapies review. *People and Animals: The International Journal of Research and Practice* 3 Pp1-16 <https://docs.lib.purdue.edu/paij/vol3/iss1/3>**

The question - What is known about EAAT from a nursing and rural perspective for vulnerable populations? Although hippotherapy research tends to have stronger study designs, most of the reviewed studies were descriptive, not randomized- control trials. Although sociologists, psychotherapists, and physiotherapists are using this complementary therapy and publishing in this field, nurses have made minimal contributions to date. As an avenue for improving health, nurses should consider conducting EAAT research.

- **Alviana, F. Yueh-Juen Hwu², and Jiun-lung Lei (2020) The Effectiveness Of Animal Assisted Therapy On Social Interaction: A Meta-Analysis *Indonesian Journal of Global Health Research* 2(4) Pp 315 – 326 <http://jurnal.globalhealthsciencegroup.com/index.php/IJGHR>**

The purpose of this meta-analysis was to present the best available evidence regarding the effects of AAT on social interaction including blood pressure, cognitive function, and communication. Searched relevant articles published between 1984 and 2014. The result of the meta-analysis indicated that AAT had an effect on increasing communication. The results were not statistically significant for blood pressure and cognitive function. Highlights the need for additional well-designed trials to draw conclusions that are more robust.

- **Anderson, D. & Brown, S. (2021) The effect of animal-assisted therapy on nursing student anxiety: a randomized control study. *Nurse in Education Practice* 52:103042 doi: [10.1016/j.nepr.2021.103042](https://doi.org/10.1016/j.nepr.2021.103042)**

This study uses a convenience sample randomly assigned to a control and intervention group with a pre-pre, pre, post and post-post-test using the Spielberger State-Trait Anxiety Inventory. The intervention group experienced a therapy dog intervention prior to the medication dosage calculation exam. A brief interaction with therapy dogs prior to a medication calculation exam decreased anxiety in a convenience sample of nursing students. This study adds empirical knowledge to the field of animal-assisted therapy and nursing student anxiety-coping methods.

- **Arnon, S. et al (2020) Equine-Assisted Therapy for Veterans with PTSD: Manual Development and Preliminary Findings *Military Medicine* 185(5-6) Pp 557-564 <https://doi.org/10.1093/milmed/usz444>**

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. 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.

- **Bilginoğlu, E. (2021) Equine-Assisted Experiential Learning on Leadership Development. International Journal of Organizational Leadership 10 (Special Issue-2021) Pp 3-16 DOI:10.33844/ijol.2021.60532**

Equine-assisted leadership development programs promote skills critical to being an influential leader, the present paper provides an insight into equine-assisted experiential learning on leadership development, provides an overview on what happens in a typical equine-assisted experiential learning session, and suggests practical implications for researchers and organizations. The findings of the present study confirm that horses are a natural model for leadership, and that the human-horse relationship constitutes a creative exemplar that teaches leaders to be attentive to behaviours, needs, actions and reactions of those with whom they engage. Since the participation in the equine-assisted learning programs seem to have a primarily positive impact on teaching responsibility, caring, communicating as well as patience, empathy, trust, respect, confidence, attentiveness to others, conflict resolution through development in creative arts of persuasion, better communication skills, several emotional intelligence competencies, social skills, perceived sense of mastery, optimism, self-efficacy, self-awareness, self-confidence and team-building, there is no doubt that the skills the leaders develop in equine-assisted programs impact an organization's bottom line.

- **Brown, S., Snelders, J., Godbold, J., Moran-Peters, J., Driscoll, D., Donoghue, D., Mathew, L. & Eckardt, S. (2020) Effects of animal-assisted activity on mood states and feelings in a psychiatric setting. J Am Psychiatr Nurses Assoc. 26(6) Pp 555-567 doi: 10.1177/1078390319853617**

This study used a quasi-experimental, pre-/post-test design with non-equivalent comparison groups. The intervention used in this research study was interaction with a therapy dog and its handler. Since the goal was to see how the interaction affected moods and feelings of patients and staff attending AAA, minimal interaction with the investigators was agreed on during the activity.

Significant changes were observed pre- and post-exposure to AAA sessions with a therapy dog. Negative moods decreased, and positive moods increased as measured by the Visual Analog Mood Scale. Content analysis identified themes of feeling happy, feeling relaxed, and feeling calm.

- **Chakales, P.A., Locklear, J. & Wharton, T. (2020) Medicine and Horsemanship: The Effects of Equine-assisted Activities and Therapies on Stress and Depression in Medical Students. Cureus 12(2) :e6896 DOI 10.7759/cureus.6896**

The study was conducted at a Professional Association of Therapeutic Horsemanship International (PATH Intl.) certified therapeutic riding center. Participation in the course significantly reduced perceived stress, depression, stress severity, and stress frequency among medical students. This approach should be further investigated as an option for improving well-being among medical students.

- **Chen, C.R., Hung, C.F., Lee, Y.W., Tseng, W.T., Chen, M.L. & Chen, T.T. (2022) Functional outcomes in a randomized controlled trial of animal-assisted therapy on middle-aged and older adults with schizophrenia. Int J Environ Res Public Health 19(10) Pp 6270 doi: 10.3390/ijerph19106270**

The AAT group of middle-aged patients with schizophrenia showed a greater increase in lower extremity strength and social skills, but no improvement in cognitive function, agility, or mobility. Further research with more sensitive evaluations and longer follow-up is needed. Good randomized controlled trial.

- **Chirico, F, Capitanelli, I., Nowrouzi-Kia, B., Howe, A., Batra, K., Sharma, M. Szarpak, L. Pruc, M., Nucera, G. Ferrari, G. Cortese, C.G., Gianino, M, & Acquadro-Maran, D. (2022) Animal-assisted interventions and post-traumatic stress disorder of military workers and veterans: A systematic review. Journal of Health and Social Sciences 7(2) Pp152-180 Doi: 10.19204/2022/NMLS4**

Systematic Review in Occupational Health Psychology Most of the AAls were canine-assisted programs (n=12) and therapeutic horseback riding or equine-assisted psychotherapy (n=11). There was only one intervention study utilizing a pinnipeds-based program (n=1, dolphins'), while one study was based on several types of animals (n=1). The majority of the studies reported significantly lower PTSD symptomatology following AAls.

- **Compitus, K. (originally pub 2019, online 2021) The Process of Integrating Animal-Assisted Therapy into Clinical Social Work Practice Clin Soc Work J 49 Pp 1–9 DOI: [10.1007/s10615-019-00721-3](https://doi.org/10.1007/s10615-019-00721-3)**

This paper explores the process of integrating AAT into direct clinical practice and the theoretical basis for utilizing AAT as an adjunctive treatment model. This paper outlines the process of implementing AAT as an adjunctive model that can be used in conjunction with CBT, DBT, Psychodynamic Psychotherapy, or other models. The primary reason to integrate AAT into clinical practice is to build a faster rapport, to encourage the parallel process, to increase the client's sense of safety and security, and to build a stronger holding environment. Other reasons may be that the therapy animal serves as a motivation for the client to return to therapy each week, interactions with the therapy animal may service as a discussion point for psychoanalytic work, may help illustrate behavioral skill building, or help the client more quickly alter cognitive distortions.

- **Dargan, S. (2021) Animal Assisted Therapy: It's Implications among Disorders, for Therapeutic Practice, and in Health and Wellbeing J Psychological Research 3:3 DOI: <https://doi.org/10.30564/jpr.v3i3.3181>**

The article is a concise literature review to provide a general understanding of the perceived benefits of Animal Assisted Therapy (Counselling and Support) and includes topics that are categorised as an Introduction to Animal Assisted Therapy: how it can help people with disorders, it's utilisation in therapeutic practice and its relation to our health and well-being.

The majority of the articles in this review came from peer-reviewed scientific journals, with some online resources incorporated to provide the entire scope of the subject.

Relevant data was summarized and collated to make a narrative account of the findings that animal in the therapy would not make it more difficult, but rather make it easier (to) have a better emotional and physical healing experience by the patient.

Animals can improve the healing experience mentally and physically by making it more available to clients.

- **Guzman, E.G. et al (2022) The Benefits of Dog-Assisted Therapy as Complementary Treatment in a Children's Mental Health Day Hospital Animals 12 Pp 2841 doi.org/10.3390/ani12202841**

This program was associated with positive impacts on factors including reduced emotional and behavioral outbursts and improved socialization behavior observed by therapists in the day hospital setting. The children who participated in the study and received DAT interventions presented a lower number of emotional and behavioral outbursts during their stay in the DH unit. In addition, it was quantified that the days on which DAT was administered in the unit, the attendance rate of the children improved. The clinicians observed some improvement in self-control and social skills following the treatment, but this cannot be attributed to the incorporation of DAT into DH (because the implementation of DAT did not imply the cessation of conventional therapies.)

- **Haig, L. & Skinner, K. (2022) Use of Equine-Assisted Services to Improve Outcomes Among At-Risk and Indigenous Youth: A Scoping Review. Frontiers in Public Health Mar 28:10:730644 doi: [10.3389/fpubh.2022.730644](https://doi.org/10.3389/fpubh.2022.730644)**

Overall findings of the review suggest EAS (Equine Assisted Services) 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.

- **Harvey, C., Jedlicka, H. & Martinez, S. (2020) A Program Evaluation: Equine-Assisted Psychotherapy Outcomes for Children and Adolescents. Child and Adolescent Social Work Journal 37 Pp 665–675 doi.org/10.1007/s10560-020-00705-0**

This study evaluates early outcomes of a program in the Midwest United States adhering to the Equine Assisted Growth and Learning Association (EAGALA) model of equine-assisted psychotherapy (EAP) involving a licensed mental health professional, an equine specialist, and horses or donkeys in the service provision. Overall, results are

mixed with several promising findings that require more exploration. Some participants demonstrated significant improvement in both primary and composite scales that served as a framework for pre and post testing and included: anxiety, social skills, study skills, anger control, aggression. The authors discuss ways to augment the effectiveness of program evaluation in EAP.

- **Hediger, K., Wagner, J., Künzib, P., Haefelia, A., Theisa, F., Groba, C., Paulia, E. & Gerger, H. (2021) Effectiveness of animal-assisted interventions for children and adults with post-traumatic stress disorder symptoms: a systematic review and meta-analysis. *European Journal of Psychotraumatology* 12, 1879713 <https://doi.org/10.1080/20008198.2021.1879713>**

There was a small but not statistically significant superiority of AAI over standard PTSD psychotherapy. Pre-post comparisons showed large variation for the reduction in PTSD symptom severity. The results indicate that AAI are efficacious in reducing PTSD symptomatology and depression. Future studies with robust study designs and large samples are needed for valid conclusions.

- **Holder, T.R.N, Gruen, M.E., Roberts, D.L., Somers, T. & Alper Bozkurt, A. (2020) A Systematic Literature Review of Animal-Assisted Interventions in Oncology (Part I): Methods and Results *Integrative Cancer Therapies* 19: 1534735420943278 DOI: 10.1177/1534735420943278**

We find methodological consistency in the use of canines as therapy animals, in the types of high-risk patients excluded from studies, and in the infection precautions taken with therapy animals throughout cancer wards. The investigated patient endpoints are not significantly affected by AAI, with the exceptions of improvements in oxygen consumption, quality of life, depression, mood, and satisfaction with therapy.

- **van Houtert, E.A.E., Rodenburg, T.B., Vermetten, E. & Endenburg, N. (2022) The Impact of Service Dogs on Military Veterans and (Ex) First Aid Responders With Post-traumatic Stress Disorder. *Frontiers in Psychiatry* 13:834291 doi: 10.3389/fpsy.2022.834291**

This study found that veterans and first aid responders with PTSD who had a service dog showed significantly less PTSD related symptoms, better sleep quality, and better wellbeing experience, than those with a companion dog. Those with a service dog additionally experienced fewer PTSD related symptoms than those without a service dog and tended to walk more than individuals without PTSD. No differences were found in cortisol levels between groups though and changes in both salivary cortisol and activity were not linked to improved welfare experience. Though the use of physiological measurement methods thus warrants more research, our study indicates that the subjective experience of wellbeing, sleep quality and PTSD related symptoms is improved by the presence of a service dog.

- **Jensen, K.C. & Rostosky, S.S. (2021) Sexual assault survivors' experiences and perceptions of equine facilitated therapeutic activities. *Practice Innovations*. 6(4) Pp 251-262 <https://doi.org/10.1037/pri0000158> (Abstract in Word only)**

We systematically explored the perceived benefits experienced by 12 women who participated in the Equine Assisted Survivors of Trauma (EAST) group for sexual assault survivors. Findings from a thematic analysis of data (Braun & Clarke, 2006) indicated that participants experienced the equine therapeutic environment as restorative. They also described benefits of working with the horses that included positive emotional experiences, increased insight and awareness, and improved relationship skills. These findings suggest specific elements of EFP that may be particularly useful and impactful for trauma survivors and deserving of further research.

- **Jung, T., Park, P., Kwon, J-Y. & Sohn, S. (2022) The Effect of Equine Assisted Learning on Improving Stress, Health, and Coping among Quarantine Control Workers in South Korea. Healthcare 10 1564**
<https://doi.org/10.3390/healthcare10081564>

Foot-and-Mouth Disease (FMD) and Avian Influenza (AI) frequently occur in South Korea, resulting in high levels of occupational stress among quarantine workers forced to partake in massive livestock killings. This study explored the usefulness of Equine Assisted Learning (EAL) (HAI?) in improving these workers' psychological and emotional functioning. EAL provides experiential learning to increase participants' social functioning through unmounted (ground) and mounted (riding) activities to gain insight, self-awareness, empathy, confidence, a sense of accomplishment through problem-solving, and increased interpersonal skills. Hence, EAL is different from casual horseback riding or simple rapport training. In addition, these activities aimed to increase self-control, accomplishment, and problem-solving ability.

Participants' overall quality of life improved in six health domains measured by the SF-36 health survey. Most improvement was observed in the limitations in usual role activities due to emotional problems and vitality (energy and fatigue), followed by general mental health (psychological distress and well-being), social activities due to physical or emotional problems, usual role activities due to physical health problems and general health.

In summary, (1) the overall stress levels of our participants were significantly reduced after participating in the EAL program; (2) participants' tendency to pursue problem-solving based strategies and social support improved while using less avoidance-oriented strategies; and (3) positive changes were observed in various life domains, including both mental health and physical aspects (e.g., vitality).

- **Kovacs, G., van Djike, A. & Enders-Slegers, M.J. (2020) Psychodynamic Based Equine—Assisted Psychotherapy in Adults with Intertwined Personality Problems and Traumatization: A Systematic Review. International Journal of Environmental Research and Public Health 17 (16) Pp 5661**
[doi:10.3390/ijerph17165661](https://doi.org/10.3390/ijerph17165661)

This systematic review examines the existing clinical studies in adult populations on psychodynamic psychotherapy combined with equine-assisted psychotherapy.

The methodological limitations of most of the studies restrain the overall findings on outcome. However, overall positive effects for EAP, specifically on its experiential features and on finding interpersonal trust for patients, can be discerned. There is an apparent need for clinical studies meeting methodological standards on psychodynamic underpinned EAP methodologies in adults with intertwined personality problems and traumatization.

- **Lavín-Pérez, A.M., Beatriz Rivera-Martín, B., Lobato-Rincón, L.L., Villafaina-Dominguez, S. and Collado-Mateo, D. (2022) Benefits of animal-Assisted interventions in preschool children: A systematic review Clinical Child Psychology & Psychiatry 28(2) Pp 850-873** <https://doi.org/10.1177/135910452211421>

The heterogeneity of AAI studies in preschool children is large, including different health conditions, duration, outcomes, study design or therapy animals. Therefore, the current study aims to summarize all intervention procedures and provide an updated analysis of the effectiveness of AAI intervention in the early childhood. Animal-assisted interventions might lead to a positive impact on physical, physiological, psychosocial, and language skills in preschool children. These enhancements may be observed both in healthy children and in those with different health conditions, such as intellectual disabilities, cerebral palsy, autism disorder, or Down syndrome.

- **McFalls-Steger, C., Patterson, D. & Thompson, P. (2021) Effectiveness of animal-assisted interventions (AAIS) in treatment of adults with depressive symptoms: A systematic review. Human-Animal Interaction Bulletin 12(2) Pp 46-64** [no DOI](#)

Overall, research design quality was low, but AAI had a statistically significant effect on outcomes in most studies. Results are moderately favorable but more thorough, standardized, and controlled research is needed.

- **Parbery-Clark, C., Lubamba, M., Tanner, L. & McColl, E. (2021) Animal-Assisted Interventions for the Improvement of Mental Health Outcomes in Higher Education Students: A Systematic Review of Randomised Controlled Trials. Int. J. Environ. Res. Public Health 18, 10768**
<https://doi.org/10.3390/ijerph182010768>

The aim of this systematic review was to evaluate the effectiveness of Animal-Assisted Interventions (AAls), particularly Animal-Assisted Therapy (AAT) and Animal-Assisted Activity (AAA), in improving mental health outcomes for students in higher education.

Primary Outcomes: Anxiety

Using vote counting, according to direction of effect and not statistical significance as described in the methods, all seven studies showed a beneficial effect in favour of the intervention compared to the comparator.

Primary Outcome: Stress

Two studies were assessed, both showed a statistically significant reduction in stress when measured within 24 hrs of the intervention. This effect was not sustained at the two-week follow-up for the one study that included longer follow-up. Therefore, these studies showed cautious preliminary evidence of a short-term, statistically significant, beneficial effect on stress, using AAls.

Secondary Outcomes: Depression, Mood/Affect and Well-Being

The evidence for depression and mood is mixed. Where a non-statistical significance was shown, a power calculation was not included. Therefore, these studies may have been underpowered (i.e. incorrect statistical methods used).

Three studies measured well-being using various tools. Tentative but mostly beneficial effects were found in varying measures of well-being when measured immediately after or within 24 h of the AAI. Where a non-statistically significant effect was found, the outcomes were measured within 24 h of the intervention during mid-term exam season.

Potential emerging evidence for the short-term benefits of AAI for anxiety, and possibly stress, for students in higher education was found.

- **de Paula, G.M., Costa, M.C.C., Santana, B., Martins, M.D.L. & Resende, R.F. de B. (2021) Dog Assisted Therapy: When Can We Indicate To Our Patients? Int. J. Sci. Dentistry**
<http://www.periodicos.uff.br/index>

The results showed the possibility of implementing DAT in different configurations such as hospitals, nursing homes, clinics or schools and demonstrated the beneficial potential of this intervention for physical, mental and emotional rehabilitation. It is concluded that, with the Assisted Therapy by Dogs, the general health of the patient is benefited and the therapeutic procedures are facilitated, being even dispensed, or minimized, the use of medications to control anxiety during the procedures.

- **Rosing, T., Malka, M., Brafman, D & Fisher PW. (2022) A qualitative study of equine-assisted therapy for Israeli military and police veterans with PTSD—impact on self-regulation, bonding and hope. Health & Social Care in the Community. 30(6) e5074-82 DOI: 10.1111/hsc.13922**

Based on a qualitative-phenomenological study, interviews were conducted with 12 PTSD patients who had completed an EAT-based intervention programme. From these, three main themes characterising the meanings they gave to participation in an EAT-based treatment programme 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 programme 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.

- **Vakrinou, P. & Tzonichaki, I. (2020) Animal Assisted Therapy & Occupational Therapy (Review). Health & Research Journal 6:3** [doi: 10.12681/healthresj.25152](https://doi.org/10.12681/healthresj.25152)

The Occupational Therapist, by introducing an animal to his sessions and using it as a therapeutic tool to achieve communicative, motor, mental, emotional and sensory goals can greatly benefit the patient. Existing studies appear to confirm the efficacy of animal assisted therapy. (See Velde BP, et al (2005) Resident and therapist views of animal-assisted therapy: Implications for occupational practice. Aust Occup Ther J; 52 Pp43-505)

- **Ward, J., Hovey, A. & Brownlee, K. (2022) Mental health benefits of mounted equine-assisted therapies: A scoping review. Health & social care in the community 30(6) Pp e4920-35** [DOI: 10.1111/hsc.13904](https://doi.org/10.1111/hsc.13904)

This scoping review explored whether mounted activities, specifically where the client rides the horse, contribute to distinct therapeutic benefits. The results of these studies suggest that mounted activities positively contribute to a variety of issues experienced by different client groups. However, further quality research is needed to carefully examine riding activities as an independent phenomenon, in order to establish what contribution-mounted activities, over and above groundwork, make to any therapeutic benefit of the EAT experience.

- **(**) Bachi, K. (2014) An equine-facilitated prison-based program: Human-horse relations and effects on inmate emotions and behaviors. CUNY Academic Works. Thesis The Graduate School and University Center, the City University of New York. Retrieved from** http://academicworks.cuny.edu/gc_etds/162

Quantitative findings suggest that program participants have a statistically lower chance to recidivate as compared with the control group.

Qualitative findings show the roles of human-horse relations within prison-context. Emotional features highlight the importance of providing alternative opportunities to experience companionship, which may help inmates process their relational issues and improve competencies. Additionally, the program helps inmates to cope with psychological impact of imprisonment. Behavioral features demonstrate how the program allows inmates to perform as mature individuals while being involved in meaningful activities, which can generate pro-social skills. Social learning exhibit how participants interpreted herd dynamics by projecting human interactions on horses. These could be further discussed to enhance social awareness and develop alternative approaches toward social situations. Furthermore, participants' evaluation of the program and vocational features reveal vocational skills that may be transferable to other settings. Adding an intervention that would help bridge between experiences in the program and other vocations after release could enhance the program's broad impact.

- **(**) Bachi, K. & Parish-Plass, N. (2017) Animal-assisted psychotherapy: A unique relational therapy for children and adolescents. Clinical Child Psychology and Psychiatry 22(1) Pp3-8** [DOI 10.1177/1359104516672549](https://doi.org/10.1177/1359104516672549)

AAP is utilized with various populations across the lifespan, such as at-risk children and youth (Bachi et al., 2012; Balluerka, Muela, Amiano, & Caldentey, 2015; Parish-Plass, 2008; Tedeschi, Sisa, Olmert, Parish-Plass, & Yount, 2015), pervasive developmental disorders (O'Haire, 2012), psychiatric patients (Nathans-Barel, Feldman, Berger, Modai, & Silver, 2005), war veterans (Yount, Ritchie, St. Laurent, Chumley, & Olmert, 2013), and prison-inmates (Bachi, 2013b, 2014). It may be applied in the context of various theoretical frameworks and clinical approaches, such as attachment theory (Bachi, 2013a; Balluerka, Muela, Amiano, & Caldentey, 2014; Zilcha-Mano, Mikulincer, & Shaver, 2011), intersubjectivity (Parish-Plass & Oren, 2013), Jung (Maayan, 2013), psychodynamic therapy (Parish-Plass, 2013a), gestalt (Kirby, 2010; Lac, 2016), cognitive therapy (González-Ramírez, Ortiz, & Landero-Hernández, 2013), and eye movement desensitization and reprocessing (EMDR) (Jenkins, 2014, 2016).

- **(**) Calvo, P., Fortuny, J.R., Guzmán, S., Macías, C., Bowen, J., García, M.L., Orejas, O., Molins, F., Tvarijonaviciute, A., Cerón, J.J. & Bulbena, A. (2016) Animal Assisted Therapy (AAT) Program As a Useful Adjunct to Conventional Psychosocial Rehabilitation for Patients with Schizophrenia: Results of a Small-scale Randomized Controlled Trial. *Front Psychol* [Internet] 7 Article 631 <https://www.frontiersin.org/articles/10.3389/fpsyg.2016.00631>**

The aim of this study is to assess the effect of an AAT program as an adjunct to a conventional 6-month psychosocial rehabilitation program for people with schizophrenia. At the end of the program, both groups (control and AAT-treatment) showed significant improvements in positive and overall symptomatology, as measured with PANSS, but only the AAT-treatment group showed a significant improvement in negative symptomatology. Cortisol level was significantly reduced after participating in an AAT session.

- **(**) Carlsson, C. (2018) Equine-assisted social work counteracts self-stigmatisation in self-harming adolescents and facilitates a moment of silence. *Journal of Social Work Practice* 32(1) Pp 17–30 DOI: [10.1080/02650533.2016.1274883](https://doi.org/10.1080/02650533.2016.1274883)**

(Also in At Risk Youth) The purpose of this study was to determine whether equine-assisted social work (EASW) could affect self-stigmatisation and thereby counteract false identities in self-harming adolescents. The analysis indicated that the horse had a calming effect on the clients; enabled them to free themselves of their preoccupations; provided real-time, non-verbal and non-judgmental feedback on their emotions; and increased feelings of trust, patience and empathy. The presence of a horse provided a ‘moment of silence’ for the clients, silencing their inner critic, and made them feel more authentic and better able to regulate their emotions. However, staff could counteract this ‘safe’ healing by being too focused on goals, making interpretations and lecturing and encouraging clients, thus making clients feel judged anyhow. EASW seemed to give clients the opportunity to break free from self-stigmatisation, which seemed to lower the barrier to change.

- **(**) Hoffmann, A.O.M., Lee, A.H., Wertenauer, F., Ricken, R., Jansen, J.J., Gallinat, J. & Lang, U.E. (2009) Dog-assisted intervention significantly reduces anxiety in hospitalized patients with major depression. *European Journal of Integrative Medicine* 1(3) Pp 145-148 <https://doi.org/10.1016/j.eujim.2009.08.002>**

(Summary only in Word) In this pre- and post-treatment controlled crossover study we measured state anxiety with the State-Trait Anxiety Inventory (STAI). Twelve acutely depressed patients participated. The STAI state score was significantly reduced after the presence of a dog (for 30 minutes), which was not the case after the control condition without the presence of a dog.

- **(**) Kemp, K., Signal, T., Botros, H., Taylor, N. & Prentice, K. (2014) Equine Facilitated Therapy with Children and Adolescents Who Have Been Sexually Abused: A Program Evaluation Study. *J Child Fam Stud* 23 Pp 558–566 DOI [10.1007/s10826-013-9718-1](https://doi.org/10.1007/s10826-013-9718-1)**

The aim of the current study was to evaluate the efficacy of an Equine Facilitated Program used as an adjunct therapy to treat children and youths who have experienced sexual abuse. It was hypothesised that participants would show significant reduction in symptoms of depression, anxiety, undesirable behaviours and trauma after completing the EFT program. The results supported this hypothesis with both children and adolescents, regardless of gender or ethnicity, showing a significant improvement in data collected post-EFT compared to scores collected prior to commencing the program. Overall, the current study has demonstrated that Equine Therapy using EAGALA methods is an effective therapeutic approach when working to alleviate trauma symptoms for children and adolescents who have been sexually abused.

- **(**) Meinersmann, K.M., Bradberry, J. & Roberts, F.B. (2008) Equine-facilitated psychotherapy with adult female survivors of abuse. Journal of Psychosocial Nursing and Mental Health Services 46(12) Pp 36–42 [no DOI](#)**

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. 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.

- **(**) Perkins, B. L. (2018) A Pilot Study Assessing the Effectiveness of Equine-Assisted Learning with Adolescents. Journal of Creativity in Mental Health 13(3) Pp 298-305 <https://doi.org/10.1080/15401383.2018.1427168>**

(EAL only) This study contains an observation of six female participants 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. Results indicated that participants showed improvement in communication, confidence, and respect scores. The participants demonstrated improvements with emotional regulation.

The theoretical implications of this research support that AAT models can be an effective form of treatment for developing specific life skills. Even with a small sample size, this study demonstrated improvement in positive behaviours and character strengths. The results supported all the hypothesis suggestions that EAL programs increase communication, confidence, respect, and emotional regulation.

Furthermore, the study demonstrated that participants gained improved understanding and work ethic during this program. The results of this psychoeducational program suggest that the participants were able to connect the content of the session to real life skills. Participants who were involved in the programs developed competencies in a safe setting—a setting they chose to actively engage in by their own choice.

- **(**) Powell, L., Edwards, K.M., McGreevy, P., Bauman, A., Podberscek, A., Neilly, B., Sherrington, C. & Stamatakis, E. (2019) Companion dog acquisition and mental well-being: A community-based three-arm controlled study. BMC public health 19 Pp 1-10 [no DOI](#)**

After randomization to either the service dog intervention or emotional support dog intervention, an observation period of at least three months duration began; during this period both the study team and the participants were blinded to the type of dog to which the participant had been randomized. Dog type assignment disclosure to the participant and the study team occurred upon completion of the observation period. Participants were then followed for 18 months.

Primary outcome measures: While both groups appeared to have experienced some benefit, an improvement in overall disability and quality of life among Veteran participants with PTSD was not observed with the provision of a service dog relative to provision of an emotional support dog (but was observed in both groups). (i.e. veterans showed improvements in the presence of a dog, whether service or emotional support).

Secondary outcome measures: Participants paired with a service dog experienced a reduction in the severity of PTSD symptoms compared to participants paired with an emotional support dog, and had fewer suicidal behaviors and ideations, particularly at 18 months post- pairing. Stats description below.

After adjusting for baseline score, center, and gender, the linear mixed repeated measures (LMRM) model for WHO-DAS 2.0 (disability) showed no statistical difference between the two intervention groups nor did the mixed

models for quality of life (VR-12) show statistical differences between the two groups for either PCS (physical health) or MCS (mental health).

Of the secondary outcome measures, only PCL-5 (PTSD symptoms) using the adjusted LRMR model showed a statistically significant difference between intervention groups. Participants receiving the service dog intervention had a 3.7-point improvement (lower score=less symptoms of PTSD) in the PCL-5 total score over time as compared to the emotional dog intervention.

Contrasts testing for a difference in the service dog group versus the emotional support dog group for suicidal ideation and behavior (per C-SSRS) did not show a significant difference between groups across time, however, it did show a difference between groups at 18 months with the service dog group having fewer suicidal behaviors and ideation. In both groups, WHO-DAS 2.0 scores at 18 months decreased (less disability) from scores at 3 months post pairing; improvement in VR-12 MCS also showed some improvement over time in both groups.

Descriptive statistics for sleep and anger also showed a decline in scores (improvement) over time in both groups. Serious Adverse Events (SAE) and adverse events (AE) were compared across groups. None of the SAEs in either group were dog related. All AEs occurred in the emotional support dog group.

- **(**) Seredova, M., Maskova, A., Mrstinova, M. & Volicer, L. (2016) Effects of Hippotherapy on Well-Being of Patients With Schizophrenia. Archives of Neuroscience 3(4) Pp 1–5 [doi: 10.5812/archneurosci.39213](https://doi.org/10.5812/archneurosci.39213).**

25 patients with paranoid schizophrenia, or acute and transient psychotic disorders attended 90 minutes hippotherapy sessions two days a week for a period of three weeks. We evaluated effects of hippotherapy on well-being of patients defined as a state that has five characteristics - excellent mood, the feeling of total relaxation, no sense of fear, a willingness to establish contacts, and willingness to communicate. Hippotherapy increased well-being and the differences between the well-being scores before and after the treatments increased with treatment repetitions. The effect hippotherapy was statistically significant for all well-being characteristics except for tension in the first treatment and contact in the second treatment.

Conclusions: These results indicate that hippotherapy is a useful psychotherapeutic strategy for patients with schizophrenia and other psychotic disorders.

- **(**) Waite, T.C., Hamilton, L. and O'Brien, W. (2018) A meta-analysis of animal assisted interventions targeting pain, anxiety and distress in medical settings. Complementary Therapies in Clinical Practice 33 Pp49–55 [DOI??](#)**

(Also in Pain category) (Summary only in word) The results of this meta-analysis suggest that AAI can be an effective intervention that can bring about large changes in pain, distress, and anxiety. Further, these large intervention effects were evident in treatment-control group comparisons and in pre-post comparisons.

- **Adams, N. (2009) Animal Assisted Interventions for Adolescents with Emotional and Behavioural Problems: A Review of Selected Literature. A paper submitted in partial fulfilment of the requirements of the Postgraduate Diploma of Psychology [no DOI](#)**

(Summary of Thesis) Outcomes have included increased social skills, self efficacy, self esteem and emotional and behavioural regulation, lending support to social cognitive theory; reduced anxiety, in support of the biophilia hypothesis; reduced depression, in support of the biophilia and attachment/social provisions theories; and improved relationships with peers, which offers support to the attachment and social provisions theories, as well as the social cognitive factors of social skill development.

- **Alfonso, S.V., Alfonso, L.A., Llabre, M.M., Fernandez, M.I. (2015) Project stride: an equine-assisted intervention to reduce symptoms of social anxiety in young women. Explore 11 Pp 461–7 [doi: 10.1016/j.explore.2015.08.003](https://doi.org/10.1016/j.explore.2015.08.003)**

This is one of the few studies to use rigorous experimental procedures to examine the effect of an equine-assisted cognitive-behavioral intervention to reduce social anxiety among young women and to establish its acceptability and feasibility. Despite our small sample size, we found significant differences in social anxiety between the two groups in the hypothesized direction; participants in the experimental group had greater reductions in social anxiety than those in the control group.

- **Andreasen, G., Stella, T., Wilkison, M., Szczech Moser, C., Hoelzel, A. & Laura Hendricks, L. (2017) Animal-assisted therapy and occupational therapy. Journal of Occupational Therapy, Schools, & Early Intervention 10(1) Pp 1-17 [DOI: 10.1080/19411243.2017.1287519](https://doi.org/10.1080/19411243.2017.1287519)**

The goal of this review is to discuss the benefits of animal-assisted therapy to improve the health of children with disabilities, explore what types of populations and diagnoses may benefit from animal-assisted therapy, consider different types of animal-assisted therapy, and examine the uses of animals in a therapeutic process.

There is evidence to support the use of animal-assisted therapy in interventions with clients across the lifespan, especially clients in the pediatric population. In conjunction with traditional occupational therapy services, occupational therapists may utilize various forms of animal-assisted therapy as a modality to achieve OT goals. Research supports countless settings and diagnoses in which AAT facilitates significant gains on performance of daily activity, biomechanical aspects, and social and emotional well-being of the child. Diagnoses include attention deficit hyperactivity disorder, autism spectrum disorders, cerebral palsy, chronic pain, Down syndrome, fetal alcohol syndrome, and victims of neglect or abuse. These diagnoses have various levels of research that reach positive results during or following the use of animal-assisted therapy sessions.

- **Barker, S. B., & Dawson, K. S. (1998) The effects of animal-assisted therapy on anxiety ratings of hospitalized psychiatric patients. Psychiatric Services, 49(6) Pp 797–801 <http://psychservices.psychiatryonline.org/content/vol49/issue6/index.dtl>**

A pre- and posttreatment crossover study design was used to compare the effects of a single animal-assisted therapy session with those of a single regularly scheduled therapeutic recreation session. Conclusions: Animal-assisted therapy was associated with reduced state anxiety levels for hospitalized patients with a variety of psychiatric diagnoses, while a routine therapeutic recreation session was associated with reduced levels only for patients with mood disorders. The Reduction in anxiety scores for patients with psychotic disorders was twice as great after animal-assisted therapy as after therapeutic recreation.

- **Becker, J.L. (2014) Thesis - Presence of a Dog on Executive Functioning and Stress in Children with Emotional Disorders. Ph.D. Thesis, Fordham University, New York, NY, USA [no DOI](#)**

(Summary of Thesis) The data suggest that the presence of a dog helps youth with emotional disorders engage in Executive Functioning processes, an important finding given that EF plays an integral role in academic and social functioning.

- **Beetz, A., Winkler, N., Julius, H., Uvnäs-Moberg, K. & Kotrschal, K. (2015) A Comparison of equine-assisted intervention and conventional play-based early intervention for mother–child dyads with insecure attachment. Journal of Occupational Therapy, Schools, & Early Intervention 8(1) Pp 17–39 [DOI: 10.1080/19411243.2015.1026017](https://doi.org/10.1080/19411243.2015.1026017)**

Based on accumulating evidence of effectiveness of animal-assisted interventions, we implemented an Equine-Assisted Intervention (EAI) as an early intervention approach for mother–child-dyads and investigated its effects in comparison to a conventional play-based early intervention (PBI) in a randomized controlled trial. Both interventions took place once a week for 45 minutes over a period of 8 weeks and aimed at improving maternal

caregiving and security in the mother–child relationship. Overall both approaches led to significant improvements in mother–child relationship and interaction, both having specific advantages over the other. the choice, the majority of mothers would prefer EAI, which points to a potential motivational effect.

- **Berget, B., Ekeberg, Ø., & Braastad, B.O. (2008). Animal-assisted therapy with farm animals for persons with psychiatric disorders: effects on self-efficacy, coping ability and quality of life, a randomized controlled trial. Clin. Pract. Epidemiol. Ment. Health 4(9) doi: [10.1186/1745-0179-4-9](https://doi.org/10.1186/1745-0179-4-9)**

The present study aimed at examining effects of a 12-week intervention with farm animals on self-efficacy, coping ability and quality of life among adult psychiatric patients with a variety of psychiatric diagnoses. The treatment group received standard therapy (individual, group therapy or other kinds of therapy) and stable medical treatment in addition to the intervention. The control group got treatment as usual. The results of this study suggest that AAT with farm animals may be a useful addition to traditional psychiatric treatment, particularly for patients with affective disorders. Self-efficacy was higher at follow-up compared with baseline and at the end of the intervention in the treatment group but not in the control group. The patients with the highest increase in self-efficacy during intervention reported the largest increase in coping ability.

- **Berget, B., Ekeberg, Ø., Pedersen, I., and Braastad, B. O. (2011) Animal-assisted therapy with farm animals for persons with psychiatric disorders: effects on anxiety and depression, a randomized controlled trial. Occup. Ther. Ment. Heal. 27 Pp50–64 doi: [10.1080/0164212X.2011.543641](https://doi.org/10.1080/0164212X.2011.543641)**

This study examined the effects of Animal-Assisted Therapy with farm animals during a 12 weeks' intervention on anxiety and depression among psychiatric patients by using a randomized controlled trial with a follow-up investigation at 6 months. Anxiety measured using Spielberger State Anxiety Inventory did not decrease significantly during the intervention for the treatment group but was significantly lower at follow-up compared with baseline and with the end of the intervention. There was no significant change for the control group. Depression measured using Beck Depression Inventory was significantly lower at follow-up compared with baseline for both groups, but there were no significant differences between the groups.

- **Berget, B., Ekeberg, Ø., Pedersen, I., and Braastad, B. O. (2011). Animal-assisted therapy with farm animals for persons with psychiatric disorders. Ann Ist Super Sanità 47(4) Pp384-39 DOI: [10.4415/ANN_11_04_10](https://doi.org/10.4415/ANN_11_04_10)**

The present study aimed at examining effects of a 12-week intervention with farm animals on self-efficacy, coping ability and quality of life among adult psychiatric patients with a variety of psychiatric diagnoses. The treatment group received standard therapy (individual, group therapy or other kinds of therapy) and stable medical treatment in addition to the intervention. The patients visited a farm for three hours twice a week for 12 weeks to work with the farm animals. The patients were only working with the animals; they were not allowed to do other kinds of farm work. (By this I think they mean just contact with dairy cows, meat cattle, horses, sheep, or small animals like rabbits, poultry, pigs, cats or dogs as a part of the milieu on the farm. The patients were allowed to touch, groom, feed etc the farm animals.) The control group got treatment as usual. The conclusion - Animal-Assisted Interventions with farm animals for humans with psychiatric disorders may reduce depression and state anxiety, and increase self-efficacy, in many participants. The social support by the farmer is important. Positive effects are best documented for persons with affective disorders or, more specifically, clinical depression.

- **Bert, F., Gualano, M.R., Camussi, E., Pieve, G., Voglino, G. & Siliquini, R. (2016) Animal Assisted Intervention: A Systematic Review of Benefits & Risks. European J of Integrative Medicine 8(5) Pp 695-706 <http://dx.doi.org/10.1016/j.eujim.2016.05.005>**

This review focused on the use of 'therapeutic' animal programs for hospitalized patients, and considered the potential risks. Data was heterogeneous in terms of age of patient, health issue, animals used and the length of interactions, which made comparison problematic. Studies on children, psychiatric and elderly patients were the most common. The animal-intervention programs suggested various benefits such as reducing stress, pain and

anxiety. Other outcomes considered were changes in vital signs, and nutritional intake. Most studies used dogs, but other animals were effectively employed.

- **Bîlbă, A.N. (2015) Equine Therapy – Applications in the recovery of disabled children. Journal of Experiential Psychotherapy 18(4) Pp 46–53 [no DOI](#)**

This research aims at demonstrating that therapy with the help of horses - hippotherapy is a method that produces positive effects on the acquisition of skills necessary to children with psycho-motility disabilities.

The form for groups aged 0 to 5 comprises the following skill areas: communication, community use, functional academics, home living, health and safety, leisure, self-care, self-direction, social and motor. In total, there are 10 development areas.

The form for children aged 5 to 21 comprises the following development areas: communication, community use, functional academics, home living, health and safety, leisure, self-care, self-direction, social and work.

Sessions were structured depending on the diagnosis, the child's age and its state at the beginning of the therapy. Following the initial assessment, the adaptive areas with the highest deficit as well as the main development areas depending on the development age were established. Therefore, for 50 children with language acquisition deficit, therapy programs stimulating speech, including exercises focusing on training the inner muscles, the diaphragm and posture correction were structured. For children with deficiencies in forming interpersonal relationships and establishing contact, the exercises were generally selected aiming to focusing children's attention through games including several partners, inducing proprioceptive impulses. For the children with motor deficiencies, the main objective was to correct their position, maintain the balance, coordination, alignment.

Following their participation in the Equine Therapy sessions for children with psycho-motor disabilities aged 2 to 14, a significant increase of the adaptive skills level was recorded in the following skill areas: Communication (Com), Community Use (CU), Functional Academics (FA), Home Living (HL), Health and Safety (HS), Leisure (LS), Self-care (SC), Self-direction (SD), Social (SOC), areas which reflect the children's capacity to adapt and integrate in the family, social and school environments.

- **Binfet, J.T., Passmore, H.A., Cebry, A., Struik, K. & McKay, C. (2017) Reducing university students' stress through a drop-in canine-therapy program. J. Ment. Health 27(3) Pp 197–204 [DOI: 10.1080/09638237.2017.1417551](#)**

Aims: Participants included 1960 students at a mid-size western Canadian University. The study's aims were to assess the stress-reducing effects of a weekly drop-in, canine-therapy program and to identify how long participants spent with therapy canines to reduce their stress.

Results: Participants' self-reported stress levels were significantly lower after the canine therapy intervention. Participants spent an average of 35 min per session.

Conclusion: Providing opportunities for stress reduction through canine-assisted therapy is a popular means of safeguarding students' mental well-being.

- **Bizub, A., Joy, A., & Davidson, L. (2003) It's like being in another world. Psychiatric Rehabilitation Journal 26(4) 377–384 [DOI: 10.2975/26.2003.377.384](#)**

Five adults with long-term psychiatric difficulties were recruited for a ten-week therapeutic horseback riding program. (The post-lesson processing group activities were creative exercises, making multimedia collages, exploring poetry written about animals, or writing a letter of thanks to their horse.) At the end of the ten weeks, the riders reported success in learning basic horsemanship skills, and, in doing so, also reported additional psychosocial benefits, including an augmented sense of self-efficacy and self-esteem.

- **Boyd, L & le Roux, M. (2017) 'When he's up there he's just happy and content': Parents' perceptions of therapeutic horseback riding African Journal of Disability 6:0 <https://doi.org/10.4102/ajod.v6i0.307>**

The participating parents indicated that THR had had a positive psychological, social and physical effect both on the children participating in the riding, as well as on the parents themselves.

Conclusion: According to parents, THR plays an important role in the lives of children with various disabilities and in the lives of their parents. The results of the study address the gap in the literature regarding parents' perceptions of THR.

- **Brandt, C. (2013) Equine-facilitated psychotherapy as a complementary treatment intervention. Pract. Sch. J. Couns. Prof. Psych. 2(1) Pp 23–42 [no DOI](#)**

EFP is commonly used as a complimentary intervention to empirically supported therapeutic interventions. Horses support clients' development of positive behavior and emotional wellness through a variety of activities. EFP has the potential to greatly enhance the mental health field as it provides several unique benefits through the incorporation of a large and sensitive animal into the therapeutic process. Although it is clear more research needs to be conducted concerning the efficacy of EFP, current literature is promising. Meta-analytic studies indicate that clients suffering from a wide range of mental illnesses report improvement in psychological symptoms following participation in EFP.

- **Branson SM, Boss L, Padhye NS, Trötscher T, Ward A. (2017) Effects of animal-assisted activities on biobehavioral stress responses in hospitalized children: a randomized controlled study. J Pediatr Nurs. 36 Pp 84-91 [doi: 10.1016/j.pedn.2017.05.006](https://doi.org/10.1016/j.pedn.2017.05.006)**

(Also in Physiological) Purpose: This study assessed the effectiveness of animal-assisted activities (AAA) on biobehavioral stress responses (anxiety, positive and negative affect, and salivary cortisol and C-reactive protein [CRP] levels) in hospitalized children.

Design and Methods: This was a randomized, controlled study.

Conclusions: Although changes were in the expected direction, the magnitude of the effect was small. Future randomized controlled trials with larger recruitment are needed to determine the effectiveness of AAAs in reducing biobehavioral stress responses in hospitalized children.

- **Brelsford, V.L., Meints, K., Gee, N.R. & Pfeffer, K. (2017) Animal-Assisted Interventions in the Classroom - A Systematic Review. Int J of Environmental Research & Public Health 14(7) Pp669 <https://doi.org/10.3390/ijerph14070669>**

Most studies reported significant beneficial effects on cognitive and socio-emotional behaviour and physiological responses when exposed to animal-assisted interventions in the school setting. (However, studies vary greatly in methods and design, in intervention types, measures, and sample sizes, and in the length of time exposed to an animal.)

- **Buck, P.W., Bean, N & de Marco, K. (2017) Equine-Assisted Psychotherapy: An Emerging Trauma-Informed Intervention. Advances in Social Work 18(1) Pp 387-402 [DOI: 10.18060/21310](https://doi.org/10.18060/21310)**

Initial research on the most robust model of EAP, developed by the Equine Assisted Growth and Learning Association (EAGALA), indicates positive effects for children, adolescents, and adults who have experienced trauma. The EAGALA Model® was designed to allow for rigorous evaluation of efficacy, a clear theoretical base, standardized implementation, and ongoing training for practitioners. As the primary providers of mental and behavioral health services in the United States, social workers are keenly aware of the need for a portfolio of treatment methods to manage the increasing demand for services. This article provides an overview of EAP, including a review of the literature, the history of human-horse relations, an EAGALA case example, and a call for more rigorous research.

- **Burgon, H. (2003) Case studies of adults receiving horse-riding therapy. *Anthrozoos* 16(3) Pp 262–276**
[DOI: 10.2752/089279303786992099](https://doi.org/10.2752/089279303786992099)

The purpose of this study was to examine the psychotherapeutic effect of riding therapy (RT) on a group of adult users of a social services mental health team in South Devon. Whilst research has been conducted on the benefits of hippotherapy (the employment of horse riding as a physiotherapeutic aid) little has been undertaken on the psychotherapeutic benefits of riding therapy. Through case studies, the current study sought to explore whether the participants benefited in terms of confidence, increased self-esteem and social/interaction skills. The prime objective of the study was for the riders' experience of the therapy to be expressed in their own words. It emerged over the course of the research that the strongest element of the riding therapy has been the increase in confidence felt by the riders.

- **Burgon, H., Gammage, D. & Hebden, J. (2018) Hoofbeats and heartbeats: equine-assisted therapy and learning with young people with psychosocial issues—theory and practice. *Journal of Social Work Practice* 32(1) Pp 3–16** [DOI:10.1080/02650533.2017.1300878](https://doi.org/10.1080/02650533.2017.1300878)

Recent reviews have cited a need for further documentation of a theoretical foundation and evidence of outcomes of these programmes. This paper is a theoretical discussion of psychotherapeutic theories and models that the authors understood as being relevant and giving substance to the application of EAT/L at a Therapeutic Horsemanship centre in the UK. It also describes and defines the practice of EAT/L at the centre. Philosophical and psychological theories/models of Non-Violent Communication, Object Relations, Play and Dramatherapy, Mindfulness practice, and Attachment Theory, all set within a person-centred and relationship-based approach employed at the centre were examined and illustrated in the form of client case material. The authors report the central role relationship plays between client-horse-therapist and horse-handler in the building of trust and resolution of the impact of trauma. The paper highlights a need to carry out well-designed empirical studies with different client groups in the field of EAT/L in order to gain more insight into this growing field. (EAP & EAL)

- **Burton, L.E., Qeadan, F. & Burge, M.R. (2019) Efficacy of equine-assisted psychotherapy in veterans with posttraumatic stress disorder. *Journal of Integrative Medicine* 17(1) Pp14-19**
<https://doi.org/10.1016/j.joim.2018.11.001>

(Also in Physiological category) As compared to the control group, a 6-week EAP program did not produce a statistically significant difference with respect to PCL-M (PTSD Check List-Military Version) and CD-RISC (Connor-Davidson Resilience Scale) 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.

- **Calvo, P., Fortuny, J.R., Guzmán, S., Macías, C., Bowen, J., García, M.L., Orejas, O., Molins, F., Tvarijonaviute, A., Cerón, J.J. & Bulbena, A. (2016) Animal Assisted Therapy (AAT) Program As a Useful Adjunct to Conventional Psychosocial Rehabilitation for Patients with Schizophrenia: Results of a Small-scale Randomized Controlled Trial. *Front Psychol* [Internet] 7 Article 631**
<https://www.frontiersin.org/articles/10.3389/fpsyg.2016.00631>

(Also in Physiological category) The aim of this study is to assess the effect of an AAT program as an adjunct to a conventional 6-month psychosocial rehabilitation program for people with schizophrenia. At the end of the program, both groups (control and AAT-treatment) showed significant improvements in positive and overall symptomatology, as measured with PANSS, but only the AAT-treatment group showed a significant improvement in negative symptomatology. Cortisol level was significantly reduced after participating in an AAT session.

- **Charry-Sánchez, J.D., Pradilla, I. & Talero-Gutiérrez, C. (2018) Animal-assisted therapy in adults: A systematic review. *Complementary Therapies in Clinical Practice* 32 Pp169-180**
<https://doi.org/10.1016/j.ctcp.2018.06.011>

(Summary only in Word) Conclusion - only articles published after the year 2000 using therapies with significant animal involvement were included. 23 articles and dissertations met inclusion criteria. Overall quality was low. The degree of animal interaction significantly influenced outcomes. Results are generally favourable, but more thorough and standardized research should be done to strengthen the existing evidence.

- **Cerino, S., Cirulli, F., Chiarotti, F. & Seripa, S. (2011) Non-conventional psychiatric rehabilitation in schizophrenia using therapeutic riding: the FISE multicentre Pindar project. *Annali Dell'Istituto Superiore Di Sanità* 47(4) Pp 409–414 DOI: 10.4415/ANN_11_04_13**

Twenty-four subjects with a diagnosis of schizophrenia were enrolled for a 1 year-treatment involving therapeutic riding sessions (Adaptive Riding?). The results discussed in this paper point out an improvement in negative symptoms, a constant disease remission in both early onset and chronic disease subjects, as well as a reduced rate of hospitalization. There were neither concurrent diagnoses for drug abuse, mental retardation, epilepsy, horses and highness phobia, nor any relevant neurological or orthopaedic pathology. No one was in acute clinical phase. Therapeutic riding sessions were held once a week for 24 months. Results overall indicate a significant improvement in most symptoms in all groups (both first onset and chronic).

- **Chardonens, E. (2009) The Use of Animals as Co-Therapists on a Farm: The Child-Horse Bond in Person-Centered Equine-Assisted Psychotherapy. *Person-Centered & Experiential Psychotherapies*, 8(4) Pp 319-332 DOI: 10.1080/14779757.2009.9688496**

Through the case study of M., a teenager with the diagnosis of severe mental illness, the author argues that therapy involving animals as co-therapists leads the client to a clear reduction in symptoms, through a process of validation, sense of responsibility, increase in self-esteem, and development of core competencies that enhance relational competences. A link is shown between equine-assisted psychotherapy and Carl Rogers' basic concepts.

Components of the animal-assisted therapy include taking care of different animals, especially horses, including all the specific tasks involved in these activities, such as organizing the living environment appropriate to each species, maintenance, and feeding. The therapeutic goal is to help the children and adolescents to overcome their social, emotional, and relational difficulties. The psychotherapist who works at the farm adopts the person-centered approach (PCA) as described by Carl Rogers (1957) to guide her therapeutic activities.

The child–animal encounter has various effects, particularly in the development of competence, which favor the children's relationships with the outer world and which will permit them to understand, integrate and react to the information of their environment. Those competencies are acquired primarily throughout the years by the interactions between the mother and the child, yet — and this is of great importance — the animal can also participate in the development of the children's core competences.

- **Chu, C.I., Lui, C.Y., Sun, C.T. & Lin, J. (2009) The Effect of Animal-Assisted Activity on Inpatients with Schizophrenia. *Journal of Psychosocial Nursing & Mental Health Services* 47(12) PP 42-48**
<https://www.proquest.com/docview/225535212/fulltextPDF/7A37E2A99EA44326PQ/1?accountid=12528&sourcetype=Scholarly%20Journals>

The aim of this study was to evaluate the effects of animal-assisted activity on self-esteem, control over activities of daily living, and other psycho-physiological aspects among Taiwanese inpatients with schizophrenia. Compared with the control group, the treatment group showed significant improvement on all measures except for social support and negative psychiatric symptoms. The results of this study showed that animal-assisted activity can promote significant improvements in many clinical aspects among inpatients with schizophrenia. Therefore, animal-assisted activity should be integrated into the treatment of institutionalized patients with schizophrenia.

- **Compitus, K. (2019) Traumatic pet loss and the integration of attachment-based animal assisted therapy. *Journal of Psychotherapy Integration* 29(2) Pp 119) <http://dx.doi.org/10.1037/int0000143>**

The brief history and current applications of AAT as an effective adjunct treatment option are discussed. AAT has been found to work well with a variety of modalities such as dialectical behavior therapy (DBT) and Psychodynamic Psychotherapy, and should be considered by clinicians working with any clients with a disrupted or disorganized attachment.

- **Corring, D., Lundberg, E. & Rudnick, A. (2013) Therapeutic horseback riding for ACT (Assertive Community Treatment) patients with schizophrenia. *Community Mental Health Journal* 49(1) Pp 121–126 DOI: [10.1007/s10597-011-9457-y](https://doi.org/10.1007/s10597-011-9457-y)**

We found that THBR benefitted this group of patients. In spite of our study's limitations, such as it's exploratory nature and the small sample size, it demonstrates that THBR has promise ...for individuals with schizophrenia.

- **Dezutti, J. E. (2013) Eating disorders and equine therapy: A nurse's perspective on connecting through the recovery process. *Journal of Psychosocial Nursing & Mental Health Services* 51(9) Pp 24–31 [no DOI](#)**

In addition to this variety of treatment modalities, a hospital in the Chicago suburbs added equine-assisted psychotherapy (EAP) for their adolescent and adult patients in their hospital-based partial hospitalization program (PHP) and residential group home. The selection criteria, medical concerns that may arise with this patient population, and the role of the nurse in this therapy are explained. A session is also described in detail, so that practitioners can develop a fuller understanding of the potential of this experiential therapy option to help patients learn to trust and be accepted for who they are, practice assertiveness skills, work as a cohesive group, and learn how to be "in the moment" and "think outside the box" when solving problems that duplicate difficulties in their lives.

There is mounting evidence of the effectiveness of equine therapy for patients with a variety of disorders. Further quantitative and qualitative studies to determine the long-term benefits of this method specifically for eating disorders are encouraged.

- **Donofry, S. (2014) Using Equine-Facilitated Psychotherapy to Treat Eating Disorders. (Doctoral dissertation, University of Alaska Fairbanks) <https://core.ac.uk/download/pdf/185623463.pdf>**

(Summary of Thesis) Eating disorders are pervasive mental disorders that can be accompanied by significant psychological symptoms and comorbidities, such as: suicide, anxiety, and depression. Treatment options for decreasing the symptoms of eating disorders include: pharmacological interventions, psychological interventions, exercise interventions, and equine-facilitated psychotherapy (utilizes psychological interventions in combination with equine activities). This literature review provides a basis for a PowerPoint presentation that states the benefits of adding equine-facilitated psychotherapy to the list of top research priorities, as well as describes the benefits and limitations of this newer form of therapy.

- **Donaghy, G. (2006) Equine assisted therapy. *Mental Health Nursing* 26(4) Pp5 [no DOI](#)**

EAP is a team approach in which a licensed mental health professional, a certified equine specialist and specially trained horses work together to co-facilitate a therapeutic process. It is experiential, action-based and short-term. Each activity is designed with specific objectives and themes that enable participants to learn about themselves and others, develop specific skills and overcome obstacles. The participant doesn't actually ride. This form of therapy has proved so successful with the young people involved that more services are being offered. (No stats)

- **Dunlop, K. & Tsantefski, M. (2017) A space of safety: Children's experience of equine-assisted group therapy. *Child & Family Social Work* 23 Pp 16–24 [doi.org /10.1111/cfs.12378](https://doi.org/10.1111/cfs.12378)**

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.

- **Earles, J.L., Vernon, L.L. & Yetz, J.P. (2015) Equine-assisted therapy for anxiety and posttraumatic stress symptoms. *Journal of traumatic stress* 28(2) Pp 149-52 [DOI: 10.1002/jts.21990](https://doi.org/10.1002/jts.21990)**

We tested the efficacy of the Equine Partnering Naturally[®] approach to equine-assisted therapy for treating anxiety and posttraumatic stress disorder (PTSD) symptoms. Based on our findings, we propose that equine-assisted therapy could be an effective therapeutic technique for treating PTSD and other anxiety symptoms. Currently, many therapists are conducting equine-assisted therapy (EAGALA, 2014), but there is little consensus about how it should be conducted or how effective different therapy programs are for the treatment of different psychological symptoms. The results of our study supported the hypothesis that the Equine Partnering Naturally program[®] (Yetz, 2011) could be effective for the treatment of posttraumatic stress, anxiety, and depression symptoms.

- **Esbjorn, R.J. (2006) When Horses Heal: A Qualitative Inquiry into Equine Facilitated Psychotherapy. Thesis - Institute of Transpersonal Psychology. Palo Alto**
<https://www.proquest.com/openview/271c1f1e939a2e1035a2aa635209232b/1?cbl=18750&diss=y&pq-origsite=gscholar&parentSessionId=I9R9FXNct95Dz3rJnwNAvUg46gSqhBf7m6nZFTra7n8%3D>

(Summary of Thesis) Through questionnaire & interviews the author sought answers to 3 questions, (i) How is EFP/EAP being conducted at this time; (ii) What are the major benefits and clinical outcomes of EFP/EAP as perceived by therapists, and how are these benefits and outcomes effected; and (iii) Why do psychotherapists choose to work with equines?

There was substantial agreement in what the equine brings to the therapeutic encounter: unique equine attributes, opportunities for metaphor, and relational aspects. There was a consensus in the belief that this approach can be beneficial to a large spectrum of populations.

- **Evans, N., & Gray, C. (2012) The practice and ethics of animal-assisted therapy with children and young people: is it enough that we don't eat our co-workers? *Br J Soc Work*, 42(4) Pp 600-17**
[doi:10.1093/bjsw/bcr091](https://doi.org/10.1093/bjsw/bcr091)

This paper examines the relevance of animal-assisted therapy (AAT) to an ecological approach to social work practice, particularly when working with children and young people, and considers both practice and ethical issues for social workers employing AAT, with reference to the implications these have for social work education providers.

The interaction between animals and patients creates an atmosphere that allows patients to communicate more effectively, boost their self-confidence, decrease sickness symptoms, and improve their overall satisfaction.

- **Fine, A.H., Beck, A.M. & Ng, Z. (2019) Review: The State of Animal-Assisted Interventions: Addressing the Contemporary Issues that will Shape the Future *Int. J. Environ. Res. Public Health* 16 Pp3997**
[doi:10.3390/ijerph16203997](https://doi.org/10.3390/ijerph16203997)

This article will provide an overview of the history of AAI and the major milestones that the field has undergone. Contemporary critical issues that confront the field today include, but are not limited, to research, animal welfare, practice guidelines, and public policy. The authors' perceptions for the field's future trajectory are presented, which will include solutions to move the field in the direction that best advances the human-animal bond in research, practice, and public perception.

- **Frewin, K. & Gardiner, B. (2005) New Age or Old Sage? A review of Equine Assisted Psychotherapy. The Australian Journal of Counselling Psychology 6(2) Pp 13-17** https://www.hoofbeats.org.au/wp-content/uploads/New-Age-or-Old-Sage-_-A-Review-of-Equine-Assisted-Psychotherapy.pdf

This paper provides a review of the literature on EAP and considers the development, status and future among contemporary counselling approaches. It appears that EAP may well have a great deal to offer those with mental health issues and those with complex social problems. We know that the portion of variance due to the therapeutic alliance or relationship between therapist and client contributes three to four times as much to the outcome effect size as the specific treatment adopted (Wampold, 2001). Perhaps EAP works well because it gives prominence to the establishment of relationships both with therapist and horse, with the one mirroring the other. We conclude by discussing the outlook for EAP in Australia and New Zealand, with some suggestions for future potential and development. With its claims of positive results for hard-to-reach client groups EAP merits further investigation and consideration in Australia and New Zealand.

- **Froeschle, J. (2009) Empowering Abused Women Through Equine Assisted Career Therapy. Journal of Creativity in Mental Health 4(2) Pp 180–190** [DOI:10.1080/15401380902945228](https://doi.org/10.1080/15401380902945228)

Equine assisted therapy has been shown to increase self-esteem, improve self-efficacy, and lower anxiety (Marx & Cumella, 2003). This article discusses an overview of the literature regarding career-related consequences for female survivors of intimate partner abuse, describes equine assisted therapy, and details a creative career counseling method.

- **Gehrke, E.K. (2009) Developing coherent leadership in partnership with horses: A new approach to leadership training. Journal of Research in Innovative Teaching 2(1) Pp 222–233** [no DOI](#)

Differences in leadership training with horses is discussed and areas such as equine coaching, team building, leadership awareness and cross-cultural applications are presented. This innovative work suggests how the application of equine partnered experiences (EPE) can help transform and motivate people so they are able to make better decisions, gain more clarity, experience more commitment to their life and work and generally improve the coherence of themselves and those around them. Most of the literature is directed at psychotherapeutic interventions which are much different than the work described in this paper. Offering leadership training with horses that involves carefully designed activities, well trained horses, an open working environment and a team of skilled and educated facilitators then this type of leadership training supports the hypothesis that horses can serve as honest biofeedback beings for improving leadership and relationships in organizations.

- **Germone, M. M., Gabriels, R. L., Guerin, N. A., Pan, Z., Banks, T., & O'Haire, M. E. (2019) Animal-assisted activity improves social behaviors in psychiatrically hospitalized youth with autism. National Autistic Society, 23(7) Pp 1740-1751** [DOI:10.1177/1362361319827411](https://doi.org/10.1177/1362361319827411)

This pilot study sought to investigate the benefits of animal-assisted activities with dogs and psychiatrically hospitalized youth with autism spectrum disorder. Utilizing a crossover design, participants served as their own control by engaging in two 10-min conditions: an experimental dog and handler interaction (animal-assisted activities) and a novel toy and handler control (Control). Overall, social-communication behaviors significantly improved in the animal-assisted activities experimental condition compared to the control condition. Specifically, participants in the animal-assisted activities experimental condition displayed more positive emotional facial expressions, talking, use of gestures, and looking at both adults and peers. In addition, a higher frequency of constant motion was observed in the animal-assisted activities experimental condition.

- **Ginex, P., Montefusco, M., Zecco, G., Mattessich, N.T., Burns, J., Heddal-Siegel, J., Kopelman, J. & Tan, K.S. (2018) Animal-facilitated therapy program: outcomes from caring canines, a program for patients and staff on an inpatient surgical oncology unit. Clin J Oncol Nurs. 22(2) Pp 193-198 [doi: 10.1188/18.CJON.193-198](https://doi.org/10.1188/18.CJON.193-198)**

To the authors' knowledge, no study has investigated the benefits of an AFT program in an adult surgical oncology setting. The purpose of this study is to assess the effects of an AFT program on patients (anxiety & depression) and staff (work satisfaction in nursing) on a surgical oncology unit. A quasi-experimental design was used for the patient group, and a pre-/post-test design was used for the staff group. The intervention involved the AFT program being fully integrated on a surgical inpatient unit. QOL indicators improved for all patients, and the level of energy at follow-up was significantly higher in the AFT group after adjusting for baseline. For staff, compassion satisfaction was high and burnout was low.

- **Germain, S.M., Wilkie, K.D., Milbourne, V.K.M. & Theule, J. (2018) Animal-Assisted Psychotherapy & Trauma – A Meta Analysis Anthrozoös 31(2) Pp 141-164 DOI: [10.1080/08927936.2018.1434044](https://doi.org/10.1080/08927936.2018.1434044)**

The present meta-analysis examined the efficacy of animal-assisted psychotherapy for individuals who have experienced trauma. Eight studies quantitatively assessed the treatment effects of involvement in animal-assisted psychotherapy. The results indicate that animal assisted therapy is an efficacious treatment for trauma.

- **Gibbons, J.L., Cunningham, C.A., Paiz, L., Poelker, K.E. & Cardenas, M.A.M. (2015) "Before, he fought every day with the horse and me." Reducing violence in a Guatemalan community through a horse handling program. Human Anim. Interact. Bull. 3(2) Pp 37–55 [no DOI??](#)**

We evaluated the effectiveness of a horse-handling program to reduce violent attitudes and aggressive behavior. Eighteen community members who worked with horses in their daily lives (16 men, 2 women, ages 15 to 58) participated in four weekly sessions of embodied experiences with horses. The program taught Monty Roberts' Join-Up[®], a method of non-violent handling, as well as desensitization of horses to feared objects. Compared to the pretest, on a post-test participants were less likely to endorse violent attitudes with respect to wife-beating, corporal punishment of children, and physical punishment of horses. Their horses also were less reactive to the owner's approach. Female relatives reported that following the program participants provided better care for horses and were calmer and less aggressive with other people. These findings imply that an equine-facilitated program shows promise for transforming communities in which violence is prevalent.

- **González-Ramírez, T., Ortiz, X., & Landero-Hernández, R. (2013). Cognitive-behavioral therapy and animal-assisted therapy: Stress management for adults. Alternative and Complementary Therapies 19 Pp 270–275 <https://doi.org/10.1089/act.2013.19505>**

(Summary only in Word) The aim was to learn how effectively CBT versus AAT + CBT techniques relieved stress in two groups of adults. The presence of a dog is beneficial for reducing stress levels. An additional benefit for the group with dog-assisted therapy was that a larger number of participants adhered to the treatment.

- **Grootveld, N.N. (2015) An explorative study to the development of effective leadership through equine-assisted learning and emotional intelligence. Master thesis, Psychology, Faculty of Behavioural Sciences, University of Twente <https://essay.utwente.nl/68620/1/Grootveld%2C%20N.N.%20-%20s1170864%20%28verslag%29.pdf>**

(Summary of Thesis) This qualitative study is part of a MSc graduation project with the aim to discover the active aspects of Equine-Assisted Learning (EAL). Furthermore, this study tries to discover to what extent EAL can contribute to the development of emotional intelligence competencies. Eight semi structured interviews were conducted with experienced EAL coaches which gave insight in the competencies developed during the training. All coaches are working on improving leadership skills during their training but surprisingly none of them focus on

emotional intelligence. The findings provide support for the conclusion that participating in EAL is beneficial for the development of several emotional intelligence competencies.

- **Guerino, M.R., Briel, A.F. & Araújo, M. (2015) Hippotherapy as a treatment for socialization after sexual abuse and emotional stress. Journal of Physical Therapy Science 27(3) Pp 959–962**
https://www.jstage.jst.go.jp/article/jpts/27/3/27_jpts-2014-605/_pdf

(Also in Physiological category) Case Study, two women - The activities were structured to stimulate coordination, proprioception, the vestibular and motor-sensorial systems for the improvement of posture, muscle activity and cognition.

Results: The activities provided during the hippotherapy sessions elicited alterations in postural adjustment resulting in 30% improvement, 80% improvement in coordination in, 50% improvement in corporal balance and in sociability and self-esteem. Conclusion: Hippotherapy proved to be an effective treatment method for coordination, balance and postural correction, and also improved the patients' self-esteem that had suffered serious emotional stress.

- **Hakanson, M., Moller, M., Lindstrom, I. & Mattsson, B. (2009) The Horse as the Healer – A study of riding in patients with back pain. J. Bodyw. Mov. Ther. 2009, 13 Pp 43–52 DOI??**

(Also in Physiological category) A total of 24 patients, considerably disabled in daily activities by back pain, participated in an Equine-Assisted Therapy (EAT) programme. The patients also had several health problems in addition to their current pain. The programme emphasised the principles of body awareness. The study is aimed at investigating not only whether symptom reduction would be achieved, but also at identifying qualities of EAT that were particularly beneficial for the patients' wellbeing. The study was performed according to action research principles.

The treatment reduced the pain and lessened other symptoms. The EAT also had an influence on the patients' self-image and a positive chain of effects was observed. The consequences were described according to four dimensions; the dimension of body awareness, competence, emotion and environment. The dimensions were interrelated having the simultaneous influence of a transition process and symptom reduction towards health.

- **Hamama, L., Hamama-Raz, Dagan, K., Greenfeld, H., Rubinstein, C., & Ben-Ezra, M. (2011). A preliminary study of group intervention along with basic canine training among traumatized teenagers: A 3-month longitudinal study. Children and Youth Services Review 33 Pp 1975–1980**
[doi:10.1016/j.childyouth.2011.05.021](https://doi.org/10.1016/j.childyouth.2011.05.021)

(Summary only in Word) The current study aimed to reduce the psychological distress of teenage girls who were exposed to traumatic event (physical or sexual abused), through using dogs-assisted therapy. Findings from the longitudinal perspective have shown a rapid decline at the level of PTSD symptoms in the intervention group, along with significant reduction in the proportion of participants with elevated risk for PTSD.

- **Hartwig, E.K. & Smelser, Q.K. (2018) Practitioner Perspectives on Animal-Assisted Counseling. J Mental Health Counseling 40(1) Pp43-57I DOI:10.1080/15401383.2020.1792382**

Hartwig and Smelser (2018) found that the vast majority (91.7%) of mental health professionals believed that AAT is a valid therapeutic model and that clinicians would like to someday integrate a therapy animal into their practice.

- **Hauge, H., Kvalemb, I.L., Bergeta, B., Enders-Slegersc, M-J. & Braastada, B.O. (2014) Equine-assisted activities and the impact on perceived social support, self-esteem and self-efficacy among adolescents – an intervention study. *International Journal of Adolescence and Youth* 19(1) Pp 1–21**
<http://dx.doi.org/10.1080/02673843.2013.779587>

The benefit of equine-assisted activities on perceived social support, self-esteem and self-efficacy in typically developing adolescents was evaluated. The intervention in this study consists of activities with horses together with another peer and an instructor on a farm over 4 months. This study thus focuses on adolescents' experience of activities with horses in a social environment on a farm, providing a natural setting with physical activities which holds elements of task achievement, all potentially important for adolescent development.

The intervention group reported a significant increase in perceived social support compared with the control group. There were no differences in self-esteem and general self-efficacy between the groups. The results from study II showed that a lower level of perceived social support prior to the intervention predicted an increase in mastering skills with the horse during the intervention.

- **Havener, L.A., Gentes, L., Thaler, B., Megel, M., Baun, M., Driscoll, F., Beiraghi, S. & Agrawal, N. (2001) The Effects of a Companion Animal on Distress in Children Undergoing Dental Procedures. *Issues in Comprehensive Pediatric Nursing* 24(2) Pp 137–152 DOI: [10.1080/01460860118472](https://doi.org/10.1080/01460860118472)**

The purpose of our pilot study was to evaluate the effects of a companion animal (dog) on physiologic arousal and behavioral distress among children undergoing a dental procedure. A repeated measures experimental design was used to study 40 children between the ages of 7 and 11 years who were undergoing procedures in a pediatric dental clinic. Behavioral distress was measured using the Observational Scale of Behavioral Distress; procedures were videotaped. Physiologic arousal was measured using a YSI telethermometer taped to the child's index finger. No significant differences in behavioral distress or physiologic arousal were found between experimental and control groups. Further analysis revealed that for children who initially verbalized distress on arrival at the clinic, the presence of the dog decreased physiologic arousal during the time the child was on the dental table waiting for the dentist to arrive. Further research should be conducted to verify the effect of a companion animal on initial stress experienced by children for whom the visit to the dentist is most stressful. (Bad design).

- **Hemingway, A. (2019) A Study Exploring the Implementation of an Equine Assisted Intervention for Young People with Mental Health and Behavioural Issues. *J* 2(2) Pp 236–246 doi:[10.3390/j2020017](https://doi.org/10.3390/j2020017)**

This paper presents the findings from a study of an equine assisted intervention (EAI), which is currently referred over 150 predominantly young people with mental health and behavioural problems each year. The young people are referred to this intervention when other services such as Child & Adolescent Mental Health Services (CAMHS) are not effective. This study showed some positive changes for participants across eight dimensions including; assertiveness, engagement with learning, calmness, planning, taking responsibility, empathy, communication and focus and perseverance. This study used a non-randomised sample, no control group and an unstandardised measurement filled out by those who refer young people to the intervention (social workers and teachers). The outcomes however from this exploratory study would suggest that a randomised control trial may be warranted and achievable.

- **Henry, C.L. & Crowley, S.L. (2015) The psychological and physiological effects of using a therapy dog in mindfulness training. *Anthrozoös* 28(3) Pp 385-402 DOI: [10.1080/08927936.2015.1052272](https://doi.org/10.1080/08927936.2015.1052272)**

The present study was a randomized controlled trial examining the psychological and physiological effects of adding animal-assisted therapy (AAT) to a modified Mindfulness-Based Stress Reduction program (MBSR) for clients experiencing psychological distress. The current study supports the mental-health benefits of the modified MBSR program used; however, AAT was not demonstrated to significantly enhance the intervention, as measured by the assessments used in the present study.

- **Hinic, K., Kowalski, M.O., Holtzman, K. & Mobus, K. (2019) The effect of a pet therapy and comparison intervention on anxiety in hospitalized children. J Pediatr Nurs. 46 Pp 55-61 [doi: 10.1016/j.pedn.2019.03.003](https://doi.org/10.1016/j.pedn.2019.03.003)**

The purpose of this study was to evaluate the effect of a brief pet therapy visit and a comparison intervention on anxiety in hospitalized children. This quasi-experimental study compared state anxiety before and after structured research interventions in a convenience sample of children between the ages six and 17 (N = 93) in two groups.

While state anxiety decreased significantly in both groups, children in the pet therapy group experienced a significantly greater decrease in anxiety. In addition, parents reported high levels of satisfaction with the pet therapy program. Study findings provide support for a brief pet therapy visit with a trained dog and handler as a tool decrease to anxiety in hospitalized children while promoting parent satisfaction.

- **Holmes, C.M.P., Goodwin, D., Redhead, E.S. & Goymour, K.L. (2012) The benefits of equine-assisted activities: an exploratory study. Child and Adolescent Social Work Journal 29(2) Pp 111–122 [DOI 10.1007/s10560-011-0251-z](https://doi.org/10.1007/s10560-011-0251-z)**

This study explores the benefits of equine-assisted-activities (EAA) to adolescents with emotional, behavioural or learning difficulties, expanding on previous anecdotal evidence by employing quantitative measures and a control activity. Ten adolescent males and one adolescent female attended a racehorse rehabilitation centre, interacting with both live and model horses. Interaction frequency, self-report anxiety and self-esteem were measured. A significant reduction in trait anxiety was found over the course of the programme, however, no changes in self-esteem were reported. (EAL)

- **Hunt, M.G. & Chizkov, R.R. (2014) Are Therapy Dogs Like Xanax? Does Animal-Assisted Therapy Impact Processes Relevant to Cognitive Behavioral Psychotherapy? Anthrozoös 27(3) Pp 457-469 <https://doi.org/10.2752/175303714X14023922797959>**

This study tested the impact of having a dog present on process variables relevant to cognitive behavioral therapy, including emotional arousal, the content of trauma narratives, and cognitive change. Shows many diagnosed psychological conditions can be managed without or limited pharmacological intervention.

The results suggest that dogs can lower acute distress without compromising emotional processing or therapeutic mechanisms, and may actually improve long-term outcome for some individuals.

- **Johansen, S.G., Wang, C.E.A., Binder, P.-E. and Malt, U.F. (2014) Equine-Facilitated Body and Emotion-Oriented Psychotherapy Designed for Adolescents and Adults Not Responding to Mainstream Treatment: A Structured Program. Journal of Psychotherapy Integration 24(4) Pp 323–335 <http://dx.doi.org/10.1037/a0038139>**

Equine-facilitated body and emotion-oriented psychotherapy (EBEP) is a new manual-based treatment for patients with mental disorders who have participated in conventional psychotherapy in the past without a positive treatment outcome. During the program, the therapist helps the patient not only to be more aware of emotions, cognitions, bodily sensations, and behavior when interacting with the horse, but also to verbalize his or her experiences. In this paper, we describe the content and the different therapeutic steps of the program and have discussed further steps needed to establish EBEP as an alternative therapy for patients not responding to or accepting traditional psychotherapy.

- **Johansen, Siv G., Arfwedson Wang, C.E. & Binder, P.-E. (2016). Facilitating change in a client's dysfunctional behavioural pattern with horse-aided psychotherapy. A case study. *Counselling & Psychotherapy Research* 16(3) Pp 222–231 [doi: 10.1002/capr.12078](https://doi.org/10.1002/capr.12078)**

The aim of the study was to describe how therapeutic interaction with a horse has the potential to provide opportunities to work with relational issues for a client with a background of parental substance misuse and severe trauma in childhood. Four themes were found in the analysis. The client displayed dysfunctional behavioural patterns in the relationship with the horse. The negative reactions and uncooperativeness the client got from the horse aided the client in changing to more constructive behaviour. Implications: This study may give increased awareness of the benefits of psychotherapy facilitated by horses.

- **Jormfeldt, H., & Carlsson, I.-M. (2018) Equine-Assisted Therapeutic Interventions Among Individuals Diagnosed With Schizophrenia. A Systematic Review. *Issues in Mental Health Nursing* 39(8) Pp 647–656 <https://doi.org/10.1080/01612840.2018.1440450>**

The aim was to systematically review studies concerning equine assisted interventions among individuals diagnosed with schizophrenia. The findings of the six included articles indicate that therapeutic equine assisted interventions could be beneficial for individuals with severe mental illness such as schizophrenia or schizophrenia like disorders. (None of the included therapy studies that were investigated reported any negative outcomes connected to the interventions. Different kinds of positive outcomes were found in the studies depending on the study aim and the design of the studies – See Table 4 below).

Table 4. Overview of the outcomes of interventions investigated in the included studies.

	Increased confidence and self-esteem	Increased activity/learned basal horsemanship	Improved social skills	Enhanced enjoyment	Improvement in negative symptoms	Improved pharmacological compliance	Decrease in violent behavior and need for hospitalization
Bizub et al. (2003)	X	X	X		X		
Burton (2003)	X		X				
Cerino, Cirulli, Chiarotti, and Seripa (2011)					X	X	X
Corring et al. (2010)	X	X		X			
Corring et al. (2013)	X			X			
Nurenborg et al. (2015)							X

- **Kakacek, S.L. & Ottens, A.J. (2008) An Arena for Success: Exploring Equine-Assisted Psychotherapy. *Michigan Journal of Counseling: Research, Theory and Practice* 35(1) Pp 14-23 [doi:10.22237/mijoc/1217548920](https://doi.org/10.22237/mijoc/1217548920)**

The characteristics presented by an ODD adolescent are numerous and often include hostility, noncompliance, and aggressiveness; and they tend to be resistant to treatment. This pattern of defiance creates obstacles for change. Equine-Assisted Psychotherapy (EAP) may provide an area of effective strategies for adjudicated youth. A brief case study of a 14-year-old adjudicated boy with ODD illustrates the potential success of EAP.

- **Kaiser, L., Spence, L.J., Lavergne, A.G., & Vanden Bosch, K.L. (2004) Can a week of therapeutic riding make a difference? A pilot study. *Anthrozoos* 17(1) Pp 63 <https://doi.org/10.2752/089279304786991918>**

Data analysis suggests that five days of therapeutic riding day camp can significantly impact on anger. These changes may be related to the child's relationship with the horse, the social environment of camp, the horse and riding, increased contact with nature, or a combination of these factors.

- **Kamiokaa, H., Okadab, S., Tsutanic, K., Parkd, H., Okuizumie, H., Handae, S., Oshiof, T., Parkb, S-J., Kitayuguchig, J., Abeg, T., Hondah, T. & Mutohi, Y. (2014) Effectiveness of animal-assisted therapy: A systematic review of randomized controlled trials. *Complementary Therapies in Medicine* 22(2) Pp 371-390 <http://dx.doi.org/10.1016/j.ctim.2013.12.016>**

Studies included at least one treatment group in which AAT was applied. The definition of AAT in this study was based on the classification of the AVMA. Type of animal was not a restriction but we excluded robotic animals (e.g., robotic dog). This is the first SR of the cure effectiveness of ATT based on RCTs. Among the 11 RCTs that were identified, target diseases and/or symptoms included schizophrenia, depression cancer, advanced heart failure, severe ambulatory disability, older adults admitted to skilled rehabilitation units, elderly persons with chronic psychiatric, medical, and neurologic conditions, and a mental illness diagnosis, as well as a history of alcohol/drug abuse or other addictive behaviors, and intervention methods included various approaches such as dog, dolphin, bird, cat, cow, rabbit, ferret, and guinea pig.

Conclusion: In a study environment limited to the people who like animals, AAT may be an effective treatment for mental and behavioral disorders such as depression, schizophrenia, and alcohol/drug addictions, and is based on a holistic approach through interaction with animals in nature.

- **Kendall, E., Maujean, A., Pepping, C.A., Downes, M., Lakhani, A., Byrne, J. & Macfarlane K. (2015) A systematic review of the efficacy of equine-assisted interventions on psychological outcomes. *European Journal of Psychotherapy & Counselling* 17(1) Pp 57-79 DOI: [10.1080/13642537.2014.996169](https://doi.org/10.1080/13642537.2014.996169)**

The purpose of this review was to examine the current state of the literature regarding the psychological effects of equine-assisted interventions, and to make recommendations for future research. Consistent with prior reviews (e.g. Lentini & Knox, 2009), findings from this review indicate that equine-assisted interventions hold much promise, particularly in terms of child/adolescent social and behavioural issues (including those associated with childhood autism, at-risk adolescents and perhaps adult affective disorders).

The following caveat came with a lot of the studies. “There is a need to standardise and document equine-assisted interventions and outcomes in the future, with well-deigned randomised controlled trials. Further, follow-up assessments are required to determine the longevity of any beneficial effects.” (This taken from Kendall et al 2015).

- **Kinney, A.R., Eakman, A.M., Lassell, R. & Wood, W. (2019) Equine-assisted interventions for veterans with service-related health conditions: a systematic mapping review. *Mil Med Res* 6(28) doi: [10.1186/s40779-019-0217-6](https://doi.org/10.1186/s40779-019-0217-6)**

Evidence-based treatments for service-related health conditions such as posttraumatic stress disorder (PTSD), depression, and traumatic brain injury (TBI) are not effective for all veterans. Equine-assisted interventions are emerging as an additional treatment modality, but little is known regarding the safe and effective delivery of these interventions. This study aimed to describe the following features of the body of literature concerning equine-assisted interventions among veterans: 1) veterans who have participated in equine-assisted interventions; 2) specific characteristics of equine-assisted interventions in veterans; and 3) the specific characteristics of research on equine-assisted interventions in veterans.

The detailed methods of EAI varied in the reported studies, ranging from communicating with the horse to mounted exercises. There was also great diversity in outcome measurement. Targeted outcomes should be expanded, including outcomes more closely aligned with the nature of polytraumatic injuries. Future research must also emphasize the theoretical development of equine-assisted interventions for veterans and thoroughly describe the participants, components of the intervention, factors contributing to attrition, and optimal dose-response relationships.

- **Klontz, B.T., Bivens, A., Leinart, D. & Klontz, T. (2007) The Effectiveness of Equine-Assisted Experiential Therapy: Results of an Open Clinical Trial. *Society and Animals* 15 Pp 257-267 [no DOI](#)**

This article describes an equine-assisted experiential therapy approach and presents treatment outcomes in 31 participants in an equine-assisted, experiential therapy program. Participants completed psychological measures prior to treatment, immediately following treatment, and 6 months after treatment. Reported reductions in psychological distress and enhancements in psychological well-being were significant immediately following treatment and were stable at 6-month follow-up.

- **Kotrschal, K. & Ortbauer, B. (2003) Behavioral effects of the presence of a dog in a classroom. *Anthrozoos* 16(2) Pp 147-159 [DOI: 10.2752/089279303786992170](#)**

To test the idea that dogs have a positive influence on the social behavior of school children, one of three dogs was introduced alternately into a class at an elementary school in Vienna, attended by 24 children (mean age: 6.7 years). Most of the 14 boys and ten girls came from first-generation immigrant families. With parental consent, their behavior was videotaped for two hours every week, during “open teaching situations,” first during a one-month control period in the absence of dogs, followed by an experimental period of similar duration, when a dog was present in the classroom. Frequency and duration of all observable behaviors of individuals and their interactions were coded from these tapes. Although major individual differences were found in the children's interest in the dog and their behavioral responses, the group became socially more homogenous due to decreased behavioral extremes, such as aggressiveness and hyperactivity; also, formerly withdrawn individuals became socially more integrated. Effects were more pronounced in the boys than the girls. Even though the children spent considerable time watching and making contact with the dog, they also paid more attention to the teacher. We conclude that the presence of a dog in a classroom could positively stimulate social cohesion in children and provide a relatively cheap and easy means of improving teaching conditions.

- **Lac, V., Marble, E. & Boie, I. (2013) Equine-assisted psychotherapy as a creative relational approach to treating clients with eating disorders. *Journal of Creativity in Mental Health* 8(4) Pp 483–498 [DOI: 10.1080/15401383.2013.852451](#)**

The authors share two different perspectives on conceptualization of and treatment approaches to clients with eating disorders. Veronica Lac, Erin Marble, and Ioana Boie discuss the creative relational approach of Gestalt-informed equine-assisted psychotherapy. Jonathan Matusitz and Jacqueline Martin explore the role of self-determination theory in the development and maintenance of disordered eating and distorted body image, and discuss how mental health professionals can offer effective treatment. Both perspectives offer unique insights into the conceptualization and treatment of eating disorders.

In recognizing both the severity and uniqueness of the client's struggles with her or his eating disorder, it is important to consider different interventions to address the client's particular needs. These needs can vary greatly and may include building relational competence, growing in supportive, nonjudgmental, and honest relationships with the horse and their therapist, gaining a sense of their embodied presence, finding their authentic self, and living an authentic life. Through EAP, horses can provide the client recovering from eating disorders with a sense of renewed hope in relationships, in themselves, and in their recovery when EAP is used by itself or as a complementary intervention with other therapeutic approaches.

- **Lac, V. (2017) Amy's story: an existential-integrative equine-facilitated psychotherapy approach to anorexia nervosa. Journal of Humanistic Psychology 57(3) Pp 1–12 DOI: [10.1177/0022167815627900](https://doi.org/10.1177/0022167815627900)**

This article offers an existential-integrative framework to working with anorexia nervosa within an equine-facilitated psychotherapy setting. The discussion provides an overview of how existential-integrative theories can be blended into equine-facilitated psychotherapy and offers an existential-integrative perspective of anorexia nervosa. A case study illustrates the theories behind this blended approach in praxis.

- **Lac, V. (2016) Horsing Around - Gestalt Equine Psychotherapy as Humanistic Play Therapy. Journal of Humanistic Psychology 56(2) Pp 194-209 DOI: [10.1177/0022167814562424](https://doi.org/10.1177/0022167814562424)**

This article explores how the key concepts within Gestalt Equine Psychotherapy (GEP) and Humanistic Play Therapy (HPT) can be compatible modalities for working with children. As illustrated in the case example, HPT can be integrated into the GEP approach, thus providing a supportive developmental environment for the child.

- **Lasa, S.M., Bocanegra, N.M., Alcaide, V.R., Arratibel, M.A.A., Donoso, E.V. & Ferriero, G. (2013) Animal assisted interventions in neurorehabilitation: a review of the most recent literature. Neurologia 30(1) Pp 1–7 [no DOI](#)**

(also in Physiological category) Objective: The aim of this review is to analyse original papers addressing AAI and neurological diseases and published in the most influential medical journals between 2001 and 2012, and discuss their findings in the light of what may be of interest in the field of neurology.

Discussion: We selected a total of 23 articles on neurorehabilitation in cerebral palsy, pervasive developmental disorders, multiple sclerosis, spinal cord injury, stroke, and mental disorders. The main therapeutic results were improvement on the Gross Motor Function Classification Scale and in upper limb dexterity (cerebral palsy); improvement in social functioning and interaction; reductions in stress, anxiety, and loneliness (pervasive developmental disorders and mental disorders); and decreased spasticity with improved balance (multiple sclerosis, spinal cord injury, stroke).

Conclusion: These interventions, performed with highly specialised animals in very specific neurological populations, deliver an increasing body of scientific evidence suggesting that they are an effective complement to other existing therapies.

- **Lee, P.T. & Makela, C. (2015) Horses' roles in equine-assisted psychotherapy: Perspectives of mental health practitioners. Journal of Psychology and Behavioral Science 3(1) Pp78-95 DOI: [10.15640/jpbs.v3n1a9](https://doi.org/10.15640/jpbs.v3n1a9)**

This study explored horses' behaviors and roles that affect changes in clients' mental health. This study was conducted using a constructivist narrative approach and guided by biophilia hypothesis which suggests that, as a consequence of evolution, humans have a built-in tendency to pay attention to animals and nature. The more humans come to understand other creatures, the more they value both other creatures and themselves. Two semi-structured, individual, face-to-face interviews were conducted with each of eight participants who had at least two years of experience practicing both traditional talk therapy and EAP. Thematic analysis identified three main themes: horses actively use non-verbal language to communicate with therapists and clients; horses are naturally therapeutic by being themselves; clients actively engage with horses in EAP. EAP is an innovative mental health treatment approach. This study deepens our understanding about horses' roles in EAP. The biophilia hypothesis provides a theory to explore horses' roles in mental health, which helps to connect EAP theory and practice.

- **Lentini, J.A. & Knox, M.S. (2009). A qualitative and quantitative review of equine facilitated psychotherapy (EFP) with children and adolescents. *International Journal of Psychosocial Rehabilitation* 13 Pp 17–30 [no DOI](#)**

This paper presents a comprehensive review of the literature on Equine Facilitated Psychotherapy (EFP) with children and adolescents. Methods used in EFP, including traditional mounted, vaulting, husbandry, and unmounted activities are described. Overall, the idea of this unconventional therapy is very appealing, especially for difficult to reach groups of patients. Mentioned several times were “therapy-wise” patients, hardened youths, and gangs. Furthermore, abused, eating-disordered, or neglected children who do not respond to the typical office therapy might also benefit.

- **Lentini, J.A. & Knox, M.S. (2015) Equine-facilitated psychotherapy with children and adolescents: An update and literature review. *Journal of Creativity in Mental Health* 10(3) Pp 278–305 [DOI: 10.1080/15401383.2015.1023916](#)**

This article summarizes and tabulates investigation findings by methods, theoretical underpinnings, and treatment populations. This review of 47 recent publications suggests that EFP is a useful modality with children and adolescents. In the large majority of reviewed papers, benefits were found for a variety of presenting problems and disorders.

- **Malinowski, K., Yee, C., Tevlin, J.M., Birks, E.K., Durando, M.M., Pournajafi-Nazarloo, H., Cavaola, A.A. & McKeever, K.H. (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 Veterinary Science* 64 Pp 17–26 <https://doi.org/10.1016/j.jevs.2018.01.011>**

(Also in Physiological category) 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 HRV, in horses experienced with participation in such activities. We also hypothesized that symptoms of posttraumatic stress disorder (PTSD) would be reduced after five sessions of EAAT in veterans who had previously been diagnosed with PTSD. Specific objectives were as follows: (1) to measure plasma cortisol and oxytocin concentrations and HRV in horses participating in EAAT; and (2) to measure symptoms of PTSD before and after 5 days of EAAT and HR and blood pressure during EAAT in veterans previously diagnosed with PTSD.

In conclusion, 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.

- **Mallon, G.P. (1994) Cow as co-therapist: Utilization of farm animals as therapeutic aides with children in residential treatment. *Child and Adolescent Social Work Journal* 11 Pp 455-474 <https://doi.org/10.1007/BF01876570>**

(Summary only in Word) This exploratory study investigates the experiences of children who are placed in a residential treatment center that utilizes farm animals as one of its treatment approaches. The findings indicate that the children utilized the farm animals, like one would utilize the services of a therapist. Respondents indicated that they spoke to the animals, without fear that what they said would be repeated; that they visited the animals to feel better when they felt sad or angry; and that they learned about nurturing and caring for other living things. This article highlights a unique and novel approach to treatment that has not, as yet, been fully explored by the child welfare profession.

- **Mandra, P.P., Moretti, T.C.deF., Avezum, L.A. & Kuroishi, R.C.S. (2019) Animal assisted therapy - systematic review. Sociedade Brasileira de Fonoaudiologia 31 p. e20180243 DOI: [10.1590/2317-1782/20182018243](https://doi.org/10.1590/2317-1782/20182018243)**

The guiding question was: “for what and how is the practice assisted by animals in the health area?”. With 43 papers analysed from 2010-2018, this review showed that AAT can provide therapeutic efficacy, since animal involvement brings biopsychosocial benefits in all age groups, extending over the life of patients. Little was pointed out as a detrimental factor to the incorporation of AAT into the clinical routine. Animals reported on mainly dogs & horses, but mediators also cited as the dog, horse, elephant, association between dog and cat, insect (cricket), fish (aquarium) and guinea pig.

The populations studied included diagnoses of Autistic Spectrum Disorder (ASD), Dementia, cancer, Cerebral Palsy, various psychiatric disorders, pain, and two (n=2) healthy participant. A survey was conducted with hypertension, obesity, Stroke, and Down Syndrome. Communication disorders were specifically cited as diagnoses in three studies. All age groups were studied.

These findings reinforced that AAT can be indicated for intervention with different objectives, among them, intervention in physical, cognitive, communication and emotional aspects for different populations.

- **Masini, A. (2010). Equine-assisted psychotherapy in clinical practice. Journal of Psychosocial Nursing 48(10) Pp 30-34 DOI:[10.3928/02793695-20100831-08](https://doi.org/10.3928/02793695-20100831-08)**

Equine-assisted psychotherapy (EAP) is an approach in which horses are an integral part of the therapeutic process. This article provides an overview of EAP, including a brief historical perspective, key definitions, and review of pertinent literature. Benefits of the approach are presented, from the standpoint of field observations, client self-reports, and formal research articles. Rather than offer a comprehensive literature review, this article is intended to help non-EAP practitioners become more familiar with the approach.

- **Maujean M, Pepping, C.A., Kendall, E. (2015) A systematic review of randomized controlled trials of animal-assisted therapy on psychosocial outcomes. Anthrozoös 28(1) Pp 23–36 doi: [10.2752/089279315X14129350721812](https://doi.org/10.2752/089279315X14129350721812)**

Remarkably few studies have utilized gold standard randomized controlled designs. the aim of the present review was to examine the current state of the literature in regard to only randomized controlled trials (RCTs) examining the psychosocial benefits of AALs, which is a necessary step in order to move the field forward. Findings from the present review suggest that AALs may be of benefit to a wide range of individuals, including children with autism, and adults with psychological disorders, including schizophrenia. however, further research using well-designed RCTs is required to more definitively explore what specific types of AAL are beneficial for specific populations. Recommendations for future research are provided.

- **May, D.K., Nicholas, P., Seivert, A.C., Casey, R.J. & Johnson, A. (2016) Animal assisted therapy for youth: a systematic methodological critique. Human Anim. Interact. Bull. 4 Pp 1–18 doi/pdf/10.1079/hai.2016.0002**

This critical review assesses current research methodologies focusing on AATs for youth with physical and mental health concerns. The main aims of this review are to advance the knowledge base of empirically supported treatments and identify next steps that researchers can take to secure the place of AATs as sound and valid interventions for youth.

- **McCullough, L., Risley-Curtiss, C. & Rorke, J. (2015) Equine Facilitated Psychotherapy: A Pilot Study of Effect on Posttraumatic Stress Symptoms in Maltreated Youth. *Journal of Infant, Child, and Adolescent Psychotherapy* 14(2) Pp 158–173 DOI: [10.1080/15289168.2015.1021658](https://doi.org/10.1080/15289168.2015.1021658)**

Results suggest the EFP treatment effects are multimodal, working in multiple directions at the same time. Results also suggest that the EFP model may be a viable psychotherapy for traumatized youth suffering PTSD symptomatology. Studies show that EFP can be an effective intervention for women who have experienced abuse.

- **Meola, C. C. (2016) Addressing the needs of the Millennial workforce through equine assisted learning. *Journal of Management Development* 35(3) Pp 294–303 <https://doi.org/10.1108/JMD-08-2015-0110>**

(Summary only in Word) A literature review was conducted on ongoing research and use of EAL in the field of management training and development. Current research shows that EAL promotes competency development in leadership, communication, body language awareness, relationship building, and teamwork building.

- **Merenda, A. (2015) Can You Let Your Dog in the Room? *Clinical Zooanthropology and Gestalt Animal Assisted Psychotherapy. British Gestalt Journal* 24(2) Pp 32-37 (No DOI)**

Through two clinical vignettes, the article illustrates how the system of mediation between humans and animals is characterised and how it provides the basis for therapeutic contact. Each vignette reveals the therapeutic value of animals, and in particular dogs. The concluding remarks primarily involve ethical considerations concerning assisted therapy with animals and then clinical implications.

- **Mickelsson, R. (2019) Harnessing horses in social pedagogy: Equine-assisted social education in a school context. *International Journal of Social Pedagogy* 8(4) Pp 1-8 doi.org/10.14324/111.444.ijsp.2019.v8.x.003**

This study introduces a school-based social pedagogical programme using horses to support pupils' educational development, social and emotional skills and self-esteem.

Social interactions among school groups with pupils with special needs are strengthened by performing EASE (Equine-assisted social education). Thus, the approach could be applied more widely at schools so that teachers could participate in equine-assisted social pedagogy to learn and to teach social-emotional skills, connection and bridge-building communication.

- **Mims, D. & Waddell, R. (2016) Animal Assisted Therapy and Trauma Survivors *Journal of Evidence-Informed Social Work* 13(5) Pp452-457 <https://doi.org/10.1080/23761407.2016.1166841>**

The results of animal assisted therapy in the treatment of PTSD patients have seen significant results. In one study of the effect of dogs with patients, psychologists noted an 82% reduction in symptoms. One particular case noted that interacting with the dog for as little as one week, enabled a patient to decrease the amount of anxiety and sleep medications by half.

- **Muela, A., Balluerka, N., Amiano, N., Caldentey, M.A. & Aliri, J. (2017) Animal-assisted psychotherapy for young people with behavioural problems in residential care. *Clinical psychology & psychotherapy* 24(6) Pp 01485-94 DOI: [10.1002/cpp.2112](https://doi.org/10.1002/cpp.2112)**

The aim of this study was to evaluate the impact of an animal-assisted psychotherapy (AAP) programme on clinical symptoms, personal adjustment, and adaptive skills in a group of adolescents in residential care who had experienced childhood trauma and who presented mental health problems and difficulties adapting to the care home environment. The results indicated that, in comparison with controls, the young people who took part in the AAP programme reported a significant improvement on two measures of internalizing symptoms, namely, depression and sense of inadequacy. Although no significant differences were observed in relation to externalizing symptoms, the adolescents who received the AAP programme showed improved social skills in terms of their

ability to interact satisfactorily with peers and adults in the care home environment, as well as a more positive attitude towards teachers at school. These results suggest that AAP may be a promising treatment for young people who have experienced childhood trauma and who subsequently find it difficult to adapt to the residential care setting.

- **Mueller, M.K. & McCullough, L. (2017) Effects of Equine-Facilitated Psychotherapy on Post-Traumatic Stress Symptoms in Youth. *Journal of Child and Family Studies* 26(4) Pp 1164–1172 DOI [10.1007/s10826-016-0648-6](https://doi.org/10.1007/s10826-016-0648-6)**

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 (Social workers). Findings suggested a significant decrease in posttraumatic 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.

- **Murphy, L., Wilson, J. & Greenberg, S. (2017) Equine-assisted experiential learning in occupational therapy education. *Journal of Experiential Education* 40(4) Pp 366-76 doi.org/10.1177/1053825917712732**

This study explored the experience of students who participated in EAOT, related to problem-solving skills, analysis of activities, tolerance for ambiguity, effective communication, and reflection skills. Sixty occupational therapy students participated in EAOT, and completed a pretest and post-test survey regarding the experience. Students were initially fearful of experiential learning; however, a statistically significant improvement in tolerance to ambiguity was identified following the session. In addition, students perceived improved problem-solving skills, ability to analyze activities, and more effective communication skills. Clear benefits were identified in the equine-assisted experience for occupational therapy students.

- **Nagengast, S.L., Baun, M.M., Megel, M., & Leibowitz, J.M. (1997) The effects of the presence of a companion animal on physiological arousal and behavioral distress in children during a physical examination. *Journal of pediatric nursing* 12(6) Pp 323-330 [https://doi.org/10.1016/S0882-5963\(97\)80058-9](https://doi.org/10.1016/S0882-5963(97)80058-9)**

(Summary only in Word) The purpose of this study was to examine the effects of the presence of a companion animal on physiological arousal and behavioral distress exhibited by preschool children during a routine physical examination. A within-subject, time-series design was used to study 23 healthy children ages 3 years to 6 years during two physical examinations, with and without a dog. Statistically significant differences were found with greater reductions in subjects' systolic and mean arterial pressure, heart rate, and behavioral distress when the dog was present. Findings support the use of a companion animal in reducing stress experienced by children during a physical examination.

- **Naste, T.M., Price, M., Karol, J., Martin, L., Murphy, K., Miguel, J. & Spinazzola, J. (2018) Equine Facilitated Therapy for Complex Trauma (EFT-CT). *Journal of Child & Adolescent Trauma* 11 Pp 289-303 DOI [10.1007/s40653-017-0187-3](https://doi.org/10.1007/s40653-017-0187-3)**

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.

- **Nathans-Barel, I., Feldman, P., Berger, B., Modai, I. & Silver, H. (2004) Animal-Assisted Therapy Ameliorates Anhedonia in Schizophrenia Patients: A Controlled Pilot Study. *Psychotherapy and Psychosomatics* 74(1) Pp 31-5 DOI: [10.1159/000082024](https://doi.org/10.1159/000082024)**

Objective: To compare the effect on psychosocial treatment sessions in which a dog was an active participant (AAT) with comparable sessions without a dog, using a controlled protocol.

Results: The AAT group showed a significant improvement in the hedonic tone compared to controls. They also showed an improvement in motivation.

- **Nazarian, Z., Armoon, B., Rezaei, O., Banihashem, S. & Hamideh M. (2018) The effect of pet therapy concurrent with common medication on positive, negative, cognitive and motor symptoms of schizophrenia: a randomized control trial. *Pol Psychol Bull* 49(2) Pp 200-6 DOI - [10.24425/119487](https://doi.org/10.24425/119487)**

Animal Assisted Therapy is a technique for overcoming stress and isolation brought about by staying in a residential care facility, as well as increasing pleasure and life satisfaction. In older patients with schizophrenia, canine-assisted interactions have been linked to acute improvements in anxiety or depression, as well as increased cognitive functioning, but not with impulse control. 36 patients were included in this study, half control, half experimental. The experimental group gave care to rabbits (including feeding, tidying their cages, moving their cages) for 24 sessions of 90 minutes, three days per week – without any changes in their medical intervention – and the control group received their medicine and went on with their routine daily activities without any changes.

At the end of the intervention, both groups were assessed by the research tools and got compared once more in respect of the above-mentioned symptoms. There was a significant difference between the two groups in the positive, negative and cognitive symptoms (of Schizophrenia), but not with the motor symptoms.

Pet therapy could be successfully applied by parents, psychologists and care givers of these patients. We suggest using pet therapy for treatment of other psychiatric disorders as well and preferably like dogs and cats.

- **Nepps, P., Stewart, C.N. & Bruckno, S.R. (2014) Animal-Assisted Activity: Effects of a Complementary Intervention Program on Psychological and Physiological Variables. *Journal of Evidence-Based Complementary & Alternative Medicine* 19(3) Pp 211-215 DOI: [10.1177/2156587214533570](https://doi.org/10.1177/2156587214533570)**

(Also in Physiological category) Subjects of this study were 218 patients hospitalized on the mental health unit of a community hospital with an existing, complementary animal-assisted activity program. Half of the patients participated in a 1-hour session of animal-assisted activity. The other half, who served as a comparison group, participated in a 1-hour stress management program. There were significant decreases in depression, anxiety, pain, and pulse after animal-assisted activity program, comparable to those in the more traditional stress management group.

- **Nimer, J. & Lundahl, B. (2007) Animal-Assisted Therapy: A Meta-Analysis *Anthrozoös* 20(3) Pp 225-238 DOI: [10.2752/089279307X224773](https://doi.org/10.2752/089279307X224773)**

AAT was associated with moderate effect sizes in improving outcomes in four areas: Autism-spectrum symptoms, medical difficulties, behavioral problems, and emotional well-being. Contrary to expectations, characteristics of participants and studies did not produce differential outcomes. These broad outcome classes seem to be a function of the wide range of problems targeted by AAT as well as the considerable variation in the AAT interventions studied. While some see the lack of similarity in outcome measures across studies as a limitation in meta-analyses, others argue that variability in measuring dependent variables provides a robust picture of complex fields of study because many constructs are assessed through various strategies.

In conclusion, AAT shows promise as an additive to established interventions and future research should investigate the conditions under which AAT can be most helpful.

- **Nurenberg, J.R., Schleifer, S., Carson, S., Tsang, J., Montalvo, C. & Chou, K. (2013) Equine-facilitated group psychotherapy with chronic psychiatric inpatients: Two controlled studies. *European Psychiatry* 28 Pp 1 [doi: 10.1176/appi.ps.201300524](https://doi.org/10.1176/appi.ps.201300524)**

(Summary only in Word) We have introduced AAT at a 500-bed psychiatric hospital in New Jersey. We previously conducted a randomized control trial (n=103) of ten weekly AAT group therapy sessions, comparing canine assisted therapy, equine facilitated therapy (EFT), enhanced psychosocial therapy, and standard treatment in highly regressed and/or violent patients. Initial analyses indicated that the EFT group had fewer violence-related incidents during the 3 months following the intervention compared with the other groups ($p < 0.05$).

This presentation reviews the evolution and refinement of the intervention at our hospital, challenges to implementation, therapeutic course, preliminary outcome assessments, quantitative and qualitative, comparing EFT with standard treatment in the studies.

- **Nurenberg, J.R., Schleifer, S.J., Shaffer, T.M., Yellin, M., Desai, P.J., Amin, R., Bouchard, A. & Montalvo, C. (2015) Animal-assisted therapy with chronic psychiatric inpatients: equine-assisted psychotherapy and aggressive behavior. *Psychiatr Serv* 66 Pp 80–6 [doi: 10.1176/appi.ps.201300524](https://doi.org/10.1176/appi.ps.201300524)**

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. Violence-related incident reports filed by staff in the three months after study intake were compared with reports two months pre-intake. Interventions were well tolerated. AAT, and perhaps EAP uniquely, may be an effective therapeutic modality for long-term psychiatric patients at risk of violence.

- **O'Haire, M. E., Guerin, N.A. & Kirkham, A.C. (2015) Animal-Assisted Intervention for trauma: a systematic literature review. *Psychology for Clinical Settings*, a section of the journal *Frontiers in Psychology* 6:1121 [doi: 10.3389/fpsyg.2015.01121](https://doi.org/10.3389/fpsyg.2015.01121)**

The most prevalent outcomes were reduced depression, PTSD symptoms, and anxiety. There was a low level of methodological rigor in most studies, indicating the preliminary nature of this area of investigation.

- **Parish-Plass, N. (2008) Animal-assisted therapy with children suffering from insecure attachment due to abuse and neglect: a method to lower the risk of intergenerational transmission of abuse? *Clin. Child Psychol. Psychiatry* 13 Pp 7–31 [doi:10.1177/1359104507086338](https://doi.org/10.1177/1359104507086338)**

Animal-Assisted Therapy (AAT) provides avenues for circumventing difficulties in therapy with children suffering from insecure attachment (i.e. their distrust in adults as well as difficulties in symbolization due to trauma during the preverbal stage) as well as providing additional tools for reaching the inner world of the client. A rationale for the use of AAT as a unique therapy technique for children having suffered from abuse and neglect is followed by a number of clinical examples illustrating AAT.

- **Parish-Plass, N. (2018) Master's Thesis - University of Haifa: The Influence of Animal-Assisted Psychotherapy on the Establishment of the Therapeutic Alliance with Maltreated Children in Residential Care. DOI: [10.13140/RG.2.2.36514.25280](https://doi.org/10.13140/RG.2.2.36514.25280)**

(Summary of Thesis) Hypotheses: The TA will be established earlier and stronger in AAP than in psychotherapy without animals, the gap (if any) being smaller at a later stage in therapy. Secondly, the TA for subjects lacking trust in adults will be higher in AAP than in psychotherapy without animals. Finally, The TA will be stronger for subjects with avoidant-style attachment in AAP than in psychotherapy without animals.

Conclusions: These research results point to the significant contribution of the integration of animals into the psychotherapy process, specifically in terms of the establishment of the therapeutic alliance, with maltreated children characterized by avoidant attachment style, who otherwise may find it difficult to participate fully in the therapy process. This is especially critical due to the importance of therapy for these children. Although the small

number of subjects participating in this study limits the strength of conclusions that may be drawn from results, they point to the justification for the continuation of this research.

- **Pedersen, I., Nordaunet, T., Martinsen, E.W., Berget, B. & Braastad, B.O. (2011) Farm animal-assisted intervention: Relationship between work and contact with farm animals and change in depression, anxiety, and self-efficacy among persons with clinical depression. *Issues in Mental Health Nursing* 32(8) Pp 493–500 DOI: [10.3109/01612840.2011.566982](https://doi.org/10.3109/01612840.2011.566982)**

Fourteen adults with clinical depression participated twice a week in a 12-week farm animal-assisted intervention consisting of work and contact with dairy cattle. Each participant was video-recorded twice during the intervention, and the recordings were categorized with respect to various work tasks and animal and human contact. Levels of anxiety and depression decreased and self-efficacy increased during the intervention. Interaction with farm animals via work tasks showed a greater potential for improved mental health than via sole animal contact, but only when progress in working skills was achieved, indicating the role of coping experiences for a successful intervention.

- **Pedersen, I., Martinsen, E.W. Berget, B. & O. Braastad. B.O. (2012) Farm Animal-Assisted Intervention for People with Clinical Depression: A Randomized Controlled Trial. *Anthrozoos* 25(2) Pp149-160 DOI: [10.2752/175303712X13316289505260](https://doi.org/10.2752/175303712X13316289505260)**

The main aim of this study was to examine the effect of a 12-week farm animal-assisted intervention on levels of depression (BDI-IA), state anxiety (STAI-SS), and self-efficacy (GSE) in people with clinical depression. In the intervention group, the participants worked twice a week with the farmer in the cowshed. A significant decline in depression and a significant increase in self-efficacy were seen in the intervention group between recruitment and end of intervention. In the control group, no significant changes were found. No significant differences were found when comparing change in mental health measures in the intervention and control groups. However, more subjects in the intervention group (6) than in the control group (1) had clinically significant change, indicating that animal-assisted intervention in Green care could be beneficial for subgroups of clients and act as a useful supplement within mental health care.

- **Pendry, P. & Roeter, S. (2013) Experimental trial demonstrates positive effects of equine facilitated learning on child social competence. *Human-Anim. Interact. Bull.* 1(1) Pp 1–19 [doi/pdf/10.1079/hai.2013.0004](https://doi.org/doi/pdf/10.1079/hai.2013.0004)**

Researchers conducted a randomized controlled trial to determine if an 11-week equine facilitated learning program enhanced 5th-8th grade children's social competence. Results indicated significant group differences in mean levels of child social competence at post-test, suggesting a moderate positive effect of program participation. Waitlisted children in the control group who completed the program at a later date demonstrated significantly higher post-test levels of social competence after program completion, compared to their own pretest scores.

- **Pendry, P., Carr, A.M., Smith, A.N. & Roeter SM. (2014) Improving adolescent social competence and behavior: A randomized trial of an 11-week equine facilitated learning prevention program. *The Journal of Primary Prevention* 35 Pp281-93 DOI [10.1007/s10935-014-0350-7](https://doi.org/10.1007/s10935-014-0350-7)**

Parents of children in both groups rated child social competence at pretest and post-test. Three independent raters observed and reported children's positive and negative behavior using a validated checklist during each weekly session. This study makes a significant contribution to the existing literature on equine assisted intervention by conducting a randomized trial demonstrating significant effects of EFL on child social competence and behavior. The results yielded a moderate effect size that was statistically significant despite the small sample size. Results indicated a moderate positive effect on the social competence of 5th–8th grade children in response to program participation, including improvements in children's personal responsibility, decision making, goal-directed behavior, self-awareness, and self-management. Treatment effects were independent of children's pretest social competence levels, referral status, gender, and age. Results also showed that the extent to which positive behavior increased,

and negative behavior decreased during weekly program sessions was significantly associated with the number of sessions attended throughout the 11-week program.

- **Prothmann, A., Bienert, M., & Ettrich, C. (2006) Dogs in child psychotherapy: Effects on state of mind. *Anthrozoos* 19(3) Pp 265–277 [doi: 10.2752/089279306785415583](https://doi.org/10.2752/089279306785415583)**

Using a pretest-posttest design, this study investigates possible influences of animal-assisted therapy (AAT), using a dog, on the state of mind of children and adolescents who have undergone inpatient psychiatric treatment. To measure this, the Basler Befindlichkeits-Skala (BBS) was used, which measures general “state of mind” and provides four sub-scale scores: vitality, intra-emotional balance, social extroversion, and alertness. There were no direct instructions regulating the course of the therapy: the participants were free to choose the kind of interaction they had with the dog (playing, stroking, cuddling, feeding). For Group 1 patients (n = 61, with AAT), the results show highly significant increases in all dimensions of the BBS. These changes were not found in a second group (Group 2, n = 39), in which there was no AAT. Under our controlled clinical conditions, an effect size of 0.38 was calculated for the therapy using a dog. Incorporating a dog could catalyze psychotherapeutic work with children and adolescents.

- **Rauen, J.E., (2017) The Effects of Equine Assisted Learning on Emotional Intelligence Competencies and Leadership Skills. Honors Theses. 490 https://encompass.eku.edu/honors_theses/490**

(Summary of Thesis) The qualitative portion of this study shows that Equine-Assisted Learning can be very effective in increasing the emotional intelligence competencies social-awareness and self-awareness. There were also significant references to body language, controlling emotion, and building relationships. The chief competencies, social-awareness and self-awareness can be interpreted as an increased presence in individuals.

The quantitative portion of this study showed that participants of this study scored the horse as an effective means of developing leadership competencies.

- **Romaniuk, M., Evans, J. & Kidd, C. (2018) Evaluation of an equine-assisted therapy program for veterans who identify as ‘wounded, injured or ill’ and their partners. *PloS one* 13(9) Pp e0203943**

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). 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. 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.

- **Rossiter, J. & Matthews, E. (2011) Equine-Assisted Psychotherapy (EAP) as a Valid Means of Treatment for Some Survivors of Sexual Abuse. <https://www.academia.edu/67208830/>**

(Summary of Thesis) Among professionals working with EAP the credibility of the results are well understood despite the lack of evidence-based research. Because of poor research practices, the convincing, yet intangible, proof found in many successful case studies fails to validate equine assisted psychotherapy beyond the confines of the groups and clients involved in its practice. This paper aims to illustrate equine assisted psychotherapy’s usefulness in treating survivors of sexual abuse. For the purposes of this study, the concept of EAP has been limited to those programs utilizing a team of certified professionals in a recognized EAP program or facility. The objective of this paper is merely to expose those aspects of EAP that link it with issues of sexual abuse and trauma. While EAP may not be the best fit for every person or situation, this review illustrates how equine assisted

psychotherapy should at the very least be considered as a valid form of supplemental therapy in the treatment of issues related to sexual violence, among others.

- **Rothe, E.Q., Vega, B.J., Torres, R.M., Soler, S.M.C. & Pazos, R.M.M. (2005) From kids and horses: Equine facilitated psychotherapy for children. *Int. J. Clin. Health Psychol.* 5(2) Pp 373–383**
<http://www.redalyc.org/articulo.oa?id=33750210>

Beneficial results of a child-horse relationship include care translation, socialization and conversation, self-esteem promotion, companionship and affection stimulation. We conclude that equine facilitated psychotherapy provides well-being and improvement in quality of children with mental health problems.

- **Schroeder, K., & Stroud, D. (2015) Equine-Facilitated Group Work for Women Survivors of Interpersonal Violence. *The Journal for Specialists in Group Work* 40(4) Pp 365-386 DOI:**
[10.1080/01933922.2015.1082684](https://doi.org/10.1080/01933922.2015.1082684)

Equine-facilitated psychotherapy is a multifaceted treatment approach beginning to evidence positive outcomes for posttraumatic symptom reduction. In this practice article, an equine-facilitated psychotherapy group for women trauma survivors is described. Session topics, equine-focused interventions, group processes, and general outcomes are detailed. Group work implications and ideas for researching group work with horses are discussed.

- **Schroeder, K., Stroud, D., Sherwood, D.M. & Udell, M.A. (2018) Therapeutic factors in equine-facilitated group psychotherapy for women survivors of interpersonal violence. *The Journal for Specialists in Group Work* 43(4) Pp 326-48 DOI:**[10.1080/01933922.2018.1516707](https://doi.org/10.1080/01933922.2018.1516707)

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.

It is critical that group leaders do not rely on the animal-assisted activity as the primary vehicle for client self-awareness. In other words, group leaders need to maintain responsibility for teaching group members how to self-disclose, give and receive feedback, recognize interpersonal communication patterns during their interactions with each other and the animals, share observations, and experiment with new interpersonal behaviors. We recommend leaders of animal-assisted groups pay attention to these processes occurring within their groups, and allow ample time for group discussion over the course of each session. Here-and-now, member-to-member feedback exchange provides a structure for participants to make meaning of animal-assisted activities, process emotions, develop insight about themselves, and help each other.

- **Schultz, P.N., Remick-Barlow, A.G. & Robbins, L. (2007) Equine-assisted psychotherapy: a mental health promotion/intervention modality for children who have experienced intra-family violence. *Health & Social Care in the Community* 15(3) Pp 265-271 doi:** [10.1111/j.1365-2524.2006.00684.x](https://doi.org/10.1111/j.1365-2524.2006.00684.x)

The purpose of the present pilot study was to test the efficacy of EAP in a cross-sectional group of children referred to a psychotherapist for various childhood behavioural and mental health issues over an 18-month period. Sixty-three children received a mean number of 19 EAP sessions. Scores on the Children's Global Assessment of Functioning (GAF) Scale were determined pre- and post-treatment. All children showed improvement in GAF scores, and there was a statistically significant correlation between the percentage improvement in the GAF scores and the number of sessions given. Children in the group who had a history of physical abuse and neglect had a statistically significant greater percentage improvement in GAF scores after treatment than those who did not have a history of abuse and neglect. This study has demonstrated quick response to EAP, especially in younger children, but it remains to be determined what kind of long-term effects this type of intervention may provide.

- **Selby, A. & Smith-Osborne, A. (2013) A systematic review of effectiveness of complementary and adjunct therapies and interventions involving equines. *Health Psychology* 32(4) Pp 418–432 DOI: [10.1037/a0029188](https://doi.org/10.1037/a0029188)**

This systematic review examines the empirical literature in an emerging body of evidence for the effectiveness of biopsychosocial interventions involving equines across populations with chronic illness or health challenges. In the aggregate, the evidence is promising in support of the effectiveness of complementary and adjunct interventions employing equines in the treatment of health challenges. Future studies are needed that utilize rigorous and creative designs, especially longitudinal studies and comparisons with established effective treatments.

- **Sharpe, H. (2014) Equine-facilitated counselling and women with eating disorders: Articulating bodily experience. *Canadian Journal of Counselling and Psychotherapy* 48(2) Pp 127–152 [no DOI](#)**

This hermeneutic phenomenological study explored the experiences of 14 women with eating disorders who took part in an equine-facilitated counselling group. Through dialogic movement and communication with their horses, the participants were able to attune in different ways to themselves and their worlds, thus interrupting some of the habitual practices of disordered eating. These changes and the moments that made a difference are explored through a description of the horses and their environment, my reflections as a researcher and counsellor in this context, and a short story pertaining to one of the women and her horse. Implications for counselling theory and practice are discussed.

- **Shelef, A., Brafman, B., Rosing, T., Weizman, A., Stryker, R. & Barak, Y. (2019) Equine Assisted Therapy for Patients with Post Traumatic Stress Disorder: A Case Series Study. *Military medicine* 184(9-10) Pp 394-399 [no DOI](#)**

This systematic review provides evidence to support the implementation of AAls as adjunctive therapy to alleviate PTSD symptoms among military workers and veterans. 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.

- **Signal, T. et al (2013) Whispering to Horses: Childhood Sexual Abuse, Depression and the Efficacy of Equine Facilitated Therapy Sexual Abuse in Australia and New Zealand 5(1) Pp24-32 [no DOI](#) [ISSN \(print\):1833-8488](#)**

The current paper had two main aims. Firstly, to assess the efficacy of EFT as an adjunct therapy for depressive symptoms presenting in survivors of CSA, and secondly, to compare the relative efficacy of this approach across differing age groups, namely children, adolescents and adults.

The 'Trails of Discovery' EFT program utilised in the current study is based on the Equine Assisted Growth and Learning (EAGALA, 2012) model and experiential learning with the help of horses.

In summary, the current outcome evaluation outlines the efficacy of an EFT approach in ameliorating depressive symptomology (as indicated by CDI/BDI scores) across three age groups and two ethnicities. Treatment effect sizes are large and not dependent on age, gender or ethnicity, and compare favourably with those reported in the literature.

- **Silva, N.B. & Osório, F.L. (2018) Impact of an animal-assisted therapy programme on physiological and psychosocial variables of paediatric oncology patients. PLoS ONE 13(4)**
<https://doi.org/10.1371/journal.pone.0194731>

The objective of this study was to propose an intervention and safety protocol for performing animal-assisted therapy (AAT) and evaluating its efficacy in children under outpatient oncological treatment based on psychological, physiological, and quality of life indicators for the children and caregivers. Two dogs (one Labrador retriever and one golden retriever) were used, and activities such as sensory stimulation, gait training, and socialization were conducted. The variables analysed using validated self or other evaluations were stress, pain, mood, anxiety, depression, quality of life, heart rate, and blood pressure. In the patient group we observed a decrease in pain, irritation, and stress, and a tendency towards improvement of depressive symptoms. Among the caregivers, an improvement was observed in anxiety, mental confusion and tension.

- **Smith-Osborne, A. & Selby, A. (2010) Implications of the literature on equine-assisted activities for use as a complementary intervention in social work practice with children and adolescents. Child and Adolescent Social Work Journal 27 Pp 291–307 DOI 10.1007/s10560-010-0201-1**

This article reviews the literature investigating psychosocial benefits of equine-assisted activities (EAA) for children and adolescents with physical, mental, and family challenges. It further analyzes implications for clinical social work practice in the use of EAA as complementary or adjunct interventions with these populations, thus addressing a gap in the literature on population-specific outcomes of EAA.

This review suggests a continued need for continued intervention research into the psychosocial effects of EAA for children and adolescents, with attention to increased rigor in study design to investigate comparative psychosocial effects of EAA across diagnostic categories.

- **Souter, M.A. & Miller, M.D. (2007) Do Animal-Assisted Activities Effectively Treat Depression? A Meta-Analysis. Anthrozoos 20(2) Pp 167-180 DOI: 10.2752/175303707X207954**

We conducted a meta-analysis to determine the effectiveness of animal-assisted activities (AAA) and animal assisted therapy (AAT) for reducing depressive symptoms in humans. To be included in the meta-analysis, studies had to demonstrate random assignment, include a comparison/control group, use AAA or AAT, use a self-report measure of depression, and report sufficient information to calculate effect sizes, a statistical standardization of the strength of a treatment effect. Five studies were identified for analysis. The aggregate effect size for these studies was of medium magnitude and statistically significant, indicating that AAA/AAT are associated with fewer depressive symptoms. This analysis revealed gaps in the research on AAA/AAT, which we attempted to identify in order to better understand the factors that make AAA and AAT effective at reducing depression.

- **Staudt, M. & Cherry, D. (2017) Equine-facilitated therapy and trauma: Current knowledge, future needs. Advances in Social Work 18(1) Pp 403–414 <http://doi.org/10.18060/21292>**

The purpose of this review is to examine the use of EFT for clients suffering from trauma/PTSD. Studies are summarized and implications for future research are discussed. In general, findings suggest that EFT is a promising intervention for trauma/PTSD. Recommendations include a call for more research that includes veterans as well as for research that explicates the mechanisms by which EFT may be effective.

- **Stefanini MC, Martino A, Allori P, Galeotti F, Tani F. (2015) The use of animal-assisted therapy in adolescents with acute mental disorders: a randomized controlled study. Complement Ther Clin Pract. 21(1) Pp 42-46 doi: [10.1016/j.ctcp.2015.01.001](https://doi.org/10.1016/j.ctcp.2015.01.001)**

The aim of this study was to compare the effects of Animal-Assisted Therapy (AAT) with a standard treatment protocol in children and adolescents admitted to the psychiatry hospital for acute mental disorders. We used a methodology involving high quality standards for AAT research. A pre-post experimental design with a randomized controlled trial (RCT) in 34 hospitalized patients (17 treatment, 17 control) was carried out. Our results indicate a statistically significant improvement in global functioning, reduction in format of care and increased ordinary school attendance in the treatment group, but not in the control group. Conclusions: Our results verify that AAT can have significant positive effects on therapeutic progress and the recovery process.

- **Stewart, L.A., Bruneau, L. & Elliott, A. (2016) The Role of Animal-Assisted Interventions in Addressing Trauma-Informed Care. ACA Vistas online 15 Pp 1-4 [no DOI](#)**

When implemented with the appropriate education and training, AAI offers several key benefits that are central to trauma-informed care, including: reducing treatment anxiety, facilitating development of strong therapeutic rapport, decreasing feelings of detachment, and offering a non-verbal avenue for expression and processing. In this manuscript, the authors propose two ways AAI can add to trauma-informed care: animal-assisted therapy in counseling (AAT-C) and animal-assisted crisis response (AACR). Authors will discuss relevant literature, provide examples of appropriate interventions and techniques, and offer resources for further information.

- **Swindell, M. (2010) Equine therapy and social work: A winning combination. Social Work 17(8) Pp 1–4 https://www.socialworker.com/feature-articles/practice/Equine_Therapy_and_Social_Work:_A_Winning_Combination/**

Therapeutic riding is a great way to see remarkable changes in social work clients. Many social workers are now looking to alternative methods to assist our clients. One remarkable program that is yielding phenomenal results is therapeutic horseback riding. Research shows this form of therapy works wonders with almost every social work population: children, teens, juvenile delinquents, physically challenged, developmentally delayed, blind, deaf, and all forms of abuse. A special bond is formed between a child and a horse. Children who have not progressed in a conventional therapeutic setting often excel with therapeutic riding.

- **Symington, A. (2012) Grief and horses: putting the pieces together. Journal of Creativity in Mental Health 7(2) Pp 165–174 DOI: [10.1080/15401383.2012.685017](https://doi.org/10.1080/15401383.2012.685017)**

The effectiveness of grief counseling may be enhanced through the utilization of equine-assisted psychotherapy (EAP). Counselors and equine specialists team with horses to provide a unique approach based on metaphor and interaction. When incorporated into grief counseling, horses provide many unique therapeutic options. This article discusses the integrative potential of grief counseling through EAP while incorporating humanistic and cognitive theoretical counseling concepts, as well as providing case examples to illustrate these concepts.

- **Tsai, C-C., Friedmann, E. & Thomas, S.A. (2010) The Effect of Animal-Assisted Therapy on Stress Responses in Hospitalized Children. Anthrozoos 23(3) Pp 245-258 DOI: [10.2752/175303710X12750451258977](https://doi.org/10.2752/175303710X12750451258977)**

The stress associated with children's hospitalization may lead to negative physiological and psychological sequelae. Although Animal-Assisted Therapy (AAT) frequently is used to alleviate the stress of hospitalization, little scientific evidence exists on its efficacy in that situation. This study examined the effects of AAT on cardiovascular responses, state anxiety, and medical fear in hospitalized children. The decreases in SBP after AAT continued after the intervention was over. The findings suggest that the cardiovascular effect of AAT may continue for at least a few minutes after the AAT ends. Children's anxiety and medical fear did not differ after the AAT visit compared with the comparison intervention. This exploratory study indicates that AAT can decrease physiological arousal in hospitalized children and therefore may be useful in helping them cope better in a hospital setting. (These results

are a bit confusing). There was no evidence that the children who participated in the study were experiencing psychological stress. Their anxiety levels were low. Thus, no intervention could be expected to reduce anxiety. This finding is consistent with those that demonstrate that having a dog present does not reduce physiological stress indicators during dental procedures, in the general population. Havener et al (2001) found that a dog's presence was effective at reducing these indicators for children who were distressed prior to their dental procedure.

- **Tuuvás, M., Carlsson, J. & Norberg, J. (2017) A healing relationship: Clients' experiences of the long-term relational significance of the horse in horse assisted psychotherapy. *European Journal of Psychotherapy & Counselling* 19(3) Pp 307-328 DOI: [10.1080/13642537.2017.1348375](https://doi.org/10.1080/13642537.2017.1348375)**

The aim of the present study was to investigate how former clients from horse assisted psychotherapy experienced the horse several years after treatment was completed. The analysis showed that many years after completion of treatment, the horses were still remembered as the most important individuals in the informants' lives during the time of treatment. This was captured by the core category 'A healing relationship'. These findings are in line with previous research that found that patients in horse assisted psychotherapy and their family members attributed improvements from treatment to the patients' relationship to the horses, but adds that the clients also keep these views at follow-up several years after termination of treatment.

- **Van Wyk, C. (2016) A Jungian perspective on synchronicity in equine-assisted psychotherapy. *Tydskrif Vir Geesteswetenskappe*. Found in issue 56(3) Pp 795-808 doi:[10.17159/2224-7912/2016/v56n3a5](https://doi.org/10.17159/2224-7912/2016/v56n3a5)**

Van Wyk plans to do his PhD study in Social Work on synchronicity in equine-assisted psychotherapy. He plans to investigate, describe and explain the said phenomenon primarily from the Jungian paradigm. Although there is a variety of literature sources on synchronicity and equine-assisted psychotherapy as entities in and of themselves, there is a dearth of information about the phenomenon of synchronicity as experienced during equine-assisted psychotherapy. This article thus aims to address the mentioned dearth in the literature by subjecting this phenomenon to scrutiny.

- **Vidrine, M., Owen-Smith, P. & Faulkner, P. (2002) Equine-facilitated group psychotherapy: Applications for therapeutic vaulting. *Issues in mental health nursing* 23(6) Pp 587-603 DOI: [10.1080/01612840290052730](https://doi.org/10.1080/01612840290052730)**

In this article, the reader is introduced to equine-facilitated psychotherapy's theoretical underpinnings, techniques, and outcomes as illustrated by actual clinical vignettes and research. Vaulting, which is "the art of dance/gymnastics on the back of a moving horse", is an ancient sport that was featured in the games of early Rome along with chariot and horse racing. Modern vaulting, as it is practiced today, is heavily utilized in European countries to prepare equestrians for riding and as therapy for special needs individuals. While advanced vaulting requires years of preparation, therapeutic vaulting is ideal for beginners. Exercises are individually tailored to the participants' needs and success at some level can be virtually guaranteed. The decision to treat children and adolescents in groups at Horse Time is guided by both practical and clinical considerations. In general, it is much easier logistically to facilitate a vaulting experience for a group than an individual. In conclusion, therapeutic vaulting offers a unique opportunity for experiential group psychotherapy experience. Participants are able to address developmental, personal, and social needs in the context of a somatically engaging, challenging, and enjoyable activity. However, despite compelling testimonials and the growing popularity of equine-facilitated psychotherapy, the lack of quantitative evidence may limit its acceptance by the mainstream American medical community and accessibility to consumers.

- **Villalta-Gil, V., Roca, M., Gonzalez, N., Domenec, E., Cuca, B., Escanilla, A., & Haro, J.M. (2009) Dog-assisted therapy in the treatment of chronic schizophrenia in patients. *Anthrozoos* 22(2) Pp 149–159 DOI: [10.2752/175303709X434176](https://doi.org/10.2752/175303709X434176)**

Patients with a diagnosis of schizophrenia living in long-term care units show high levels of disability. The present study aimed to assess the effectiveness of including a trained therapy dog in an intervention program applied to institutionalized patients with chronic schizophrenia. Introducing a dog into the psychosocial intervention for patients with schizophrenia produced some positive outcomes. However, the results of the study are not conclusive and must be interpreted cautiously.

- **Wanneberg, P. (2014) Disability, riding, and identity: A qualitative study on the influence of riding on the identity construction of people with disabilities. *International Journal of Disability, Development and Education* 61(1) Pp 67–79 <http://dx.doi.org/10.1080/1034912X.2014.878543>**

Semi-structured face-to-face interviews were used to examine the influence of riding on the identity construction of people with disabilities. Fifteen participants, three men and twelve women, were between fifteen and sixty-five years old and have various physical disabilities. The data analysis derives from identity theory, a social-psychological theory that understands identity as an interaction between the individual and society. The findings show that (i) the informants either acquire a new identity as a rider or they resume with the rider identity they had before their illness or accident; (ii) riding offers a link to their previous lives; and (iii) riding helps to focus on what the informants can do, and not, as this group is often viewed by society, on what they cannot do. The findings thus show that riding can influence the identity construction of people with disabilities.

- **Wells, D.L. (2009) The State of Research on Human–Animal Relations: Implications for Human Health. *Anthrozoos* 32(2) Pp 169–181 DOI: [10.1080/08927936.2019.1569902](https://doi.org/10.1080/08927936.2019.1569902)**

(Also in Physiological category) This paper reviews the current state of affairs regarding the relationship between companion animals and human health, focusing on both the physical and psychological health outcomes related to human–animal interactions. A particular emphasis is placed on disorders prevalent in modern-day society, notably cardiovascular disease and depression. The possible mechanisms by which companion animals might be able to enhance human wellbeing and quality of life are discussed, focusing on routes including, amongst others, the provision of companionship, social lubrication, and improvements to physical fitness. The role of the social bonding hormone, oxytocin, in facilitating attachment to our pets and the implications for human health is also discussed. By and large, most studies report a positive association between interactions with animals and the physical and/or psychological health of people, and lend support for the commonly held belief that pets are good for us.

- **Whittlesey-Jerome, W.K. (2014) Adding Equine-Assisted Psychotherapy to Conventional Treatments: A Pilot Study Exploring Ways to Increase Adult Female Self-Efficacy among Victims of Interpersonal Violence. *The Practitioner Scholar: Journal of Counseling and Professional Psychology* 3(1) Pp 82–101 [no DOI](#)**

For eight weeks, the experimental group added weekly two-hour EAP sessions to existing treatments. The comparison group received regular group therapy. Quantitative results found the EAP group with greater improvement across self-efficacy, depression, and general functioning. Phenomenological themes in the qualitative journals added insight and clearly articulated some mechanisms underlying benefits conveyed from the addition of EAP to conventional treatments. This pilot study contributes to the growing evidence base for the use of equines in behavioral health treatment with adult female victims of Interpersonal Violence.

- **Wilson, K., Buultjens, M., Monfries, M. & Karimi, L. (2015) Equine-assisted psychotherapy for adolescents experiencing depression and/or anxiety: A therapist's perspective. *Clinical Child Psychology and Psychiatry* 1–18 DOI: [10.1177/1359104515572379](https://doi.org/10.1177/1359104515572379)**

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.

- **Yorke, J., Adams, C., & Coady, N. (2008) Therapeutic value of equine–human bonding in recovery from trauma. *Anthrozoos* 21(1) Pp 17–30 DOI: [10.2752/089279308X274038](https://doi.org/10.2752/089279308X274038)**

Equine-facilitated psychotherapy is a promising approach to address self-esteem, depression, and other emotional or psychological problems. Restoration of the trauma victim's capacity for recovery hinges on provision of safety and development of trust, self-esteem, and self-efficacy. Thus, recovery from trauma represents an ideal context for exploring the therapeutic impact of equine–human relationships. The equine–human bonds described by participants have parallels both with important elements of therapeutic alliances between professionals and clients and with the positive impact of relationship factors on client outcome.

- **Yount R, Ritchie EC, St. Laurent M, Chumley P, Olmert MD. (2013) The role of service dog training in the treatment of combat-related PTSD. *Psychiatric Annals* 43(6) Pp 292-295 doi: [10.3928/00485713-20130605-11](https://doi.org/10.3928/00485713-20130605-11)**

In response to the critical need for adjunctive treatments for soldiers with refractory forms of mental injury — primarily posttraumatic stress disorder (PTSD) — the US military is developing complementary and alternative medicine (CAM) techniques, including animal-assisted intervention (AAI). Two case studies are reported. These cases demonstrate the effects service dog training as a purpose-driven intervention have on the symptoms of PTSD and mild TBI and how such a program can facilitate psychological and social improvement, and functional independence.

- **Zilcha-Mano, S. (2017) Resolution of alliance ruptures: The special case of animal-assisted psychotherapy. *Clinical Child Psychology and Psychiatry* 22(1) Pp 34-45 DOI: [10.1177/1359104516671385](https://doi.org/10.1177/1359104516671385)**

Alliance ruptures has been previously defined as breakdowns in the process of negotiation of treatment tasks and goals and a deterioration in the affective bond between patient and therapist. Alliance ruptures have been found to predict premature termination of treatment and poor treatment outcomes. But ruptures can also present important opportunities for gaining insight and awareness and for facilitating therapeutic change. A process of rupture resolution may lead to beneficial outcomes and serve as a corrective emotional experience. The article describes unique processes of alliance rupture resolution inherent in animal-assisted psychotherapy (AAP). Building on Safran and Muran's model and on clinical examples, the article describes strategies for identifying ruptures in AAP and techniques for repairing them to facilitate a corrective experience in treatment. Implications for clinical practice and future research are discussed.

INCREASE IN PHYSICAL/PHYSIOLOGICAL HEALTH –

Reduced Stress Parameters (Cortisol, HRV & BP), increased cardiovascular health & improved immune system functioning, ABI

- **(**) Kovács, K.E. Balogh, E.B., Lovas, B. Boris, P., Nagy, B.E. (2024) The role of animal-assisted programs in physical health improvement of children and adolescents with special education needs - a systematic review BMC Public Health 24:824 <https://doi.org/10.1186/s12889-024-18326-y>**

(Also in ADHD category) Our findings indicate that dogs and horses are animal-assisted programs' most commonly used animals. Additionally, autism, cerebral palsy, and ADHD were found to be overrepresented in these programs.

The principal measures centred on the physiological variables related to the nervous system and motorium-related indicators. The studies were generally of exceptional methodological soundness.

Physiological variables related to the nervous system included papers measuring anthropometric variables, heart rate, respiratory rate, peripheral oxygen saturation (SpO₂), systolic and diastolic blood pressure, brain activity, facial motricity, neurodevelopmental progression, physical stress and salivary cortisol. Among them, cerebral palsy, developmental dysphasia, various physiological disabilities, post-operative cases, neurological disorder and severe and multiple disabilities were involved. Although the durations of the programs show a significant variety (between 1 occasion and 10 months), the length of the sessions was similar, approximately 45–50 min. Even if the papers focus on children with issues and the methods used also vary, the papers emphasise the positive impact of animal-assisted programs, supporting physiological health. The sympathetic nervous system works in a more efficient way, heart rate, respiratory rate, peripheral oxygen saturation (SpO₂), systolic and diastolic blood pressure become slower as a result. Brain activity improves and neurodevelopmental progression can also be experienced.

The other group of variables named as motorium-related indicators focused on children with autism, developmental delay, cerebral palsy, physical disability, ADHD, dyspraxia. Regarding the results, the papers highlight the positive impact of the animal-assisted activities, e.g. it improves motoric function and ambulation, gross-motor development and motor proficiency, muscle spasticity and coordination.

- **(**) McDuffee, L.A., Montelpare, W.J. & LeBlanc, C. (2024) Psychophysiological effects of equine-facilitated psychotherapy on Veterans with PTSD and their horse partners. Journal of Military, Veteran and Family Health 2024 Jun 10(3) (aop):e20230063 [doi:10.3138/jmvfh-2023-0063](https://doi.org/10.3138/jmvfh-2023-0063)**

To determine the efficacy of EFP with Veterans with PTSD and the effect on horses through measurements of human-horse dyads, a prospective cohort design was used consisting of four eight-week EFP interventions for Veterans with PTSD. Changes in stress hormones and heart rate variability (HRV) in humans and horses, along with PTSD symptoms in humans and behavioural responses in horses, were recorded.

Results: In humans, average daily measures of cortisol decreased and average daily oxytocin concentrations increased after each session. Additionally, daily self-reports of mood, anxiety, and well-being improved after each session. The Sympathetic Nervous System Index increased and Parasympathetic Nervous System Index decreased after daily sessions. Horses showed no significant difference in HRV, oxytocin, or observed stress behaviors. However, a significant decrease was observed in cortisol from pre- to post-session.

Discussion: These findings indicate that EFP had psychological and physiological benefits for individuals with PTSD with no concomitant negative physiological effect on the welfare of horses. Biological metrics combined with human psychological and equine behavioural measures enhance understanding of the effect of EFP on the dyad participants.

- **Berget, B., Vas, J., Pedersen, G., Uvnäs-Moberg, K. & Newberry, R.C. (2023) Oxytocin levels and self-reported anxiety during interaction between Humans and Cows. *Frontiers in Psychology* 14 14:1252463 doi: [10.3389/fpsyg.2023.1252463](https://doi.org/10.3389/fpsyg.2023.1252463)**

The significant decline in state anxiety (STAI-SS) during a single 15-min interaction with a cow, and positive qualitative impression of the experience, is consistent with results from previous studies involving dogs and provides support for the inclusion of interactions with farm animals within the concept of Green Care. The lack of a significant groupwise change in Oxytocin level in the current study illustrates the complexity of mechanisms involving Oxytocin as well as the complexity of technologies used to measure Oxytocin.

- **Condurache, I., Duduca, I., Gheorghita, A., Nechita, A., Mucileanu, C. & Rotariu, M. (2024) Hippotherapy Used in Medical Recovery. *Balneo and PRM Research Journal* 15(3) PP 741 <https://doi.org/10.12680/balneo.2024.741>**

The main objective of the paper is to identify therapies that use horses for patients diagnosed with various conditions, the benefits of these therapies on patients' motor skills, and their effects on patients' mental state. Additionally, we aim to identify horse-related activities that enhance concentration, help address behavioral issues and facilitate patients' integration into social groups.

Equine therapy, or horse-assisted therapy, has proven effective across a range of conditions, with existing literature describing its positive effects for patients diagnosed with cerebral palsy, multiple sclerosis, and autism. Additionally, favorable outcomes of equine therapy have been observed in managing pain, whether chronic or post-traumatic stress. Isolated studies also describe potential positive effects of horse therapy for individuals suffering from various dependencies (i.e. SUD).

- **Hoagwood, K.; Vincent, A.; Acri, M.; Morrissey, M.; Seibel, L.; Guo, F.; Flores, C.; Seag, D.; Peth Pierce, R.; Horwitz, S. (2022) Reducing Anxiety and Stress among Youth in a CBT-Based Equine-Assisted Adaptive Riding Program. *Animals* 12, 2491 doi.org/10.3390/ani12192491**

All instructors were trained in the RiA curriculum and delivered the same lessons. In addition to assessing the youth's perception and changes over time, the researchers also assessed changes in the horses, both through saliva sampling. Physiological data and self-report measures were taken at weeks one, four, seven, and ten for the youth and horses. Saliva assays assessed cortisol as a physiological marker of stress and anxiety, and oxytocin as a measure of relaxation. Anxiety, as measured by caregiver self-reporting, significantly decreased from pre- to post-test, while emotional regulation scores increased. No significant changes in self-efficacy from pre- to post-test were observed. Saliva samples obtained from participants before and after riding sessions showed a consistent decrease in cortisol and a significant increase in oxytocin at two of the four timepoints (Week 1 and Week 7), but no overall pre- to post-test changes. Horse saliva data were collected using a modified bit; there were no significant changes in oxytocin or cortisol, suggesting that the horses did not have an increase in stress from the intervention.

- **Narad, M.E., Knestrick, K., Wade, S.L., Kurowski, B.G., McConnell, A.R. & Catherine C. Quatman-Yates, C.C. (2024) The feasibility and acceptability of integrating dogs into inpatient rehabilitation therapy with children with acquired brain injury *PMR* 16(11) Pp 1214-22 <https://doi.org/10.1002/pmrj.13176>**

To examine the feasibility and acceptability of incorporating dogs into physical therapy and occupational therapy sessions with pediatric patients being treated on an inpatient rehabilitation unit for acquired brain injury.

Feasibility was supported by high enrollment rate (88.9%) and dog attendance rate of 93%–95%; patients reported a high level of closeness with the dog in session, indicating that the dogs were integrated in meaningful ways. No adverse events were noted, therapists reported that intervention was convenient, and clinical care was not negatively impacted. A high level of satisfaction was reported by families and therapists.

Findings suggest that AAT is feasible and acceptable, and it may be a valuable tool for therapists working with patients with ABI on an inpatient rehabilitation unit.

- **(**) Coakley, A.B, Annese, C.D, Empoliti, J.H, & Flanagan, J.M. (2021) The experience of animal assisted therapy on patients in an acute care setting. Clinical Nursing Research 30(4) Pp 401-5 DOI: [10.1177/1054773820977198](https://doi.org/10.1177/1054773820977198)**

(Also In Physiological category) This investigation aimed to explore the effects of the AAT dog visitation program on patients. Measures included salivary cortisol, anxiety, wellbeing, comfort, respiratory and heart rate. Analysis indicates a significant reduction in heart and respiratory rates and level of anxiety, with improved levels of comfort and well-being. The salivary cortisol result was non-significant $p = .623$. This ATT dog program resulted in reduced anxiety levels and decreased heart and respiratory rates while improving subjective measures of comfort and wellbeing.

- **(**) Craig, J., Kaplan, C., Rode, D., Stojanowski, M., Smith, C., & Cohen, B. (2024) The Impact of Facility Dog Programming on Mood and Stress Among Healthcare Workers in Adult Inpatient Oncology Units. Practical Implementation of Nursing Science 3(1) Pp 16–26 DOI: <https://doi.org/10.29024/pins.62>**

(Also in Physiological category) Results: Seventy-six staff members participated in the intervention. Statistically significant improvements in mood occurred across all 32 items and eight subscales of the Brunel Mood Scale, which showed increased feelings of calmness, happiness, and vigor, and decreased feelings of depression, fatigue, anger, confusion, and tension. Self-reported physical symptoms of stress, including dry mouth, fatigue, headache, elevated heart rate, muscular tension, heart palpitations, stomach upset, and sweating also decreased following interaction with the facility dog.

- **(**) Kline, J. A., VanRyzin, K., Davis, J. C., Parra, J. A., Todd, M. L., Shaw, L. L., Haggard, B. R., Fisher, M. A., Pettit, K. L., & Beck, A. M. (2020). Randomized Trial of Therapy Dogs Versus Deliberative Coloring (Art Therapy) to Reduce Stress in Emergency Medicine Providers. Academic emergency medicine: official journal of the Society for Academic Emergency Medicine, 27(4), 266–275 <https://doi.org/10.1111/acem.13939>**

(Also in Physiological category) Objective: We hypothesize that if physicians and nurses interact with a therapy dog for 5 minutes while on ED shift, both their perceived and their manifested stress levels will decrease. In this single-center, prospective, randomized controlled clinical trial (NCT03628820), we tested the effectiveness of therapy dogs versus coloring a mandala and versus no intervention (control) on provider stress. Consenting emergency medicine physicians and nurses provided three self-reported assessments of stress and saliva samples at the start (T1), at the middle (T2), and near the end (T3) of shift. Thirty minutes prior to T2, participants were randomized to either interacting with a therapy dog or coloring for 5 minutes; controls had neither.

Conclusion: This randomized controlled clinical trial demonstrates preliminary evidence that a 5-minute therapy dog interaction while on shift can reduce provider stress in ED physicians and nurses. In conclusion, in this three-arm trial, we found that emergency providers randomized to a 5-minute interaction with a therapy dog and handler had a significant reduction in self-reported anxiety using a visual analog scale compared with patients randomized to deliberate coloring. Emergency providers had lower end-of-shift salivary cortisol with either coloring or therapy dog exposure compared with controls. These findings suggest that therapy dogs can reduce cognitive and physiological stress experienced by emergency care providers while on duty in the ED.

- **(**) Wijker, C., Kupper, N., Leontjevas, R., Spek, A. & Enders-Slegers, M.-J. (2021) Examining the effects-of-animal-assisted Therapy on autonomic and endocrine activity in adults with autism spectrum disorder: A randomized controlled trial. General Hospital Psychiatry 72 Pp 36–44 doi.org/10.1016/j.genhosppsych.2021.05.003**

Animal-assisted therapy (AAT) has shown physiological stress-reductive effects in children with ASD. The aim of the current study was to examine the acute psychophysiological response to an AAT session, and to examine the longer-term stress-physiological effects of the intervention, up until 10 weeks post-treatment, in comparison to waiting-list controls. Method: A randomized controlled trial with pre-intervention. The AAT interventional session was significantly associated with reduced cortisol levels, while parasympathetic and sympathetic cardiovascular activity remained unaltered. No significant changes were found for stress-physiological measures at post-treatment time points. Conclusions: Acute stress reduction, reflected in significant reduction in cortisol levels, was found during an AAT session in adults with ASD, without ID. More research is needed to explore to what extent the specific factors of AAT have contributed to the decrease in cortisol and whether stress reduction is possible for the longer-term.

- **(**) Zhu, X., Suarez-Jimenez, B., Zilcha-Mano, S., Lazarov, A., Arnon, S., Lowell, A.L., Bergman, M., Ryba, M., Hamilton, A.J., Hamilton, J.F., Turner, J.B., Markowitz, J.C., Fisher, P.W. & Neria, Y. (2021) Neural changes following equine-assisted therapy for posttraumatic stress disorder: A longitudinal multimodal imaging study. Hum Brain Mapp 1–10 DOI: [10.1002/hbm.25360](https://doi.org/10.1002/hbm.25360)**

This exploratory study is the first to demonstrate that EAT can affect functional and structural changes in the brains of patients with PTSD. The data gathered revealed significant brain changes in the limbic-basal ganglionic reward system along with sustained improvement in PTSD symptoms. The findings suggest that EAT may target reward circuitry responsiveness and produce a caudate pruning effect from pre- to post-treatment.

- **Maran, D.A., Cortese, C.G., Ilesanmi, O.S., Gianino, M.M. & Chirico, F. (2022) Animal-Assisted Intervention and Health Care Workers' Psychological Health: A Systematic Review of the Literature. Animals 12 Pp 383-398 <https://doi.org/10.3390/ani12030383>**

The studies included in our review showed that lower levels of cortisol, which is a biological indicator of work-related stress in an occupational context, as well as lower levels of BOS and better levels of perceived psychological well-being and real-time mood, may be manifestations of lower levels of work-related stress. However, other benefits of AAI in healthcare workers relate to the areas of relationships and interpersonal communication, such that their empathy towards colleagues and patients may increase. The results indicate that implementing the AAI program in a busy clinic is feasible and that the program is accepted by medical professionals because of the immense psychological benefits it provides.

- **Teo, J. T., Johnstone, S.J., Romer, S.S. & Thomas, S.J. (2022) Psychophysiological mechanisms underlying the potential health benefits of human-dog interactions: A systematic literature review. International Journal of Psychophysiology 180 Pp 27-48 <https://doi.org/10.1016/j.ijpsycho.2022.07.007>**

(Summary only in Word) This SLR is the first to systematically review the changes in health-related indices in human-dog interactions as measured by physiological variables. Overall, the reviewed 129 studies showed evidence for significant cardiac and neuroendocrine changes in humans following human-dog interactions, particularly increased heart rate variability, decreased cortisol, and increased oxytocin concentrations in more than half of the studies that measured these variables. These findings provide evidence of specific pathways through which human-dog contact may confer health benefits, likely through relaxation, bonding, and stress reduction.

- **Vincent, A., Farkas, K. & Heima, M. (2020) Acceptability and Demand of Therapy Dog Support Among Oral Health Care Providers and Caregivers of Pediatric Patients. *Pediatric Dentistry* 42(1)**
<https://www.researchgate.net/publication/339427222>

There is growing resistance from caregivers toward the use of pharmacological interventions to control children's disruptive behavior caused by dental care-related fear and anxiety (i.e., dental fear) because of health and financial considerations. This cross-sectional study evaluated the acceptability and demand for therapy dog support in pediatric dentistry. Concerns raised by caregivers and dental professionals regarding safety, zoonosis/infection control, and clinic efficiency can be addressed through the implementation of a clear protocol for procedures of practice. Therapy dog support in pediatric dentistry as an accessible, nonpharmacological tool which may be a simple, safe, cost-efficient resource to provide children a novel and calming experience in a pediatric dental setting. This is the largest AAI survey in a dental environment to date.

- **Zhang, Y., Yan, F., Li, S., Wang, Y. & Ma, Y. (2021) Effectiveness of animal-assisted therapy on pain in children: A systematic review and meta-analysis. *International journal of nursing sciences* 8(1) Pp30-7**
doi.org/10.1016/j.ijnss.2020.12.009

(Also in Pain Management Section) Little is known about its effects on pain in children, and this study aims to systematically evaluate the effects of AAT on pain in children. The evaluation results of this system showed that AAT could reduce children's pain. AAT could also reduce children's the degree of behavioral distress to some extent, and influence the respiratory rate, heart rate, diastolic blood pressure, oxygen saturation and cerebral oxygenation in children, but could not significantly improve the anxiety level of children and their parents. (On the one hand, the short intervention duration couldn't establish stable effect, thus may not indicate significantly statistical result; on the other hand, the baseline level of anxiety in the AAT group was lower than that in the control group, which may reduce the potential ability to identify the change of anxiety.) Qualitative research results also found that AAT can reduce the behavioral distress degree of children to a certain extent, so that children can get comfort and satisfaction, which is consistent with the research results of Hansen et al (1999).

- **Araujo, T.B., Silva, N.A., Costa, J.N., Pereira, M.M. & Safons, M.P. (2011) Effect of equine-assisted therapy on the postural balance of the elderly. *Braz. J. Phy. Ther.* 15(5) Pp 414–419** [no DOI](#)

Because senescence tends to normalize stabilometric measures, the number of equine-assisted therapy sessions was insufficient to determine any differences. Nevertheless, the significant improvement in TUG test scores demonstrates that this treatment frequency was a predictor of reduced fall risk in the elderly.

- **Baldwin, A.L., Rector, B.K. & Alden, A.C. (2018) Effects of a form of equine-facilitated learning on heart rate variability, immune function, and self-esteem in older adults. *People and Animals: The International Journal of Research and Practice* 1(1) Article 5 Pp 1-17**
<https://docs.lib.purdue.edu/paij/vol1/iss1/5>

The horse interaction, Con Su Permiso, is a relationship- building interactive exercise with the horse based on the Adventures in Awareness invitational approach. During equine and control interactions, the subject's HRV (and the horse's when present) was monitored, while being synchronized with a video recording. An exit interview was conducted after each interaction. Words and gestures relating to feelings and sensations were categorized as positive, neutral, or negative. Human heart and respiration rates as well as HRV (SDRR) increased significantly during interactions with horses and humans compared to baseline. During equine interactions, human HRV frequency spectrum shifted somewhat to the very low frequency (VLF) range. The four horses' HR and HRV responses were varied, but in all cases HRV frequency peaks were predominantly in the VLF range. Human self-esteem increased during interactions with horses and humans but sIgA (salivary immunoglobulin A), did not change. During exit interviews participants used more positive and fewer negative gestures. These findings mostly support our hypothesis and suggest that engaging with horses benefits humans, indicating an enlivened state without stress.

- **Beetz, A., Unvas-Moberg, K., Julius, H. & Kotrschal, K. (2012) Psychosocial and psychophysiological effects of human-animal interactions: the possible role of oxytocin. *Frontiers in Psychology* 3: 26183 <https://doi.org/10.3389/fpsyg.2012.00234>**

Here, we review the evidence from 69 original studies on human-animal interactions (HAI) which met our inclusion criteria with regard to sample size, peer-review, and standard scientific research design. Among the well-documented effects of HAI in humans of different ages, with and without special medical, or mental health conditions are benefits for: social attention, social behavior, interpersonal interactions, and mood; stress-related parameters such as cortisol, heart rate, and blood pressure; self-reported fear and anxiety; and mental and physical health, especially cardiovascular diseases. Limited evidence exists for positive effects of HAI on: reduction of stress-related parameters such as epinephrine and norepinephrine; improvement of immune system functioning and pain management; increased trustworthiness of and trust toward other persons; reduced aggression; enhanced empathy and improved learning. We propose that the activation of the oxytocin system plays a key role in the majority of these reported psychological and psychophysiological effects of HAI. Oxytocin and HAI effects largely overlap, as documented by research in both, humans and animals, and first studies found that HAI affects the oxytocin system. As a common underlying mechanism, the activation of the oxytocin system does not only provide an explanation, but also allows an integrative view of the different effects of HAI.

- **Branson SM, Boss L, Padhye NS, Trötscher T, Ward A. (2017) Effects of animal-assisted activities on biobehavioral stress responses in hospitalized children: a randomized controlled study. *J Pediatr Nurs*. 36 Pp 84-91 [doi: 10.1016/j.pedn.2017.05.006](https://doi.org/10.1016/j.pedn.2017.05.006)**

Purpose: This study assessed the effectiveness of animal-assisted activities (AAA) on biobehavioral stress responses (anxiety, positive and negative affect, and salivary cortisol and C-reactive protein [CRP] levels) in hospitalized children.

Design and Methods: This was a randomized, controlled study.

Conclusions: Although changes were in the expected direction, the magnitude of the effect was small. Future randomized controlled trials with larger recruitment are needed to determine the effectiveness of AAAs in reducing biobehavioral stress responses in hospitalized children.

- **Burton, L.E., Qeadan, F. & Burge, M.R. (2019) Efficacy of equine-assisted psychotherapy in veterans with posttraumatic stress disorder. *Journal of Integrative Medicine* 17(1) Pp14-19 <https://doi.org/10.1016/j.joim.2018.11.001>**

(Also in Physiological category) As compared to the control group, a 6-week EAP program did not produce a statistically significant difference with respect to PCL-M (PTSD Check List-Military Version) and CD-RISC (Connor-Davidson Resilience Scale) 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.

- **Calvo, P., Fortuny, J.R., Guzmán, S., Macías, C., Bowen, J., García, M.L., Orejas, O., Molins, F., Tvarijonaviciute, A., Cerón, J.J. & Bulbena, A. (2016) Animal Assisted Therapy (AAT) Program As a Useful Adjunct to Conventional Psychosocial Rehabilitation for Patients with Schizophrenia: Results of a Small-scale Randomized Controlled Trial. *Front Psychol [Internet]* 7 Article 631 <https://www.frontiersin.org/articles/10.3389/fpsyg.2016.00631>**

The aim of this study is to assess the effect of an AAT program as an adjunct to a conventional 6-month psychosocial rehabilitation program for people with schizophrenia. At the end of the program, both groups (control and AAT-treatment) showed significant improvements in positive and overall symptomatology, as measured with PANSS, but only the AAT-treatment group showed a significant improvement in negative symptomatology. Cortisol level was significantly reduced after participating in an AAT session.

- **Calcaterra, V., Veggiotti, P., Palestini, C., De Giorgis, V., Raschetti, R., Tumminelli, M., Mencherini, S., Papotti, F., Klersy, C., Albertini, R., Ostuni, S. & Pelizzo, G. (2015) Post-operative benefits of animal-assisted therapy in pediatric surgery: a randomised study. PLoS One 10(6):e0125813 [doi: 10.1371/journal.pone.0125813](https://doi.org/10.1371/journal.pone.0125813).**

(Also in Pain category) Conclusion: Animal-assisted therapy facilitated rapid recovery in vigilance and activity after anaesthesia, modified pain perception and induced emotional prefrontal responses. An adaptative cardiovascular response was also present.

- **Charnetski, C.J., Riggers, S. & Brennan, F.X. (2005) Effect of Petting a Dog on Immune System Function. Psychological Reports 95(3 Pt 2) Pp 1087-1091 [DOI:10.2466/PRO.95.7.1087-1091](https://doi.org/10.2466/PRO.95.7.1087-1091)**

Group 1 (n = 19) petted a live dog; Group 2 (n = 17) petted a stuffed dog, while Group 3 (n= 19) simply sat comfortably on a couch. Pre- and posttreatment saliva samples yielded a significant increase in IgA for Group 1 only. The lack of significant correlation between IgA change and the Pet Attitude Scale scores in the dog-petting group indicates that one's attitude toward pets is not relevant to benefit from this interaction.

- **Cole, K.M., Gawlinski, A., Steers, N., & Kotlerman, J. (2007) Animal-Assisted Therapy in Patients Hospitalized With Heart Failure. Am J Crit Care 16(6) Pp 575-585 <https://doi.org/10.4037/ajcc2007.16.6.575>**

Animal-assisted therapy improves cardiopulmonary pressures, neurohormone levels, and anxiety in patients hospitalized with heart failure.

- **Drinkhouse, M., Birmingham, S., Fillman, R. & Jedlicka, H. (2012) Correlation of human and horse heart rates during equine-assisted therapy sessions with at-risk youths: A pilot study. Journal of Student Research 1(3) Pp 22–25 [no DOI](#)**

(Also in At Risk category) This study examines the correlation between horse and human heart rate, an involuntary stress response, which may allow the mechanisms of potential therapeutic benefits to be further understood. Horse and human heart rates were recorded during equine-assisted therapy sessions, compared, and the significance of human and horse heart rate correlation was documented. Results indicate that each incidence of correlating changes in the heart rates appeared to be the result of external stimuli. Findings are discussed and recommendations for future trials with controlled environments are proposed.

- **Granados, A.C. & Agís, I.F. (2011) Why children with special needs feel better with hippotherapy sessions: a conceptual review. Journal of Alternative and Complementary Medicine 17(3) Pp 191–197 [DOI: 10.1089/acm.2009.0229](https://doi.org/10.1089/acm.2009.0229)**

This article is designed from a chronological perspective to provide mental health professionals, educators, and others with current information on how horses can be used as a main tool in an effective and holistic therapy for children with special needs. This is supported by current literature review through a conceptual framework of hippotherapy explained by dynamic system theory along with the theory of neuronal group selection and sensory integration theory. Hippotherapy, by affecting multiple systems such as the sensory, muscular, skeletal, limbic, vestibular, and ocular systems simultaneously, leads to psychologic, social, and educational benefits that will be evidenced in behavioral patterns used in other environments.

- **Guerino, M.R., Briel, A.F. & Araújo, M. (2015) Hippotherapy as a treatment for socialization after sexual abuse and emotional stress. Journal of Physical Therapy Science 27(3) Pp 959–962**
https://www.jstage.jst.go.jp/article/jpts/27/3/27_jpts-2014-605/_pdf

Case Study, two women - The activities were structured to stimulate coordination, proprioception, the vestibular and motor-sensorial systems for the improvement of posture, muscle activity and cognition.

Results: The activities provided during the hippotherapy sessions elicited alterations in postural adjustment resulting in 30% improvement, 80% improvement in coordination in, 50% improvement in corporal balance and in sociability and self-esteem. Conclusion: Hippotherapy proved to be an effective treatment method for coordination, balance and postural correction, and also improved the patients' self-esteem that had suffered serious emotional stress.

- **Hakanson, M., Moller, M., Lindstrom, I. & Mattsson, B. (2009) The Horse as the Healer – A study of riding in patients with back pain. J. Bodyw. Mov. Ther. 13 Pp 43–52 doi:10.1016/j.jbmt.2007.06.002**

(Also in Physiological category) A total of 24 patients, considerably disabled in daily activities by back pain, participated in an Equine-Assisted Therapy (EAT) programme. The patients also had several health problems in addition to their current pain. The programme emphasised the principles of body awareness. The study is aimed at investigating not only whether symptom reduction would be achieved, but also at identifying qualities of EAT that were particularly beneficial for the patients' wellbeing. The study was performed according to action research principles.

The treatment reduced the pain and lessened other symptoms. The EAT also had an influence on the patients' self-image and a positive chain of effects was observed. The consequences were described according to four dimensions; the dimension of body awareness, competence, emotion and environment. The dimensions were interrelated having the simultaneous influence of a transition process and symptom reduction towards health.

- **Heine, B. (1997) Hippotherapy: A multi-system approach to the treatment of neuromuscular disorders. Australia Journal of Physiotherapy 43(2) Pp 145–149**
<https://core.ac.uk/download/pdf/82714458.pdf>

The horse provides a graded, gait specific movement stimulus to the postural muscles of the trunk in a position that facilitates the inhibition of abnormal spastic patterns of movement in the lower limbs. In addition, multiple subsystems are affected even though the effects may not be the primary focus of the physiotherapist's treatment plan. Also, therapy is fun – lack of motivation and burn-out do not exist.

- **Lasa, S.M., Bocanegra, N.M., Alcaide, V.R., Arratibel, M.A.A., Donoso, E.V. & Ferriero, G. (2013) Animal assisted interventions in neurorehabilitation: a review of the most recent literature. Neurologia 30(1) Pp 1–7 <https://doi.org/10.1016/j.nrleng.2013.01.010>**

(also in Physiological category) Objective: The aim of this review is to analyse original papers addressing AAI and neurological diseases and published in the most influential medical journals between 2001 and 2012, and discuss their findings in the light of what may be of interest in the field of neurology.

Discussion: We selected a total of 23 articles on neurorehabilitation in cerebral palsy, pervasive developmental disorders, multiple sclerosis, spinal cord injury, stroke, and mental disorders. The main therapeutic results were improvement on the Gross Motor Function Classification Scale and in upper limb dexterity (cerebral palsy); improvement in social functioning and interaction; reductions in stress, anxiety, and loneliness (pervasive developmental disorders and mental disorders); and decreased spasticity with improved balance (multiple sclerosis, spinal cord injury, stroke).

Conclusion: These interventions, performed with highly specialised animals in very specific neurological populations, deliver an increasing body of scientific evidence suggesting that they are an effective complement to other existing therapies.

- **Malinowski, K., Yee, C., Tevlin, J.M., Birks, E.K., Durando, M.M., Pournajafi-Nazarloo, H., Cavaola, A.A. & McKeever, K.H. (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 Veterinary Science 64 Pp 17–26**
<https://doi.org/10.1016/j.jevs.2018.01.011>

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 HRV, in horses experienced with participation in such activities. We also hypothesized that symptoms of posttraumatic stress disorder (PTSD) would be reduced after five sessions of EAAT in veterans who had previously been diagnosed with PTSD. Specific objectives were as follows: (1) to measure plasma cortisol and oxytocin concentrations and HRV in horses participating in EAAT; and (2) to measure symptoms of PTSD before and after 5 days of EAAT and HR and blood pressure during EAAT in veterans previously diagnosed with PTSD.

In conclusion, 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.

- **Nepps, P., Stewart, C.N. & Bruckno, S.R. (2014) Animal-Assisted Activity: Effects of a Complementary Intervention Program on Psychological and Physiological Variables. Journal of Evidence-Based Complementary & Alternative Medicine 19(3) Pp 211-215 DOI: 10.1177/2156587214533570**

(Also in Physiological category) Subjects of this study were 218 patients hospitalized on the mental health unit of a community hospital with an existing, complementary animal-assisted activity program. Half of the patients participated in a 1-hour session of animal-assisted activity. The other half, who served as a comparison group, participated in a 1-hour stress management program. There were significant decreases in depression, anxiety, pain and pulse after animal-assisted activity program, comparable to those in the more traditional stress management group.

- **Nqwena, Z. & Naidoo, R. (2016) The effect of therapeutic horseback riding on heart rate variability of children with disabilities. African Journal of Disability 5(1) <http://dx.doi.org.10.4102/ajod.v5i1.248>**

The aim of the study was to determine the effects of therapeutic horseback riding (THR) intervention on the HRV of children with disabilities. The objective was to examine if THR intervention improves the HRV of children, hence improving the parasympathetic activity that is associated with a calm and relaxed state. Short-term heart rate regulation is governed by sympathetic and parasympathetic neural activity and therefore HRV examination can be used as a non-invasive estimate of the functioning of the autonomic nervous system (ANS).

Therapeutic horseback riding intervention of six sessions demonstrated a change in HRV of children with disabilities, both increased sympathetic activity and increased parasympathetic activation. However, the changes obtained were not significant to make conclusive measures as to whether sympathetic or parasympathetic activity is predominantly increased after the six sessions. Further research involving more than six sessions of THR is required to yield more significant changes.

- **Pendry, P., Smith, A.N. & Roeter, S.M. (2014) Randomized trial examines effects of equine facilitated learning on adolescents' basal cortisol levels. Human-Animal Interaction Bulletin 2(1) Pp 80–95**
<doi/pdf/10.1079/hai.2014.0003>

Although equine facilitated programs have gained in popularity over the last decade, virtually nothing is known about the causal effects of equine facilitated interventions on human development and well-being. Researchers conducted a randomized trial to determine the effects of an 11-week equine facilitated learning program on the activity of the Hypothalamic Pituitary Adrenal (HPA) axis of fifth through eighth graders through salivary cortisol

levels, pre-program, and at 12 weeks (post-program). Results showed a moderate lowering effect on average daily cortisol levels (AUC) and afternoon cortisol levels of adolescents who participated in an 11-week EFL program, compared to those who were waitlisted. Although associations between lower average daily cortisol/afternoon levels of cortisol and developmental psychopathology and/or adolescent health are by no means clearly understood, several researchers have suggested that lower basal cortisol levels in a relatively normal adolescent sample may constitute a protective influence against the development of psychopathology and health problems in certain populations. As such, this study suggests that EFL may be an effective approach to support positive development in adolescence.

Our work complements findings based on recent randomized trials on EFL on social competence (Hauge et al., 2013; Pendry & Roeter, 2013) and responds to calls in the growing field of Human-Animal Interaction (HAI) and Animal Assisted Intervention (AAI) (Esposito et al., 2010) for evidence-based approaches examining effects on child development.

- **Pendry, P., Carr, A.M. & Vandagriff, J.L. (2018) Adolescents' affective and physiological regulation shape negative behavior during challenging equine assisted learning activities. *Frontiers in Veterinary Science* 5(300) Pp 1–13 doi: [10.3389/fvets.2018.00300](https://doi.org/10.3389/fvets.2018.00300)**

This study examined associations between adolescents' (N = 59; M age = 11.63) diurnal and momentary activity of the Hypothalamic Pituitary Adrenal (HPA) axis as marked by salivary cortisol, and affective and behavioral responses to their first, mounted equine assisted learning (EAL) activity. These findings show that participants' HPA axis activity informs their program experience and behavior. Results suggest that EAL facilitators need to employ strategies to down regulate adolescents' physiological and affective arousal during mounted sessions to prevent and redirect negative behavior.

This study provides evidence that studying the associations between participants' physiological and affective experiences in response to common EAL activities is informing our understanding of participants' individual differences in behavior. In the long term, gaining a better understanding of how the dynamics of participants' emotions and experiences relate to the dynamics of their cortisol levels and their behavior may help to illuminate the pathways by which EAL can get "under the skin" to influence program success.

EAL programming staff have an opportunity to assist adolescents, particularly those at-risk and those experiencing high levels of stress and related symptoms, in downregulating their arousal during mounted program activities to encourage appropriate behaviors, as well as create positive, enjoyable, relaxing experiences. It is important therefore that program staff receive the necessary training and support related to participants' developmental characteristics in addition to their experience with horses in order to not only maintain program safety, but also to promote positive learning opportunities for program participants by highlighting the unique ways in which horses can facilitate these processes.

- **Stasi, M., Amati, D., Costa, C., Resta, D., Senepa, G., Scarafioiti, C., Aimonino, N. & Molaschi, M. (2004) Pet-therapy: A Trial for Institutionalized Frail Elderly Patients *Arch. Gerontol. Geriatr. Suppl.* 9 Pp407–412 doi: [10.1016/j.archger.2004.04.052](https://doi.org/10.1016/j.archger.2004.04.052).**

(Also in Elderly category) Twenty-eight subjects with chronic age-related disabilities living in a nursing home were assigned to a pet-therapy intervention group, consisting of 3-per-week sessions of almost one-hour visit, for 6 weeks with a little cat, and a control group undergoing usual activity programs. The results of our study showed that patients with animal interaction had improved depressive symptoms and a significant decrease in blood pressure values.

- **Wells, D.L. (2009) The State of Research on Human–Animal Relations: Implications for Human Health. *Anthrozoos* 32(2) Pp 169-181 DOI:10.1080/08927936.2019.1569902**

This paper reviews the current state of affairs regarding the relationship between companion animals and human health, focusing on both the physical and psychological health outcomes related to human–animal interactions. A particular emphasis is placed on disorders prevalent in modern- day society, notably cardiovascular disease and depression. The possible mechanisms by which companion animals might be able to enhance human wellbeing and quality of life are discussed, focusing on routes including, amongst others, the provision of companionship, social lubrication, and improvements to physical fitness. The role of the social bonding hormone, oxytocin, in facilitating attachment to our pets and the implications for human health is also discussed. By and large, most studies report a positive association between interactions with animals and the physical and/or psychological health of people, and lend support for the commonly held belief that pets are good for us.

- **Yorke, J., Nugent, W., Strand, E., Bolen, R., New, J. & Davis, C. (2013) Equine assisted therapy and its impact on cortisol levels of children and horses: a pilot study and meta-analysis. *Early Child. Dev. Care* 183(7) Pp 874–894 DOI: 10.1080/03004430.2012.693486**

The hypothesis posed in this study was: After ongoing interaction between traumatised children and therapeutic riding horses, both the children's and the horses' heart and cortisol levels will fluctuate in tandem.

The results indicated that there was a mild to moderate symmetry collectively between the child–horse pairs. This could be random, the result of the short period of time the pairs spent together, or a product of child–horse matching. In the co-relational data analysis, it was determined that only one child's time series of data (child number five) and one of the horses (horse number three) experienced autocorrelation. One would expect to see no reaction in cortisol levels or a minimal reaction between children experiencing PTSD and the horses they ride for only six days which makes the results of this study compelling. A longer intervention and larger sample may lead to the discovery of a stronger effect. This study is useful because it focuses on the interaction between humans and animals, specifically on the synchronicity in the child-horse pairs. Understanding how species respond to each other neurobiologically may provide some insight into how animal-assisted therapy can be useful for children affected by trauma and has promise as an animal welfare measure as well.

SUBSTANCE-USE DISORDER

- **(**) 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 Journals COVID 4(2) Pp 151-169 doi.org/10.3390/covid4020013**

The objective of this study was to determine the effect of a collegiate recovery community (CRC) PIE (Psychotherapy Integrating Horses) program for substance abuse disorder (SUD) compared to that of traditional cognitive behavioural 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, emotional safety scores were significantly different between therapy types, with lower post-therapy scores for PIE. As for physiological measures for PIE participants, respiratory rates and pain rating scores significantly decreased post-therapy and a strong positive correlation 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.

On-campus canine programs, for example, have been utilized successfully to address a wide spectrum of various mental health issues that college students face. The presence of the animal within the therapeutic environment seems to attract participation in the therapy and keeps participants engaged.

- **(**) 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) Pp e2175-80 [no DOI](#)**

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.

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.

- **(**) 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 Complementary Medicine and Therapies 23(1) PP 363 doi.org/10.1186/s12906-023-04191-6**

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. At post-intervention, the intervention group had significant improvements in all these scores in comparison with the control group, as well as their baseline.

- **Friend, M.M., Nicodemus, M.C., Cavinder, C., Lemley, C., Prince, P., Cagle-Holtcamp, K.A. & Swanson, R.M. (2024) Impact of Equine Interaction during Psychotherapy on Anxiety and Depression for**

(Also in SUD) Psychotherapy incorporating equine interaction (PIE) has emerged in other populations as a treatment that decreases cortisol concentrations and improves treatment retention. The present study investigated the impact of 4 weeks of PIE on 10 ($n = 10$) withdrawing patients in a residential substance abuse treatment program. A survey instrument consisting of 17 questions tracking perceived anxiety and depression was given prior to the first week of PIE and at the end of the fourth week of PIE. On weeks 1 and 4 of PIE, heart rate and salivary cortisol measures were taken.

Significant improvements were seen in 24% of the survey questions analyzing nervousness, control of worry, trouble relaxing, and irritability. Tendencies toward improvements in another 17% of measures concerning control of one's life, worry, and fear. Patient heart rates were higher following the fourth week of PIE compared to the first week of PIE, and no significant changes in cortisol concentrations were seen. These results, in addition to therapist observations of limited activity levels in the first week of treatment, indicate potential increased activity and participation through the 4 weeks of PIE. This improvement is in addition to improvements in survey responses associated with severity of depression and anxiety during the withdrawal period, indicating PIE's effective-ness in SUD treatment.

- **Kang, K.D., Jung, T.W., Park, I.H. & Han, D.H. (2018) Effects of Equine-Assisted Activities and Therapies on the Affective Network of Adolescents with Internet Gaming Disorder. J. Altern. Complement. Med. 24 Pp 841–849** <https://doi.org/10.1089/acm.2017.0416>

(Summary only in Word) Fifteen IGD adolescents with insecure attachment issues and 15 healthy comparison adolescents with secure attachment agreed to participate in this study. After 7 days of EAAT, K-ECRS (Korean Experiences in Close Relationships Scale Revised version) 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.

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 Functional Connectivity within the affective network, which was associated with attachment not only in healthy adolescents but also in adolescents with IGD.

- **Machová,K., Juríčková, V., Kasparová, A., Petrová, K., Sládková, B. & Svobodová, 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>

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 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 (and have the added benefit of higher retention rates).

- **Diaz L, Gormley MA, Coleman A, Sepanski A, Corley H, Perez A, Litwin AH. (2022) Equine-assisted services for individuals with substance use disorders: a scoping review. *Substance abuse treatment, prevention, and policy* 17(1) Pp 81 doi.org/10.1186/s13011-022-00506-x**

Quantitative data suggested a potential positive effect of EAS on SUD treatment retention and completion as well as participants' mental health; however, studies were limited by small sample sizes. Qualitative data indicated that in addition to participants developing bonds with the horses and perceiving EAS as welcomed breaks from traditional treatment, they experienced increased self-efficacy, positive emotional affect, and SUD treatment motivation. Additional research is necessary before supporting broad implementation of EAS as adjuncts to SUD treatment.

- **Tsantefski, M., Briggs, L., Griffiths, J. & Tidyman, A. (2017) An open trial of equine-assisted therapy for children exposed to problematic parental substance use. *Health and Social Care in the Community* 25(3) Pp 1247–1256 [doi: 10.1111/hsc.12427](https://doi.org/10.1111/hsc.12427)**

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. 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.

The findings of the present study support the results of previous studies that highlight the positive effects of equine-assisted therapeutic programmes in promoting adaptive psychological and social outcomes for older children and adolescents. Yet, the findings of the current study are equally, if not more illuminating as this is the first study to document the positive benefits of EAT for younger children. The main limitation of the present study is the lack of a randomised control group. A second limitation of the study is that the results are based on parents' perception of their child's behaviours.

- **Wesley, M.C., Minatrea, N.B. and Watson, J.C. (2009) Animal-assisted therapy in the treatment of substance dependence. *Anthrozoös* 22(2) Pp 137–148 <https://doi.org/10.2752/175303709X434167>**

At the time of this study, Mitzi Ann (dog) and her handler had provided approximately 157 hours of service work integrating counseling with AAT. There were 135 individuals in the experimental group (with the therapy dog) and 96 individuals in the control group (without the therapy dog). Choice theory (Glasser 1998) provided the therapeutic philosophy of the cognitive-behavioral therapy used by the therapist for the experimental and control groups. The group therapy sessions had specific treatment goals to change the client's movement along the stages of change (Prochaska, DiClemente and Norcross 1993). The results of the study indicate that, overall, the therapeutic alliance is enhanced with the addition of a therapy dog: the AAT group had a more positive opinion of the therapeutic alliance, as measured using the Helping Alliance Questionnaire (HAQ-II), than the control group. Males, females, pet owners, court ordered clients, and clients seeking treatment for polysubstance, cannabis, and methamphetamine dependence all were more positive about the therapeutic alliance if they were in the experimental group than if they were in the control. This study demonstrates that addiction professionals could increase treatment success by adding this complementary, evidence-based practice.

- **(**)Bachi, K., Terkel, J., & Teichman, M. (2012). Equine-facilitated psychotherapy for at-risk adolescents: The influence on self-image, self-control and trust. *Clinical Child Psychology and Psychiatry* 17(2) 298–312 DOI: [10.1080/10509674.2012.734371](https://doi.org/10.1080/10509674.2012.734371)**

Having all the participants reside in a treatment facility with similar living conditions, reinforces the reliability of the findings. Also, the intervention was a therapeutic process given by an EFP specialist who is both a certified social worker (MSW) and a certified therapeutic riding instructor. This is in contrast with earlier studies on the emotional-mental-social influence of therapeutic riding or horsemanship that were not carried out by certified therapists. Second, the study had both an experimental and a control group. Third, the research was planned as a relatively long-term study (seven months), in comparison with earlier studies in the field. 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.

- **(**) Carlsson, C. (2018) Equine-assisted social work counteracts self-stigmatisation in self-harming adolescents and facilitates a moment of silence. *Journal of Social Work Practice* 32(1) Pp 17–30 DOI: [10.1080/02650533.2016.1274883](https://doi.org/10.1080/02650533.2016.1274883)**

(Also in At Risk Youth) The purpose of this study was to determine whether equine-assisted social work (EASW) could affect self-stigmatisation and thereby counteract false identities in self-harming adolescents. The analysis indicated that the horse had a calming effect on the clients; enabled them to free themselves of their preoccupations; provided real-time, non-verbal and non-judgmental feedback on their emotions; and increased feelings of trust, patience and empathy. The presence of a horse provided a 'moment of silence' for the clients, silencing their inner critic, and made them feel more authentic and better able to regulate their emotions. However, staff could counteract this 'safe' healing by being too focused on goals, making interpretations and lecturing and encouraging clients, thus making clients feel judged anyhow. (Fascinating!) EASW seemed to give clients the opportunity to break free from self-stigmatisation, which seemed to lower the barrier to change.

- **(**) Ewing, C.A., MacDonald, P.M., Taylor, M. & Bowers, M.J. (2007) Equine-Facilitated Learning for Youths with Severe Emotional Disorders: A Quantitative and Qualitative Study. *Child Youth Care Forum* 36 Pp 59–72 DOI [10.1007/s10566-006-9031-x](https://doi.org/10.1007/s10566-006-9031-x)**

The present study quantitatively and qualitatively evaluated the effects of an alternative therapeutic learning method on youths with severe emotional disorders (SED). The youths participated in a nine-week equine-facilitated learning program. The program consisted of nine-week sessions, approximately two hours in length twice a week, for a total of 36 h of participation at the facility. In addition to the EFL experience at the ranch, Horse Power has been incorporated into the classroom as an academic subject. All aspects of classes for the participants (including reading, math, and social studies) have an equine theme. Thus, Horse Power becomes an education enhancer as well as a therapeutic intervention. As part of the EFL process, the youths participate in a nine-week structured program designed to teach skills such as cooperation, trust, and responsibility with the goal of transferring these learned skills into their own lives and everyday interactions. Although the quantitative results did not show statistical significance, qualitative analyses were illuminating. Observational data collected from the special education teacher and therapeutic riding instructor did emphasize positive changes in conduct and social acceptance. During post-testing evaluations at the school, many of the students expressed anger or frustration at the completion of the program. They missed participating in Horse Power.

- **Kern-Godal, A., Brenna, I.H., Arnevik, E.A., & Ravndal, E. (2016) More Than Just a Break from Treatment: How Substance Use Disorder Patients Experience the Stable Environment in Horse-Assisted Therapy. *Substance Abuse: Research and Treatment* 10 Pp 99–108 doi: [10.4137/SART.S40475](https://doi.org/10.4137/SART.S40475)**

The study aims to obtain a better understanding of how patients experience the stable environment and other contextual aspects of HAT as part of their SUD treatment process, and the meanings they attribute to that

experience. Experienced therapists, who were also qualified riding instructors, were responsible for HAT. They provided a structured 12-session therapy program. Apart from the previously reported relationship with the horses, a break from usual treatment best describes and is most connected (directly or indirectly) with key aspects of the participants' therapeutic experiences of HAT. We identified four interrelated aspects (or categories) of "break from usual treatment," namely "change of focus", "activity", "identity" and "motivation."

The stable provided a context where they were able to construct a positive self, namely one that is necessary, is accepted, and can cope with challenges and achieve: or more fundamentally, a self that is different from the "patient" receiving treatment for a problem or disease. As such, HAT appears to be more than just a break from treatment as usual.

- **Kern-Godal, A., Brenna, I.H., Kogstad, N., Arnevik, E.A. & Ravndal, E. (2016) Contribution of the patient horse relationship to substance use disorder treatment: Patients' experiences. International Journal of Qualitative Studies on Health and Well-Being 11 Pp 1–12 DOI: [10.3402/qhw.v11.31636](https://doi.org/10.3402/qhw.v11.31636)**

This article explores SUD patients' own experience of their relationship with the horse and their perceptions of its contribution to their therapy. Participants' own descriptions suggest that the horses were facilitators of a positive self-construct and provided important emotional support during treatment. Analysis found relationship with the horse, emotional effect, and mastery to be important and interrelated themes. The findings were interpreted within an attachment theory context.

- **Sudmann, T.T. (2018) Communitas and Friluftsliv: Equine-facilitated activities for drug users. Community Development Journal 53(3) Pp 556–573 doi:[10.1093/cdj/bsy026](https://doi.org/10.1093/cdj/bsy026)**

The idea and practice of *friluftsliv* is an important backdrop for green care. *Friluftsliv* refers to the Scandinavian outdoor life, which is to care for and befriend nature, to walk and ponder, and rest and talk. Most green care farms in Norway have horses, and equine-assisted activities are known to add value to green care for people with addiction and/or mental health problems. Farms facilitate connectedness between place and people, create "place-events", and resemble *friluftsliv* activities. *Friluftsliv* creates a different temporality and rhythm, where nature is cared for and befriended. This article presents and discusses two different approaches to equine assisted activity for drug-users from an inpatient treatment programme, and for guests from a drop-in centre, respectively.

The cases presented in this article are based on the author's experience of assisting guests from a low threshold activity centre, and inpatients from an addiction treatment facility, in equine-facilitated activities at green care farms. The aim of the equine-facilitated activities are to give the participants new bodily and social experiences in an everyday arena, with no hidden agenda of control, assessment or treatment. The farm visits are offered as a possibility for personal growth and learning, and for contemplating another future. Our experiences, as illustrated in the quotes, are in line with what is found in other studies. Horse-farms provide a non-judgmental environment where participants' positive characteristics, personal strengths and abilities can be highlighted and encouraged while they interact with the horses. Our "thrown-togetherness" facilitates interaction with a range of people; e.g. farmers, volunteers, suppliers, farriers or passers-by.

ADHD

- **(**) Kovács, K.E. Balogh, E.B., Lovas, B. Boris, P., Nagy, B.E. (2024) The role of animal-assisted programs in physical health improvement of children and adolescents with special education needs - a systematic review BMC Public Health 24:824 <https://doi.org/10.1186/s12889-024-18326-y>**

Our findings indicate that dogs and horses are animal-assisted programs' most commonly used animals. Additionally, autism, cerebral palsy, and ADHD were found to be overrepresented in these programs.

The principal measures centred on the physiological variables related to the nervous system and motorium-related indicators. The studies were generally of exceptional methodological soundness.

The papers emphasise the positive impact of animal-assisted programs, supporting physiological health. The sympathetic nervous system works in a more efficient way, heart rate, respiratory rate, peripheral oxygen saturation (SpO2), systolic and diastolic blood pressure become slower as a result. Brain activity improves and neurodevelopmental progression can also be experienced.

The other group of variables named as motorium-related indicators focused on children with autism, developmental delay, cerebral palsy, physical disability, ADHD, dyspraxia. The papers highlight the positive impact of the animal-assisted activities, e.g. it improves motoric function and ambulation, gross-motor development and motor proficiency, muscle spasticity and coordination.

- **(**) Ahn, B., Joung, Y.S., Kwon, J.Y., Lee, D.I., Oh, S., Kim, B.U., Cha, J.Y, Kim, J.-H., Lee, J.Y., Shin, H.Y & Seo, Y.S. (2021) Effects of equine-assisted activities on attention and quality of life in children with cerebral palsy in a randomized trial: examining the comorbidity with attention-deficit/hyperactivity disorder. BMC Pediatr 21(135) [doi: 10.1186/s12887-021-02597-0](https://doi.org/10.1186/s12887-021-02597-0)**

The positive effects of the EAA on attention and quality of life were confirmed. Children with CP in the exercise group were more capable to sustain their attention longer. Those with CP and ADHD showed an increase in attention and perceived to have better social skills after receiving 16 weeks of EAA compared to those in the control group.

- **Cuypers K., De Ridder K. & Strandheim A. (2011) The effect of therapeutic horseback riding on 5 children with Attention Deficit Hyperactivity Disorder: a pilot study. The Journal of Alternative and Complementary Medicine 17 (10) Pp 901–908 <https://doi.org/10.1089/acm.2010.0547>**

(Summary only in Word) Investigated the effectiveness of an 8-week therapeutic horseback-riding programme in reducing difficult behaviour, motor performance and health-related quality of life in children diagnosed with attention deficit hyperactivity disorder (ADHD). The results of the present study indicate that therapeutic horseback riding had a positive effect on 5 children with ADHD in several domains of the social role behavior, quality of life, and motor performance. This pilot study constitutes a good scientific prospect for future studies.

ASD

- **Cleary, M., West, S., Thapa, D.K., Hungerford, C., McLean, L., Johnston-Devin, C. & Kornhaber, R. A (2024) Scoping Review of Equine-Assisted Therapies on the Mental Health and Well-Being of Autistic Children and Adolescents: Exploring the Possibilities. *Issues in Mental Health Nursing*. 45(9) Pp 948-60 DOI: [10.1080/01612840.2024.2364236](https://doi.org/10.1080/01612840.2024.2364236)**

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. 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.

- **Collacchi, B., Pinchaud, N., Borgi, M. & Cirulli, F. (2023) Equine-Assisted Activities (EAAs) for Children with Autism Spectrum Disorder (ASD): Positive Effects Revealed Using an Ethological Approach. *Applied Sciences* 13(13) Pp 7417 doi.org/10.3390/app13137417**

Ethological Approach. In this study, we aimed to evaluate the behavior of 19 children with ASD, in comparison with 19 typically developing children (TD), during EAA sessions. We developed an ethogram from the video recordings to assess spatial relationships, social interactions, and communicative behaviors displayed by the child toward the horse, as well as the occurrence of problem behaviors. Results indicate that children's behaviors during EAA sessions are modulated by sex and age, while previous children's experience with EAAs appeared to improve interpersonal distance and horse handling. Results from this study highlight the importance of exploring children's behavioral responses during animal-assisted activities through direct measurements. This may allow linking the quality/strength of the child–horse relationship to the benefits obtained by the child, particularly in the social/communicative domain, a core symptom of ASD.

- **Dawson, S., McCormick, B.P., Tamas, D., Stanojevic, C., Eldridge, L., McIntire, J., Bowen, A. & McKissock, H.B. (2022) Equine-Assisted Therapy with Autism Spectrum Disorder in Serbia and the United States. *Therapeutic recreation journal* 56(1) Pp 17-38 doi:10.18666/TRJ-2022-V56-I1-10387 <https://www.researchgate.net/publication/358810139>**

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 (USA & Serbia) 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. Effect sizes were large in both cultures. In USA cohort, nine out of ten participants exhibited a decrease in negative social behaviors related to ASD for overall scores. The trend line for participants follows a similar trajectory in Serbian research participants as well as the U.S. participants.

- **Kawamura, N., Sakamoto, M. & Machida, K. (2024) Effects and Nursing Considerations for Equine-Assisted Activities and Therapies for Children with Autism Spectrum Disorders: A Literature Review. *People and Animals: The International Journal of Research and Practice* 7(1) Article 9 <https://docs.lib.purdue.edu/paij/vol7/iss1/9>**

This literature review aimed to analyze the effects and nursing challenges associated with equine-assisted activities and therapies (EAATs) for children with autism spectrum disorders (ASD). This study highlights the importance of tailoring therapy to individual needs. Nurses should be aware of the potential benefits of EAATs in improving the overall well-being of children with ASD and should consider collaborating with other health care professionals to provide comprehensive care.

- **Gunnarsson, A.B., Aurin, I.E. & Holmberg, S. (2024) Being in a meaningful context. Nature and animal-assisted activities as perceived by adults with autism. Australian Occupational Therapy Journal 71 Pp 513–526 DOI: [10.1111/1440-1630.12940](https://doi.org/10.1111/1440-1630.12940)**

This clinical study aimed to describe the feasibility of animal-assisted and nature-based activities on a farm as a complementary intervention for young adults with autism and social withdrawal. The main categories revealed a dynamic process based in meaningfulness, comfort and structure in everyday life. The positive experiences of undemanding activities, emotional relationships and non-verbal communication with the horses were prominent and might facilitate the development of social interaction. The intervention's timeframe of 12 weeks was experienced as too short for long-lasting change.

- **Warner, K., Keville, S., Hockley, J. & Ludlow, A. (2023) Experiences of equine assisted therapy for females with autism spectrum disorders. Advances in Autism 9(2) PP 150-64 DOI [10.1108/AIA-10-2021-0040](https://doi.org/10.1108/AIA-10-2021-0040)**

Evidence suggests that clinic-based verbal interventions for ASD have limited efficacy; therefore, alternative therapies, such as equine-assisted therapies (EATs), are gaining recognition. The purpose of this study was to directly explore the experiences of females with an ASD who have undertaken EAT. Three superordinate themes emerged: the difficult experience of the social world, the process of EAT and the emotional impact of horses. Offering emotion-focused therapeutic complementary interventions for females with ASD should be fore fronted to help remediate the impact of difficult and sometimes traumatic earlier experiences in the social world. This requires increased funding for EAT, combined with larger-scale research projects to evaluate this.

- **Xiao, N., Bagayi, V., Yang, D., Huang, X. & Zhong, L. (2024) Effectiveness of animal-assisted activities and therapies for autism spectrum disorder: a systematic review and meta-analysis Frontiers in Veterinary Science 11:1403527 DOI [10.3389/fvets.2024.1403527](https://doi.org/10.3389/fvets.2024.1403527)**

The meta-analysis revealed significant improvements in several core ASD symptoms due to AAAT. There were improvements in social communication, irritability, hyperactivity, and different word usage skills. However, social awareness, social cognition, social mannerisms, social motivation, lethargy, and stereotypical behaviours did not significantly improve.

- **Zoccante L, Sabaini S, Bonatti SM, Rigotti E, Lintas C, Marconi M, Zaffanello M. (2024) Effectiveness of Equine-Assisted Activities and Therapies for Children with Autism Spectrum Disorder: An Update. Children 11(12) Pp 1494 <https://doi.org/10.3390/children11121494>**

This study evaluated the effectiveness of Equine-Assisted Activities and Therapies (EAATs) in 86 children with varying ASD severity levels (levels 1–3). Participants completed 20 weekly sessions of 45 min each, tailored to their individual needs. Significant improvements were observed across the entire cohort in daily living skills, with particularly notable outcomes in children with level 1 ASD (= least severe). While increases in socialisation were noted among children with level 1 ASD, these were not statistically significant.

Conclusions: EAAT fosters improvements in daily living skills, particularly in children with level 1 ASD, and has a positive impact on socialisation. For children with more severe ASD, targeted interventions are required.

- **(**) Winsor, K., Silverstein, J., Theodore, L.A., Naik, A. & Shyman, E. (2022) Assessing the Impact of Animal-Assisted Occupational Therapy on Attention in Preschoolers Human-Animal Interaction Bulletin 13:1 Pp1-13 Downloaded from <https://cabidigitallibrary.org by 2001:8003:d86b:f101:bdd8:d893:9a64:19ea>**

Participants were comprised of 6 male and 6 female students who ranged in age from 3 to 5 years old during the time of participation. (There was heterogeneity in the diagnoses of participants, which is representative of a special needs school population (autism spectrum diagnosis= 4, preschool child with a disability= 3, Down syndrome= 2, Turner syndrome= 1, cerebral palsy= 1, hydrocephalus= 1)). Results demonstrated statistical significance, with the children significantly less off-task (for a table-top activity) on average when a dog was present during instruction

than when a dog was not. This study provides additional research to support the efficacy of AAT with a focus on the preschool population.

- **Dimolareva, M. and Dunn, T.J. (2020) Animal-Assisted interventions for school-aged children with autism spectrum disorder: a meta-analysis. Journal of Autism and Developmental Disorders 51(7) Pp 2436-2449 <https://doi.org/10.1007/s10803-020-04715-w>**

The current meta-analysis assesses the effectiveness of AAls on social interaction, communication and global Autism symptoms. Overall, the findings show AAI offers small improvements in terms of social interaction and communication but no real reduction of global ASD symptoms. Based on the current analysis, there appears to be little evidence that dosage plays a role in the magnitude of AAI effect, however more data are needed to establish this concretely. This study also contributes several recommendations to the field regarding risk of bias reporting, study design, and potential avenues for future enquiry.

- **(**) Gabriels, R.L., Agnew, J.A., Holt, K.D., Shoffner, A., Zhaoxing, P., Ruzzano, S., & Mesibov, G. (2012). Pilot study measuring the effects of therapeutic horseback riding on school-age children and adolescents with autism spectrum disorders. Research in Autism Spectrum Disorders 6(2) Pp 578–588 https://www.researchgate.net/profile/John-Agnew-2/publication/235420679_Pilot_study_measuring_the_effects_of_therapeutic_horseback_riding_on_school-age_children_and_adolescents_with_autism_spectrum_disorder/links/626851e11b747d19c2aa3548/Pilot-study-measuring-the-effects-of-therapeutic-horseback-riding-on-school-age-children-and-adolescents-with-autism-spectrum-disorder.pdf**

All participants received baseline and post-condition assessments in the areas of self-regulation (Irritability, Lethargy, Stereotypic Behavior, and Hyperactivity), adaptive living skills, and motor skills. Participants who completed 10 weeks of THR demonstrated significant improvements on measures of Irritability, Lethargy, Stereotypic Behavior, Hyperactivity, expressive language skills, motor skills, and verbal praxis/motor planning skills. When compared to the pre- and post-assessments of participants from the waitlist control condition, the THR group still showed significant improvements in self-regulation behaviors. The THR-specific change from the baseline to post-assessments suggests that the improvements are related to the THR treatment.

- **(**) Gabriels, R.L., Pan, Z., Dechant, B., Agnew, J.A., Brim, N. & Mesibov, G. (2015) Randomised controlled trial of therapeutic horseback riding in children and adults with autism spectrum disorder. J. America. Acad. Child Adolesc. Psychiatry 54(7) Pp 541–549 DOI: 10.1016/j.jaac.2015.04.007**

This study expands previous equine-assisted intervention research by evaluating the effectiveness of therapeutic horseback riding (THR) on self-regulation, socialization, communication, adaptive, and motor behaviors in children with autism spectrum disorder (ASD).

This is the first large-scale randomized, controlled trial demonstrating efficacy of THR for the ASD population, and findings are consistent with previous equine-assisted intervention studies.

- **(**) McDaniel Peters, B.C. & Wood, W. (2017) Autism and equine assisted interventions: A systematic mapping review. J. Autism. Dev. Disord. 47 Pp 3220–3242 DOI 10.1007/s10803-017-3219-9**

This systematic mapping review mapped current knowledge of equine-assisted interventions for people with autism to help guide future practice and research. Thirty-three studies including children and adolescents with autism, 3 of which confirmed diagnoses, were reviewed. Five types of equine-assisted activities were identified across 25 studies, with reported improvements in behavior, social interaction, and communication. Four types of equine-assisted therapies were identified across 8 studies, with reported improvements in motor control and self-care. Different approaches to therapeutic riding and hippotherapy, the most studied interventions, were evident. While this literature reflected early scientific development, it offered broad proof of concept that equine-assisted

interventions can benefit children and adolescents with autism. Promising outcomes support continued investigation focused on standardization, appropriateness, and efficacy.

- **Bass, M.M., Duchowny, C.A. & Llabre, M.M. (2009) The Effect of Therapeutic Horseback Riding on Social Functioning in Children With Autism. J Autism Dev Disord 39(9) Pp 1261–7 [doi: 10.1007/s10803-009-0734-3](https://doi.org/10.1007/s10803-009-0734-3)**

This study evaluated the effects of twelve weeks of Therapeutic Horseback Riding on social functioning in Children with Autism. Autistic children exposed to Therapeutic Horseback Riding exhibited greater sensory seeking, sensory sensitivity, social motivation, and less inattention, distractibility and sedentary behaviors.

- **Kern, J.K., Fletcher, C.L., Garver, C.R., Mehta, J.A., Grannemann, B.D., Knox, K.R., Richardson, T.A. & Trivedi, M.H. (2011) Prospective trial of equine-assisted activities in autism spectrum disorder. Altern. Ther. Health Med. 17(3) Pp 14–20 [no DOI](#)**

Anecdotal reports and some studies suggest that equine-assisted activities may be beneficial in autism spectrum disorders (ASD). The participants were assessed at four time points during the study: (1) when placed on the waiting list (the waiting period ranged from 3 to 6 months), (2) immediately before the participant began riding, and (3) at 3 months and (4) 6 months after the participant began riding. These results suggest that children with ASD benefit from equine-assisted activities.

- **Llambias, C., Magill-Evans, J., Smith, V. & Warren, S. (2016) Equine-assisted occupational therapy: Increasing Engagement for children with autism spectrum disorder. American Journal of Occupational Therapy 70(6) Pp 1-9 <http://dx.doi.org/10.5014/ajot.2016.020701>**

A multiple-baseline design was used with 7 children with ASD ages 4–8 yr to assess the effect of including a horse in occupational therapy intervention on task engagement. The children showed improvements in engagement. Including horses in occupational therapy sessions may be a valuable addition to conventional treatments to increase task engagement of children with ASD.

- **Mapes, A.R. & Rosén, L.A. (2016) Equine-assisted therapy for children with autism spectrum disorder: A comprehensive literature review. Review Journal of Autism and Developmental Disorders 3(4) Pp 377–386 [DOI 10.1007/s40489-016-0090-0](https://doi.org/10.1007/s40489-016-0090-0)**

This literature review examines the usefulness of the approach for children diagnosed with ASD. The goal of the search strategy used was to include relevant scientific articles published examining EAT for children diagnosed with ASD. Of the 12 studies examined, 11 researchers demonstrated efficacy for increased physical and social functioning, communication, sensory sensitivity, sensory motivation, self-regulation, adaptive skills, motor skills, improved volition, as well as decreased aberrant behavior and severity of symptoms. The majority of the research documented improvements in functioning; however, these conclusions were qualified by numerous factors that limit the interpretation of the results.

- **Memishevijk, H., & Hodzhikj, S. (2010) The effects of equine-assisted therapy in improving the psycho-social functioning of children with autism. Journal of Special Education and Rehabilitation 11(3-4) Pp 57–67 [no DOI](#)**

The goal of the present study was to examine the effects of short-term equine-assisted therapy as a complementary therapy modality for children with autism spectrum disorders (ASD). There were four children in the study, two boys and two girls from ages 8 to 10 years. The equine-assisted therapy sessions took place once a week for a period of 10 weeks. The results of the study revealed positive effects the therapy had in two of the four children as measured by the Autism Treatment Evaluation Checklists (ATEC). The improvement was reported in the domains of speech, socialization, sensory/cognitive awareness and health/behavior. (OT & psychotherapists).

- **O'Haire, M. E. (2017) Research on animal-assisted intervention and autism spectrum disorder: 2012-2015. *Appl Dev Sci.* 21(3) Pp 200–216 [doi:10.1080/10888691.2016.1243988](https://doi.org/10.1080/10888691.2016.1243988)**

A systematic literature review was conducted to collate and synthesize all empirical research on animal-assisted intervention (AAI) for autism published from 2012 to 2015. Findings from 28 included studies revealed that AAI programs generally include one animal per participant with a total contact time of approximately 10 hours over the course of 8 to 12 weeks. Research methodology is diverse and though limited in many cases, has improved over the last few years. The most commonly reported outcome was increased social interaction, which was unanimously significant across 22 studies. The need for further research is highlighted, calling for a focus on refining AAI techniques, identifying optimal circumstances for positive change as well as individuals who may not benefit, and independent replication of high-quality studies to move AAI from an enrichment activity to an evidence-based practice for autism.

- **O'Haire, M.E. (2013) Animal-assisted intervention for autism spectrum disorder: a systematic literature review. *J. Autism Dev. Disord.* 43 Pp 1606–1622 DOI 10.1007/s10803-012-1707-5**

This systematic review provides the first comprehensive overview of empirical research on AAI for ASD. Research has found evidence of increased social interaction and communication as well as reduced problem behaviors, autistic severity, and stress in children with ASD.

- **Priyanka, M.B. (2018) Effectiveness of animal assisted therapy on children and adolescents with autism. *Int J Res Soc Sci.* 8(2) Pp 2249-2496 https://www.ijmra.us/project%20doc/2018/IJRSS_FEBRUARY2018/IJMRA-12385.pdf**

Question: Does inclusion of Animal Assisted Therapy effect communication, social and motor skills in a child and adolescent with Autism? As an intervention technique, a qualitative approach was applied to establish the subjective experiences and changes gained by six participants in the study. Individual interactions with the therapy dog are then initiated and goals are set for each child. For example, a child with sensory and motor difficulties is made to brush and gently pat the dog.

The results indicate an improvement in the area of social and communication skills, amongst all the children and adolescents. Other benefits such as being calm and relaxed was observed during the therapy sessions. Hence, it can be suggested that future studies focus on individual skill enhancement and flexibility in the number of sessions conducted.

- **Sams, N.J., Fortney, E.V. & Willenbring, S. (2006) Occupational therapy incorporating animals for children with autism: a pilot investigation. *Am J Occup Ther* 60(3) Pp 268–274 [no DOI](#)**

This investigation compared language use and social interaction in children with autism receiving two forms of occupational therapy: occupational therapy using standard techniques, and occupational therapy incorporating animals. Results suggest that the children demonstrated significantly greater use of language and significantly greater social interaction in sessions incorporating animals when compared to sessions using exclusively standard occupational therapy techniques.

- **Tan, V.X.-L. & Simmonds, J.G. (2018) Equine-assisted interventions for psychosocial functioning in children and adolescents with autism spectrum disorder: A literature review. *Review Journal of Autism and Developmental Disorders* 6(3) Pp 325-37 <https://doi.org/10.1007/s40489-018-0143-7>**

This literature review presents an overview of the current research on psychosocial outcomes of EAAT for children and adolescents with ASD. Sixteen studies published in peer reviewed journals between 2007 and 2017 were selected for inclusion. The research reports outcomes which include improvements in multiple areas of functioning relating to core features of ASD, such as greater social interaction and decreased problematic behaviors. EAAT may be relevant and powerful for client populations where there has been limited success with traditional clinic- or room-based forms of treatment.

- **Taylor, R. R., Kielhofner, G., Smith, C., Butler, S., Cahill, S. M., Ciukaj, M. D. & Gehman, M. (2009) Volitional change in children with autism: A single-case design study of the impact of hippotherapy on motivation. *Occupational Therapy in Mental Health* 25(2) 192–200 DOI: [10.1080/01642120902859287](https://doi.org/10.1080/01642120902859287)**

The many impairments that characterize autism also have the potential to affect a child's volition, defined by the Model of Human Occupation as a child's interests, self-efficacy, and motivation to engage in new activities. The objective of this study was to determine the effects of a 16-week hippotherapy program on the volition of three children with autism. The study provides preliminary evidence that improved volition may be an important and under-recognized benefit of hippotherapy for children with autism.

- **Trzmiel, T., Purandare, B., Michalak, M., Zasadzka, E. & Pawlaczyk, M. (2019) Equine assisted activities and therapies in children with autism spectrum disorder: A systematic review and a meta-analysis. *Complementary Therapies in Medicine* 42 Pp 104–113 doi.org/10.1016/j.ctim.2018.11.004**

A review of the literature and a meta-analysis were conducted. The interaction between psychosocial functioning and EAAT was investigated in most studies. Improvement was reported in the following domains: socialization, engagement, maladaptive behaviors, and shorter reaction time in problem-solving situations after EAAT. The meta-analysis revealed no statistically significant differences for the investigated effects. Despite the need for further, more standardized research, the results of the studies included in this review allow us to conclude that EAAT may be a useful form of therapy in children with ASD.

DEMENTIA

- **Fields, B. Bruemmer, J. Gloeckner, G. & Wood, W. (2018) Influence of an Equine-Assisted Activities Program on Dementia-Specific Quality of Life. *Am. J. Alzheimer's Dis. Other Dement.* 33(5) PP 309–317 DOI: [10.1177/1533317518772052](https://doi.org/10.1177/1533317518772052)**

This study investigated associations between 9 different activity situations—one an equine-assisted activities program (EAAP)—and positive, negative, and neutral behavioral indicators of quality of life (QoL) in 6 residents with dementia who expressed an interest in horses. Direct observational data were collected for 4 hours twice weekly over 8 weeks. More positive patterns of time use and emotional well-being were found in EAAP compared to other activity situations. Further, EAAP was the only activity situation associated with all positive QoL indicators. These findings add to our understanding the importance of providing meaningful activities that promote use of abilities and provide environmental support, for enhancing QoL, especially for institutionalized people with dementia.

- **Sebalj, M., Lakhani, A., Grindrod, A. & Stuckey, R. (2024) Equine-assisted services for people living with dementia. *Alzheimer's Research & Therapy* 16:76 <https://doi.org/10.1186/s13195-024-01453-4>**

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. All included studies found a favourable impact of participating in equine-assisted services. Studies confirmed that participating in equine-assisted services had positive effects on social, emotional, and behavioural outcomes for people living with dementia, as well as improved physical health. Equine-assisted services also elicited an improvement in balance and functional mobility post-intervention compared to pre-intervention, and a reduction in behavioural problems and disruptive behaviours compared to a comparison group participating in regular adult day service activities. From the perspective of providers and carers, equine-assisted interventions contributed to positive QoL outcomes by improving well-being, functional abilities, social participation and relations, and communication of participants with dementia. Moreover, providers found the Equine-Assisted Activities Program to be safe and acceptable for people living with dementia. Conclusion: Findings from this review indicate that equine-assisted services show promise in improving neuropsychiatric symptoms of dementia and the QoL indicators of emotional, social and physical wellbeing.

- **Chang, S.J., Lee, J., An, H., Hong, W.-H. & Lee, J.Y. (2021) Animal-Assisted Therapy as an Intervention for Older Adults: A Systematic Review and Meta-Analysis to Guide Evidence-Based Practice 18(1) Pp 60–67 <https://doi.org/10.1111/wvn.12484>**

This review provides evidence for AAT as an intervention in the physiological, psychosocial, cognitive, and behavioral domains of older adults. When planning interventions for older adults, nurses should consider intended health outcomes, appropriate therapeutic animals, and the consequent intervention contents.

- **Franklin, M.A, Parnell, T., Versi, N. & Pope, R. (2022) Animal Assisted Therapy for Older Adults in Aged Care Facilities: A Rapid Review. *Internet Journal of Allied Health Sciences and Practice* 20(1) Article 14 DOI: [10.46743/1540-580X/2022.2052](https://doi.org/10.46743/1540-580X/2022.2052)**

The aim of this rapid review was to synthesise existing research evidence to determine the approaches that AAT should take to enhance outcomes for older adults living in residential care. AAT involving dogs was typically associated with positive outcomes for older adults living in residential care; however, some features of AAT were associated with better outcomes. To enhance outcomes, it is recommended that AAT be implemented in a group setting, include physical interaction or combined physical interaction, and walking, and be conducted by trained facilitators.

- **(**) Barak, Y., Savorai, O., Mavashev, S. & Beni, A. (2001) Animal-assisted therapy for elderly schizophrenic patients: A one-year controlled trial. American Journal of Geriatric Psychiatry 9 439–442**
[doi: 10.1176/appi.ajgp.9.4.439](https://doi.org/10.1176/appi.ajgp.9.4.439).

The present study demonstrates a significantly positive effect of AAT for elderly schizophrenic patients in long-term settings. The major effect noted was in the domain of social functioning. This effect was apparent by 6 months of treatment and held true by the end of the study, at 12 months. This is, to the best of our knowledge, the first controlled study of AAT in elderly schizophrenic patients. (Assuming it is Support – Treatment encouraged mobility, interpersonal contact, and communication and reinforced activities of daily living (ADLs), including personal hygiene and independent self-care, through the use of cats and dogs as “modelling companions”.)

- **Ambrosi, C. Zaiontz, C. Peragine, G. Sarchi, S & Bona, F. (2019) Randomized controlled study on the effectiveness of animal-assisted therapy on depression, anxiety, and illness perception in institutionalized elderly. Psychogeriatrics 19 Pp55-64** [doi:10.1111/psyg.12367](https://doi.org/10.1111/psyg.12367)

(Also in Pain Category) The aim of this study was to verify dog-assisted therapy’s effectiveness on depression and anxiety in institutionalized elderly. Baseline results were compared with post-treatment results, and the results of the treatment group were compared with those of the control group.

The approach used in this study emphasized patients’ active participation in the therapeutic process. The synergetic relationship among the clinical team promoted cohesiveness and helped facilitate patients’ spontaneous behaviour that emerged during therapy. The participants in this study had an increasing willingness to engage in DAT as well as positive emotional responses towards their encounters with the dogs, as overwhelmingly reported in the satisfaction questionnaires. Based on a significant and very large decline in Geriatric Depression Scale (GDS-15) scores after treatment, our results demonstrate the effectiveness of DAT in reducing depressive symptoms. The reduction in the perception of physical pain, although not sizeable, also merits further study in light of the correlation between pain and depression in institutionalized elderly.

- **Banks, M.R. & Banks, W.A. (2005) The effects of group and individual animal-assisted therapy on loneliness in residents of long-term care facilities. Anthrozoös, 18(4) Pp396–408**
<https://doi.org/10.2752/089279305785593983>

In this study, we determined the relative contribution of socialization (human–human bonding) and human–animal bonding as mechanisms by which AAT reduces loneliness. AAT was more effective in improving loneliness in residents of long-term care facilities (LTCFs) when given individually than in a group situation. Therefore, the main effect of AAT was not mediated by socialization, but by the human-animal bond.

- **Churchill, M., Safaoui, J., McCabe, B.W., & Baun, M.M. (1999) Using a Therapy Dog to Alleviate the Agitation and Desocialization of People with Alzheimer’s Disease. Journal of Psychosocial and Mental Health Services 37(4) Pp 16-22** [no DOI](#)

The purpose of this study was to examine the effects of a therapy dog on agitation and socialization in persons with Alzheimer’s Disease (AD) or related disorders who display behaviours consistent with sundown syndrome. The presence of a therapy dog improved socialization and decreased agitation in persons with AD or a related disorder during sundown hours. These changes, however, were found to be unrelated to the severity of dementia. The results of this study indicate that the hours surrounding sundown may be a beneficial intervention for affected individuals independent of the severity of the dementia.

- **Dabelko-Schoeny, H., Phillips, G., Darrough, E., DeAnna, S., Jarden, M., Johnson, D. & Lorch, G. (2014) Equine assisted intervention for people with dementia. *Anthrozoos* 27(1) Pp 141–155 DOI: [10.2752/175303714X13837396326611](https://doi.org/10.2752/175303714X13837396326611)**

The purpose of this exploratory study was to determine the feasibility and effectiveness of using guided interactions with horses as a nonpharmaceutical intervention to improve the physiological and behavioral states of persons with dementia.

Equine-assisted interventions are feasible and possibly beneficial for adults with Alzheimer’s disease or a related dementia disorder, such as those enrolled in adult day health programs. Future studies should utilize multiple methods of assessing impact and include process measures to delineate which specific activities seem to provide the most benefit.

- **Edwards, N.E., Beck, A.M. & Lim, E. (2014) Influence of aquariums on resident behaviour and staff satisfaction in dementia units. *Western Journal of Nursing Research* 36(10) Pp1309-1322 DOI: [10.1177/0193945914526647](https://doi.org/10.1177/0193945914526647)**

The influence of an aquarium on resident behaviour and staff job satisfaction in three dementia units was examined (71 individuals with dementia and 71 professional staff). Residents’ behaviours improved along four domains: uncooperative, irrational, sleep, and inappropriate behaviours. The staff’s satisfaction score significantly improved. Aquariums are an innovative way for animal-assisted therapy and nature to be introduced to specialized dementia units in long-term care.

- **Filan, S.L. & Llewellyn-Jones, R.H. (2006) Animal-assisted therapy for dementia: a review of the literature. *Int Psychogeriatr* 18(4) Pp 597–611 doi:[10.1017/S1041610206003322](https://doi.org/10.1017/S1041610206003322)**

Current literature suggests that AAT may ameliorate Behavioural & Psychological Symptoms of Dementia (BPSD), but the duration of the beneficial effect has not been explored. The relative benefits of “resident” versus “visiting” pet dogs are unclear and are confounded by the positive effect of pet interaction on staff or caregivers. Further research on the potential benefits of AAT is recommended.

- **Haughie, E., Milne, D., & Elliott, V. (1992) An evaluation of companion pets with elderly psychiatric patients. *Behav Psychother* 20 Pp 367–372 DOI: [10.1017/S0141347300017511](https://doi.org/10.1017/S0141347300017511)**

The main aim of this study was to evaluate pet therapy in terms of increased interaction with two groups of elderly psychiatric patients. Each group of patients was observed by an independent observer, and further rated by the ward nurses on a scale which recorded change in their behaviour over the three conditions: baseline, dog intervention and dog intervention with photographic intervention. The total time of observing was four weeks. The results support other studies in indicating that there is a significant improvement in the level of social interaction when the dog was introduced to both groups of patients. This shows that in comparison to the introduction of the photographic stimulus, the presence of the companion pet can increase social interaction among the patients themselves and the patients and the staff.

- **Hilliere, C., Collado-Mateo, D., Villafaina, S., Duque-Fonseca, P. & Parraça, J. A. (2018) Benefits of hippotherapy and horse-riding simulation exercise on healthy older adults: A systematic review. *Sports Medicine* 10(10) Pp 1062-72 doi.org/10.1016/j.pmrj.2018.03.019**

(Summary only in Word) Results indicate that hippotherapy might improve balance, mobility, gait ability, and muscle strength, as well as could induce hormonal and cerebral activity changes in healthy older adults. Benefits of horse-riding simulation could be limited to physical fitness and muscular activity.

- **Menna, L.F., Santaniello, A., Gerardi, F., Di Maggio, A., Milan, G. (2016) Evaluation of the efficacy of animal-assisted therapy based on the reality orientation therapy protocol in Alzheimer's disease patients: a pilot study. Psychogeriatrics 16(4) Pp 240-246 doi: [10.1111/psyg.12145](https://doi.org/10.1111/psyg.12145) <https://core.ac.uk/reader/55141710>**

The aim of this study was to evaluate the efficacy of animal-assisted therapy (AAT) in elderly patients affected by Alzheimer's disease based on the formal reality orientation therapy (ROT) protocol. Pet therapy interventions based on the formal ROT protocol were effective and, compared to the ROT, provided encouraging and statistically significant results.

- **Perkins, J., Bartlett, H., Travers, C., & Rand, J. (2008). Dog-assisted therapy for older people with dementia: a review. Australas J Ageing 27(4) Pp 177–182 DOI: [10.1111/j.1741-6612.2008.00317](https://doi.org/10.1111/j.1741-6612.2008.00317)**

Nine studies were identified for inclusion and although the methodological variability of studies makes it difficult to draw firm conclusions, research suggests that dog therapy is beneficial for people with dementia. The most frequently reported findings were an increase in social behaviour and a decrease in agitated behaviour during dog contact. Improvement in social behaviour was found to be unrelated to the severity of dementia.

- **Stasi, M., Amati, D., Costa, C., Resta, D., Senepa, G., Scarafioiti, C., Aimonino, N. & Molaschi, M. (2004) Pet-therapy: A Trial for Institutionalized Frail Elderly Patients Arch. Gerontol. Geriatr. Suppl. 9 Pp407–412 doi: [10.1016/j.archger.2004.04.052](https://doi.org/10.1016/j.archger.2004.04.052)**

(Also in Elderly category) Twenty-eight subjects with chronic age-related disabilities living in a nursing home were assigned to a pet-therapy intervention group, consisting of 3-per-week sessions of almost one-hour visit, for 6 weeks with a little cat, and a control group undergoing usual activity programs. The results of our study showed that patients with animal interaction had improved depressive symptoms and a significant decrease in blood pressure values.

- **Virues-Ortega, J., Pastor-Barriuso, R., Castellote, J.M., Poblacion, A. & de Pedro-Cuesta, J. (2012) Effect of Animal-Assisted Therapy on the Psychological & Functional Status of Elderly Populations & Patients with Psychiatric Disorders: A Meta-Analysis. Health Psychology Review 6(2) Pp197-221 DOI: [10.1080/17437199.2010.534965](https://doi.org/10.1080/17437199.2010.534965)**

Animal-assisted therapy (AAT) may affect health via an increase in perceived social support and social interaction. A meta-analysis was conducted to determine its effects on selected populations with poor social functioning. As hypothesised, AAT improved social functioning (pooled effect size 1.06, n=275). Moderate effects were found for depression, anxiety and behavioural disturbances. Effects on social functioning and depression were larger in individuals with psychiatric conditions while behavioural disturbances were reduced in patients with dementia.

- **Wehofer, L., Goodson, N. & Shurtleff, T. L. (2013) Equine assisted activities and therapies: A case study of an older adult. Physical & Occupational Therapy in Geriatrics 31(1) Pp 71–87 DOI: [10.3109/02703181.2013.766916](https://doi.org/10.3109/02703181.2013.766916)**

Falls are the leading cause of injuries and deaths in adults over the age of 65. The purpose of this case study is to explore the use of Equine Assisted Activities and Therapies (EAAT) to improve the mechanisms of balance, postural sway, fear of falling (FOF), and participation in older adults (OA). A 76-year-old woman completed 10 Adaptive riding (AR) sessions over a six-week period, led by a Level II therapist (COTA/L and PATH certified riding instructor). Results indicated improved static standing balance, postural stability, and greater dynamic head and trunk control. Additionally, the participant expressed decreased FOF, decreased back pain, the ability to recover self after a fall, and an increase in activity participation as indicated in the ACS (Activity Card Sort).

- **Wood, W., Fields, B., Rose, M. & McLure, M. (2017) Animal-Assisted Therapies and Dementia: A Systematic Mapping Review Using the Lived Environment Life Quality (LELQ) Model. American Journal of OT 71(5) DOI: [10.5014/ajot.2017.027219](https://doi.org/10.5014/ajot.2017.027219)**

The findings offer proof of the concept that canine-assisted therapies are feasible and can elicit positive quality-of-life experiences in institutionalized people with dementia. (These canine-assisted therapies offered occupational opportunities and environmental supports conducive to experiences of relative well-being, occupational engagement, and optimal functioning.)

Collectively, these 10 studies found that canine assisted therapies generally benefited people with dementia who reside in nursing homes, assisted living facilities, and other institutional residential facilities. Accordingly, their mapping onto the LELQ Model emphasized positive statistically significant findings and possibly clinically significant findings.

- **Yakimicki et al., Edwards, N.E, Richards, E. & Beck, A.M. (2019) Animal-Assisted Intervention and Dementia: A Systematic Review. Clin Nurs Res 28(1) Pp9-29**
[doi: 10.1177/1054773818756987](https://doi.org/10.1177/1054773818756987)

This review discusses the relationship between animal-assisted interventions (AAI) and behavioral and psychological symptoms of dementia (BPSD). A total of 32 studies were included in the final review. Variation was noted in study designs and in study setting. Twenty-seven of 32 studies used dogs as the intervention. Agitation/aggression showed a significant decrease in nine of 15 studies. Eleven of 12 studies demonstrated increased social interaction with AAI. Mood had mixed results in nine studies. Quality of life was increased in three of four studies. Resident activity and nutritional intake were each increased in two studies. Animal assisted activities/interventions showed a strong positive effect on social behaviors, physical activity, and dietary intake in dementia patients and a positive effect on agitation/aggression and quality of life.

- **Zafra-Tanaka JH, Pacheco-Barrios K, Tellez WA, Taype-Rondan A. (2019) Effects of dog-assisted therapy in adults with dementia: A systematic review and meta-analysis. BMC psychiatry 19 Pp 1-10**
doi.org/10.1186/s12888-018-2009-z

Thus, we aim to evaluate the effects of DAT on this population and to assess the certainty of the evidence of the RCTs estimates. RCTs evidence of very low certainty suggests that, in adults with dementia, DAT has no effect in daily life activities, depression, agitation, quality of life, (I really don't believe this!!!! Have you seen dementia patients eye light up when an animal comes in the room???) and cognitive impairment, although one small study found an apparent beneficial effect in apathy. More well-designed and correctly reported studies are needed in order to provide a conclusion.

DOMESTIC VIOLENCE

- **Hemingway, A. & Sullivan, K. (2021) Reducing the Incidence of Domestic Violence: An Observational Study of an Equine -Assisted Intervention. Family Process 61(2) Pp 549-570 DOI: [10.1111/famp.12768](https://doi.org/10.1111/famp.12768)**

This paper presents 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 (TF) program. Referrals to this intervention are normally for those families for whom talk-based interventions such as parenting, or education-based interventions are not working. This study would suggest that even in this group the intervention under study (AAI) may be having a positive impact in comparison with other types of support offered through the TF program.

PAIN MANAGEMENT

- **Zhang, Y., Yan, F., Li, S., Wang, Y. & Ma, Y. (2021) Effectiveness of animal-assisted therapy on pain in children: A systematic review and meta-analysis. International journal of nursing sciences 8(1) Pp30-7**
doi.org/10.1016/j.ijnss.2020.12.009

Little is known about its effects on pain in children, and this study aims to systematically evaluate the effects of AAT on pain in children. The evaluation results of this system showed that AAT could reduce children's pain. AAT could also reduce children's the degree of behavioral distress to some extent, and influence the respiratory rate, heart rate, diastolic blood pressure, oxygen saturation and cerebral oxygenation in children, but could not significantly improve the anxiety level of children and their parents.

The results of this study showed that AAT did not significantly reduce the anxiety level of both in children and their parents. (Contrary to Vincent et al 2020). On the one hand, the short intervention duration couldn't establish stable effect, thus may not indicate significantly statistical result; on the other hand, the baseline level of anxiety in the AAT group was lower than that in the control group, which may reduce the potential ability to identify the change of anxiety. Qualitative research results also found that AAT can reduce the behavioral distress degree of children to a certain extent, so that children can get comfort and satisfaction, which is consistent with the research results of Hansen et al (1999).

- **(**) Braun, C., Stangler, T., Narveson, J., Pettingell, S. (2009) Animal-assisted therapy as a pain relief intervention for children. Complementary Therapies in Clinical Practice 15(2) Pp 105-109**
https://digitalcommons.csbsju.edu/nursing_pubs/9

Animal-assisted therapy (AAT) is a healing modality involving a patient, an animal therapist, and handler with a goal of achieving a specified therapeutic outcome. Despite the myriad of studies documenting the benefits of AAT, no studies have yet determined the impact of animals on alleviation of pain in children.

Pain reduction was four times greater in those children undergoing AAT as compared to those relaxing quietly for 15 min. The results indicate that being in the intervention group was the single variable consistently associated with pain reduction.

- **(**) Waite, T.C., Hamilton, L. and O'Brien, W. (2018) A meta-analysis of animal assisted interventions targeting pain, anxiety and distress in medical settings. Complementary Therapies in Clinical Practice 33 Pp 49–55** [no DOI](#)

(Summary only in Word) The results of this meta-analysis suggest that AAI can be an effective intervention that can bring about large changes in pain, distress, and anxiety. Further, these large intervention effects were evident in treatment-control group comparisons and in pre-post comparisons.

- **Ambrosi, C. Zaiontz, C. Peragine, G. Sarchi, S & Bona, F. (2019) Randomized controlled study on the effectiveness of animal-assisted therapy on depression, anxiety, and illness perception in institutionalized elderly. Psychogeriatrics 19 Pp 55-64** [doi:10.1111/psyg.12367](https://doi.org/10.1111/psyg.12367)

The aim of this study was to verify dog-assisted therapy's effectiveness on depression and anxiety in institutionalized elderly. Baseline results were compared with post-treatment results, and the results of the treatment group were compared with those of the control group.

Based on a significant and very large decline in Geriatric Depression Scale (GDS-15) scores after treatment, our results demonstrate the effectiveness of DAT in reducing depressive symptoms. The reduction in the perception of physical pain, although not sizeable, also merits further study in light of the correlation between pain and depression in institutionalized elderly.

- Calcaterra, V., Veggiotti, P., Palestini, C., De Giorgis, V., Raschetti, R., Tumminelli, M., Mencherini, S., Papotti, F., Klersy, C., Albertini, R., Ostuni, S. & Pelizzo, G. (2015) Post-operative benefits of animal-assisted therapy in pediatric surgery: a randomised study. *PLoS One* 10(6):e0125813 [doi: 10.1371/journal.pone.0125813](https://doi.org/10.1371/journal.pone.0125813).

Conclusion: Animal-assisted therapy facilitated rapid recovery in vigilance and activity after anaesthesia, modified pain perception and induced emotional prefrontal responses. An adaptative cardiovascular response was also present.

AT RISK YOUTH

- Burgon, H.L. (2011) 'Queen of the world': experiences of 'at-risk' young people participating in equine-assisted learning/therapy. *Journal of Social Work Practice* 25(2) Pp 165-183 [DOI: 10.1080/02650533.2011.561304](https://doi.org/10.1080/02650533.2011.561304)

This paper explores the experiences of seven 'at-risk' young people who participated in a therapeutic horsemanship (TH) programme. Themes related to the risk and resilience literature such as self-confidence, self-esteem, self-efficacy and a sense of mastery, empathy and the opening of positive opportunities are explored in this paper. The participants' words would seem to indicate clearly that they experienced benefits from interacting with horses and participating in TH, which were helpful to them in some way as individuals.

- Burgon, H.L. (2013) Horses, mindfulness and the natural environment: Observations from a qualitative study with at-risk young people participating in therapeutic horsemanship. *International Journal of Psychosocial Rehabilitation* 17(2) Pp 51–67 [no DOI](#)

The area of how being with horses may enable participants to experience benefits from the natural environment together with aspects of mindfulness has received little attention. This paper is drawn from a qualitative, ethnographic, doctoral research study with seven "at-risk" young people aged between 11-21 years participating in a Therapeutic Horsemanship programme in the UK. In addition to similar themes identified above the study found benefits related to the mindfulness and nature therapy literature. These included "being calm" and relaxation, being "in the moment", psychospiritual aspects of "feeling free", and links to theories of "emotion regulation" and "authentic functioning" (Chambers et al. 2009; Heppner and Kernis 2007). The study has clinical implications to the fields of social work and psychotherapy as it suggests that horses may offer a valuable additional intervention for "at-risk" young people who may benefit from alternative therapeutic and learning experiences.

- Cagle-Holtcamp, K., Nicodemus, M.C., Parker, J., Dunlap, M.H. (2019) Does Equine Assisted Learning Create Emotionally Safe Learning Environments for At-Risk Youth? *Journal of Youth Development* 14(4) Pp 232-252 [DOI 10.5195/jyd.2019.727](https://doi.org/10.5195/jyd.2019.727)

(Alo in Education Category) The objective of this study was to determine if EAL, with programming centred around equine education, will promote emotional safety and learning in at-risk youth. 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.

- Carlsson, C. (2017) Triads in Equine-Assisted Social Work Enhance Therapeutic Relationships with Self-Harming Adolescents. *Clinical social work journal* 45(4) Pp 320-331 [DOI 10.1007/s10615-016-0613-2](https://doi.org/10.1007/s10615-016-0613-2)

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. It 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.

- **Carlsson, C., Ranta, D.N. & Traeen, B. (2015) Mentalizing and Emotional Labor Facilitate Equine-Assisted Social Work with Self-harming Adolescents. *Child Adolesc Soc Work J* 32 Pp 329–339 DOI [10.1007/s10560-015-0376-6](https://doi.org/10.1007/s10560-015-0376-6)**

This study examines what eases or counteracts the horse's capacity to facilitate relationships perceived by humans to be authentic. The findings show that if the staff gave instructions and advice similar to traditional equestrian sports in combination with viewing the horse as an object, EASW is not facilitated. EASW seems to be facilitated when the horse is perceived as a subject by both staff and clients, provided that the staff gave meaning to the horse's behavior. The staff needed to highlight empathy for the horse when the horse is not able to fulfill its task without adding depth to the client's performance, to avoid raising defense mechanisms. Depending on whether the staff and the clients focus on performance or on emotions, different positive or negative outcomes on communication, self-confidence, self-esteem, and self-image will be likely to emerge.

- **Drinkhouse, M., Birmingham, S., Fillman, R. & Jedlicka, H. (2012) Correlation of human and horse heart rates during equine-assisted therapy sessions with at-risk youths: A pilot study. *Journal of Student Research* 1(3) Pp 22–25 no DOI**

(Also in At Risk category) This study examines the correlation between horse and human heart rate, an involuntary stress response, which may allow the mechanisms of potential therapeutic benefits to be further understood. Horse and human heart rates were recorded during equine-assisted therapy sessions, compared, and the significance of human and horse heart rate correlation was documented. Results indicate that each incidence of correlating changes in the heart rates appeared to be the result of external stimuli. Findings are discussed and recommendations for future trials with controlled environments are proposed.

- **Hoagwood, K.E., Acri, M., Morrissey, M. & Peth-Pierce, R. (2017) Animal-assisted therapies for youth with or at risk for mental health problems: A systematic review. *Applied developmental science* 21(1) Pp 1-13 doi:10.1080/10888691.2015.1134267**

Aim: To systematically review experimental evidence about animal-assisted therapies (AAT) for children or adolescents with or at risk for mental health conditions, we reviewed all experimental AAT studies published between 2000–2015, and compared studies by animal type, intervention, and outcomes. Conclusion: Findings are generally promising for positive effects associated with equine therapies for autism and canine therapies for childhood trauma. The AAT research base is slim; a more focused research agenda is outlined.

- **Jones, M.G., Rice, S.M. & Cotton, S.M. (2019) Incorporating animal assisted therapy in mental health treatments for adolescents: A systematic review of canine assisted psychotherapy. *PLoS ONE* 14(1) <https://doi.org/10.1371/journal.pone.0210761>**

Showed a distinct improvement in the symptomatology of the patients and similar research has shown that patients involved in AAT also frequently report great improvements in self-efficacy, coping, and quality of life.

Seven studies were scrutinised. Intervention characteristics varied, including a range of formats, settings, locations, doses, and facilitators. Information on the role of the canines in sessions was sparse. CAP had a positive impact on primary diagnoses and symptomatology, conferring additional benefits to standard treatments for internalising disorders, posttraumatic stress disorder, and equivalent effects for anxiety, anger and externalising disorders. CAP was associated with positive impacts on secondary factors including increased engagement and socialisation behaviours, and reductions in disruptive behaviours within treatment sessions. Global functioning also improved. Good attendance and retention rates indicated high levels of acceptability. Moderate to high tolerability was also indicated.

- **Kendall, E. & Maujean, A. (2015) Horse play: A brief psychological intervention for disengaged youths. *Journal of Creativity in Mental Health* 10(1) Pp 46–61 DOI: [10.1080/15401383.2014.962720](https://doi.org/10.1080/15401383.2014.962720)**

Although there is public consensus that horses can have psychological benefits, it is an under-researched area and conclusions are largely based on anecdotal data. The little empirical evidence that is available about the efficacy of equine-assisted interventions on psychological outcomes tends to be mixed and is often difficult to interpret due to the lack of rigorous research designs. The purpose of this review was to examine the current state of the literature regarding the psychological effects of equine-assisted interventions, and to make recommendations for future research. Findings from this review suggest that equine-assisted interventions hold much promise, particularly in terms of child/adolescent social and behavioural issues, and perhaps adult affective disorders. However, the current state of the literature does not allow us to definitively conclude that equine-assisted interventions are efficacious. Well-designed randomised controlled trials are greatly needed in this area, as it is an appreciation of the need to standardise and document equine-assisted interventions and outcomes in future research.

- **Kern-Godal, A., Arnevik, E. A., Walderhaug, E. & Ravndal, E. (2015) Substance use disorder treatment retention and completion: a prospective study of horse-assisted therapy (HAT) for young adults. *Addiction Science & Clinical Practice* 10(21) Pp 1-12 DOI [10.1186/s13722-015-0043-4](https://doi.org/10.1186/s13722-015-0043-4)**

Conclusion: The study found a statistically significant association between HAT participation and time in treatment, and between HAT participation and completion of treatment. This association does not infer causality. However, it adds supporting evidence for the development of an innovative therapy, and warrants investment in further research in relation to its inclusion in substance use disorder treatment.

- **Maujean, A., Kendall, E., Lillan, R., Sharp, T. & Pringle, G. (2013) Connecting for health: Playing with horses as a therapeutic tool. *Journal of Community Psychology* 41(4) Pp 515–522 doi.org/10.1002/jcop.21547**

This pilot study examined a brief psychological intervention using horses as a therapeutic tool to improve levels of self-esteem, self-efficacy, and facilitate the development of life skills in a group of disengaged youths. We propose that EFP built on a structured model of natural horsemanship, rather than relying only on unstructured interactions with horses, may demonstrate therapeutic benefit. The use of the PNH approach, which we have selected to underpin this research, can enable the program to simultaneously capitalize on (1) the motivation and engagement that can be derived from horses and the rural environment, (2) transferrable social and interpersonal skills that can be derived from the process of understanding and applying horse psychology (3) psychological growth that can be derived from the process of building on experiences and performance, and (4) a sense of mastery that can be derived from the process of incrementally achieving a structured sequence of training tasks and successfully performing a novel activity.

Five themes emerged from these interviews, namely (1) enjoyment, (2) psychological and social benefits, (3) engagement, (4) transferrable skills, (5) mechanisms of change. The findings of this study indicate that this type of intervention may provide a viable option for youths who are disengaged from school and/or the community and who have not responded to traditional interventions.

- **Saggers, B. & Strachan, J. (2016) Horsing around: Using equine facilitated learning to support the development of social-emotional competence of students at risk of school failure. *Child & Youth Services* 37(3) <https://doi.org/10.1080/0145935X.2015.1072045>**

This article discusses preliminary outcomes of an equine facilitated learning (EFL) program specifically designed to focus on using horses to improve the resilience and social-emotional competency in students perceived as “at risk” of school failure. This qualitative exploratory study used interviews and observations over a six-month period to listen to the voices of the students themselves about their experiences of EFL. Initial findings from the pilot study suggest that EFL programs can be a novel and motivating way to promote resilience training and social-emotional

development of students at risk of failure and, in turn, improve their level of engagement and connection with school environments.

- **Trotter, K.S., Chandler, C.K., Goodwin-Bond, D., & Casey, J. (2008) A comparative study of the efficacy of group equine assisted counseling with at-risk children and adolescents. *Journal of Creativity in Mental Health* 3(3) Pp 254–284 [doi:10.1080/15401380802356880](https://doi.org/10.1080/15401380802356880)**

This study demonstrates the efficacy of Equine Assisted Counseling (EAC) by comparing EAC to classroom-based counseling. (The 12-week EAC treatment plan consisted of group interactions with horses in order to facilitate the prevention and resolution of emotional and behavioral concerns. EAC intervention included the following: traditional talk therapy, group processing, equine-based therapy activities, and complementary adventure-based therapy activities. These techniques were designed to enhance participant self-awareness, to enhance recognition of dysfunctional patterns of behavior, and to foster healthy relationships.) This study demonstrated the effectiveness of Equine Assisted Counseling by comparing it to an existing and empirically supported award-winning school-based counseling intervention called Kids Connection (Rainbow Days Inc., 1998, 2006). When taking into account that there are currently no previously published empirical findings regarding the effects of EAC on internalizing problem behaviors, externalizing problem behaviors, maladaptive and adaptive skills, and its comparison with an empirically supported treatment, the findings in this present study are particularly remarkable. Furthermore, because this study's EAC treatment intervention was structured, it can easily be replicated and can be included as an effective mental health component for school-age students, thus having the potential to impact large numbers of at-risk children and adolescents who might not otherwise respond to more passive types of mental health services.

- **Wilke, K.D., Germain, S. & Theule, J. (2016) Evaluating the Efficacy of Equine Therapy Among At-risk Youth: A Meta-analysis *Anthrozoos* 29(3) Pp 377-393 [DOI: 10.1080/08927936.2016.1189747](https://doi.org/10.1080/08927936.2016.1189747)**

The present meta-analysis examined the efficacy of equine therapy among an at-risk youth population. Seven studies quantitatively assessed the treatment effects following involvement in an equine therapy program. For the sake of simplicity, throughout this manuscript, any reference to an intervention involving a horse has been referred to as equine therapy. Equine therapy geared toward improving mental health and positive development uses an experiential approach to promote therapeutic change (Karol 2007). However, the results indicate that equine therapy is a viable alternative to conventional intervention strategies among at-risk youth.

FIRST NATIONS YOUTH

- **Adams, C., Arratoon, C., Boucher, J., Cartier, G., Chalmers, D., Dell, C.A., Dell, D., Dryka, D., Duncan, R., Dunn, K., Hopkins, C., Longclaws, L., MacKinnon, T., Sauve, E., Spence, S. & Wuttunee, M. (2015) The Helping Horse: How Equine Assisted Learning Contributes to the Wellbeing of First Nations Youth in Treatment for Volatile Substance Misuse. *Human-Animal Interaction Bulletin* 1(1) Pp 52-75 [doi/pdf/10.1079/hai.2015.0005](https://doi.org/10.1079/hai.2015.0005)**

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.

- **Chalmers, D., & Dell, C. (2011). Equine-assisted therapy with First Nations youth in residential treatment for volatile substance misuse: Building an empirical knowledge base. *Native Studies Review* 20(1) Pp 59-87 [no DOI](#)**

Equine-assisted therapy is being incorporated into some programs for First Nations youth in residential treatment for volatile substance misuse (VSM). In light of this ongoing incorporation, a need for contextualised research on EAT has been identified. This focus included, for example, equine-facilitated psychotherapy, equine-facilitated learning, and equine-assisted experiential therapy. The focus on Western forms of knowledge building in the developing EAT field raises a fundamental concern about the exclusion of Aboriginal epistemology and, in particular, its focus on the development of knowledge within and in relation to other. The significance of considering Aboriginal epistemology within the emerging EAT field is demonstrated with two illustrations: researching the experiences of First Nations youth with EAT, and appreciating the cultural significance of the horse to some First Nations. The participatory paradigm is presented as a potential alternative, holistic guide for future approaches to EAT research.

- **Coffin, J. (2019) The Nguudu Barndimanmanha Project-Improving Social and Emotional Wellbeing in Aboriginal Youth Through Equine Assisted Learning. *Frontiers in Public Health* Oct 10(7) Pp278 [doi: 10.3389/fpubh.2019.00278](https://doi.org/10.3389/fpubh.2019.00278)**

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 behaviour, self-regulation, and socialization skills were recorded.

- **Dell, C.A., Chalmers, D., Nora Bresette, N., Swain, S. Rankin, D. & Hopkins, C. (2011) A Healing Space: The Experiences of First Nations and Inuit Youth with Equine-Assisted Learning (EAL). *Child Youth Care Forum* 40 Pp 319-336 Springer US [DOI 10.1007/s10566-011-9140-z](https://doi.org/10.1007/s10566-011-9140-z)**

The Nimkee NupiGawagan Healing Centre (NNHC) in Muncey, ON provides residential treatment to First Nations and Inuit youth who abuse solvents. As a complement to its culture-based programming, in 2008 the centre began offering weekly equine-assisted learning (EAL) curriculum to its clients. K&L's (Keystone Equine Centre in West Lorne, ON and the Lambton Equine Assisted Learning Centre in Brigden, ON) mission is to provide the highest level of equine-assisted learning to participants through maintaining balance with the earth, honouring diversity, and promising to always respect, love, and care for the horses in the program. The K&L curriculum is 12 weeks, offered 1 h per week, and is designed to assist youth with increasing their self-esteem, modifying their behaviour, and healing while having fun.

It was concluded that youths' healing was aided through the availability of a culturally-relevant space; from within an Aboriginal worldview this understanding of space is central to individual and communal well-being. This was conveyed in three key themes that emerged from the data: spiritual exchange, complementary communication, and authentic occurrence.

INMATE PROGRAMS

- **(**) Hemingway, A., Meek, R. & Hill, C.E. (2015) An exploration of an equine facilitated learning intervention with young offenders. Soc. Anim. 23 Pp 544-568**
<https://eprints.bournemouth.ac.uk/22836/3/Hemingway.pdf>

This research reports a qualitative study to explore the behavioural responses to, and reported reflections from Young Offenders undertaking an Equine Facilitated Learning (EFL) Intervention in prison in the UK. Learning was facilitated by an instructor and the participants were taught introductory natural horsemanship skills. It is hoped that this research will provide some initial evidence to contribute to ideas around the nature of learning practical positive skills and knowledge through inter species interactions. Confidence: Most of the students talked about how unconfident they normally were and how they found their confidence grew through undertaking the course. Interestingly the student's responses reflected that they equated angry behaviour with lack of confidence rather than aggression, through their reflections on the course they were able to articulate this. Two former students who had completed the course returned to help future students. They reflected on what this opportunity meant to them interestingly once again reflecting on the influence of the course on their ability to engage with learning and development. Focus – not giving up: Fifteen of the students reflected on how they had developed greater focus and try, they felt that through the nature of the course it helped them not to give up to engage and keep going. Calm assertiveness: All but one of the students described how they had become calmer and more assertive they described how the course helped them to rehearse these skills and how rehearsing them with the horses helped them to want to engage with the course.

- **Bachi K. (2013) Equine-facilitated prison-based programs within the context of prison-based animal programs: State of the science review. Journal of Offender Rehabilitation 52(1) Pp 46-74 DOI: 10.1080/10509674.2012.734371**

There is a deficit of empirical knowledge to guide prison-based animal programs. This article reviews 19 studies of prison-based animal programs and centers on patterns in the literature. It reveals how previous studies are relevant and how they can be applied to the examination of equine-facilitated prison-based interventions.

- **Balluerka N, Muela A, Amiano N, Caldentey MA. (2015) Promoting psychosocial adaptation of youths in residential care through animal-assisted psychotherapy. Child abuse & neglect 50 Pp 193-205**
<http://dx.doi.org/10.1016/j.chiabu.2015.09.004>

The goal of this study was to examine the influence of animal-assisted psychotherapy (AAP) on the psychosocial adaptation of a group of adolescents in residential care who had suffered traumatic childhood experiences and who presented with mental health problems. The youths who underwent the AAP program had higher school adjustment in comparison to their peers who did not receive treatment. Their hyperactive behavior decreased, and they showed better social skills, more leadership, and fewer attention problems. They also showed a more positive attitude toward their teachers in comparison to controls. No differences were observed in other variables associated with clinical symptoms or personal adjustment. These results suggest that AAP can be effective with teenagers who have suffered childhood traumas and who present with problems of psychosocial adaptation. (A dog and nine horses (five adults and four colts) were used as therapy animals. Guided interactions also took place using cats and farm animals such as sheep, goats, chickens, and pigs.)

- **Cushing, J L. & Williams, J.D. (1995) The wild mustang program: A case study in facilitated inmate therapy. *Journal of Offender Rehabilitation* 22(3-4) Pp 95–112 [no DOI](#)**

The perceptions of the staff and inmates were accurate in that actual numbers of disciplinary reports did decrease overall during and after participation in the WMP. Staff and inmate perceptions were correct in that the severity of reports decreased with a reduction in actual numbers of major reports. The Wild Mustang Program in conjunction with substance abuse counseling was associated with a substantial reduction in disciplinary reports. Those inmates who participated in substance abuse counselling and the WMP showed a dramatically decreased incidence of reports overall and the severity of disciplinary reports decreased.

The inmates reported a change in fellow WMP inmate-participants who appeared to have developed an increased ability to handle stressful situations. The local administration said that the inmates who were in the program developed an increase in self-esteem and self-confidence as a result of working with the large animals.

Responsibility for the care of the horses had a big part to play in the success of the program according to several staff members. The WMP "instilled a sense of responsibility" an educator at SNMCF said. The inmates felt responsible for their animals. They not only trained, fed, groomed, and cleaned up after their horses, they also helped the veterinarian give shots, castrate, freeze brand, and care for their animals.

- **Dalke, K. (2008) At the threshold of change: The inmates and wild horses of Canon City, CO. *Reflections, Narratives of professional helping* 14(4) Pp 12–16 [no DOI](#)**

This paper describes the human-animal relationship that develops and transforms both inmates and mustangs, preparing them for life beyond the Canon City, Colorado correctional facility. This narrative examines the WHIP program and identifies learned skills necessary for reincorporation into society.

For inmates who reach a high level of the program, much has been learned. There is compassion for another living being. There is awareness that sometimes there is more than one answer to a problem and patience may be the best choice. Meeting the players prior to and after involvement with the program, one saw a clear transformation.

- **Deaton, C. (2005) Humanizing prisons with animals: A closer look at "cell dogs" and horse programs in correctional institutions. *Journal of Correctional Education* 56(1) Pp 46–62 [no DOI](#)**

The purpose of this article is to raise awareness of selected Animal-Assisted programs in correctional institutions and their reported benefits. (Dog- & Horse-training programs).

- **Jasperson, R.A. (2010) Animal-assisted therapy with female inmates with mental illness: A case example from a pilot program. *Journal of Offender Rehabilitation* 49(6) Pp 417–433 [DOI: 10.1080/10509674.2010.499056](#)**

Clinicians who work in AAI have hypothesized that when humans spend time with other species of animals, it helps in the development of empathy, increases motivation to attend therapy, and increases social support. This article describes a pilot animal-assisted therapy program implemented at Utah State Prison for female inmates struggling with mental illness. Following this description, a clinical case example is used to illustrate the impact of this program on a particular group member.

The form of animal-assisted therapy (AAT) used in this study was a goal-directed intervention in which an animal is a primary element of the treatment process. It is an interaction between patients and a trained animal and human handler, with a therapeutic objective.

The program consisted of eight 1-hour weekly or twice weekly sessions. The group approach was a combination of psycho-education and therapeutic intervention. This group implemented the use of a dog in order to facilitate the educational and therapeutic goals. Group sessions focused on the development of social skills, coping skills, and self-awareness. Group topics included, boundaries, personal safety issue, developing trust, being trustworthy, responsibility, understanding emotions, expressing emotions in a healthy manner, and learning new behaviors.

Anecdotally, the group's facilitator, participants, and their clinicians reported positive outcomes. The group members reported a large decrease in anxiety and depressive symptoms. Reports of direct observations by the mental health professionals working directly with these individuals seemed to favor decreased social isolation and an increased prosocial behaviors. Individual therapist's reports indicated that these inmates seemed more open to addressing therapeutic issues, approached therapy with a more optimistic attitude, and articulated an increase in self-awareness. Nothing negative was reported by inmates or therapists, nor were any observed by the facilitator. During the last session, when asked what they had learned, all participants were able to recall several of the educational topics and tie those discussions into their own lives. Most demonstrated an increase in self-awareness in one or more of the topic areas.

- **Kunz-Lomelin, A., & Nordberg, A. (2019) Assessing the impact of an animal-assisted intervention for jail inmates. *Journal of Offender Rehabilitation* 59(2) Pp 65–80**
<https://doi.org/10.1080/10509674.2019.1697786>

(Summary only in word) Successful completion of the AAI program led to significantly lower symptoms of PTSD, depression, and anxiety.

- **Robinson-Edwards, S., Kewley, S., Riley, L. & Fisher, D. (2019) Examining prisoner experience of an equine assisted psychotherapy. *Therapeutic Communities: The International Journal of Therapeutic Communities* 40(3/4) Pp 111-124 DOI 10.1108/TC-01-2019-0001**

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. Interpretative phenomenological analysis was deemed appropriate; 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. The findings within this paper identify a strong correlation between EAP and positive experiences expressed by participants. 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 paper's intention is to raise awareness of EAP interventions and therapeutic interventions in prisons in England and Wales.

CEREBRAL PALSY/DOWN SYNDROME

- **Champagne, D. & Dugas, C. (2010) Improving gross motor function and postural control with hippotherapy in children with Down syndrome: case reports. *Physiotherapy Theory and Practice* 26(8) Pp 564–571 DOI: 10.3109/09593981003623659**

Describes the impact of an 11-week hippotherapy program on the gross motor functions of two children (respectively 28 and 37 months old) diagnosed with Down syndrome. The results indicate that both children improved on many dimensions of the GMFM. Power spectral analysis of the acceleration signals showed improvement in postural control of either the head or trunk, because the children adopted two different adaptative strategies to perturbation induced by the moving horse.

- **Shurtleff, T. & Engsberg, J. (2012) Long-term effects of hippotherapy on one child with cerebral palsy: a research case study. *British Journal of Occupational Therapy* 75(8) Pp 359–366 DOI: 10.4276/030802212X13433105374279**

Introduction: This case study followed a 6-year-old child with cerebral palsy for an additional 24 weeks after a 12-week pilot study of hippotherapy (HPOT). The results showed a notably improved response to the barrel perturbation after the first 12 weeks. This improvement persisted over the next 24 weeks. After the next 24 weeks,

he also slowed and markedly decreased trunk sway amplitude and head angle, an unforeseen outcome. He also held his head consistently more vertically after 36 weeks of HPOT.

Results: The third measure after 24 more weekly treatments showed no further improvement on the original variables. However, an unanticipated improvement in postural sway was found at the end of 9 months.

- **Wang, G., Ma, R., Qiao, G., Wada, K., Aizawa, Y. & Satoh, T. (2015) The effect of riding as an alternative treatment for children with cerebral palsy: A systematic review and meta-analysis. Integrative Medicine International 1(4) Pp 211–222 DOI: [10.1159/000368408](https://doi.org/10.1159/000368408)**

This study aimed to evaluate the physiological benefits of this alternative therapy for children with cerebral palsy (CP) by means of a systematic review and meta-analysis. This systematic review included all randomized and nonrandomized clinical trials of hippotherapy (HT), therapeutic horse riding (THR), and artificial saddle (AS) for the treatment of children with CP by a systematic search of databases up to November 2012. Conclusions: HT, THR, and AS seem to improve the total score of the gross motor function via improvement of the walking, running, and jumping dimension. However, they are not likely to be of benefit to the symmetry of postural muscle activity.

IMPROVED LEARNING

- **Cagle-Holtcamp, K., Nicodemus, M.C., Parker, J., Dunlap, M.H. (2019) Does Equine Assisted Learning Create Emotionally Safe Learning Environments for At-Risk Youth? Journal of Youth Development 14(4) Pp 232-252 DOI [10.5195/jyd.2019.727](https://doi.org/10.5195/jyd.2019.727)**

The objective of this study was to determine if EAL, with programming centred around equine education, will promote emotional safety and learning in at-risk youth. 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.