Hippotherapy: Equine-related therapies for people with disabilities

An annotated bibliography
Lida Ayoubi & Charlotte Gerling
Contents

Physical disability 2

Psychiatric and psychological disability 18

Socio-emotional disability 25

Multiple disabilities/general studies 33

Human rights perspective 43

Index 47
Hippotherapy: Equine related therapies for people with disabilities

An annotated bibliography
Edited by: Lida Ayoubi & Charlotte Gerling

Published by: Riding for the Disabled Wellington Group
P O Box 50 750
Porirua
New Zealand

Email: wellingtonrda@xtra.co.nz
Website: www.rda.org.nz

Format: Paperback
Publication Date: 7/2012

Format: PDF
Publication Date: 7/2012

July 2012

Published with the kind support of

Wakefields DIGITAL
Passion in Print

Dinniss communications
strategy and implementation
Introduction

The ancient Greeks appreciated the benefits of hippotherapy thousands of years ago. The intuition and nature of horses has not changed over the eons and today they still provide a valuable therapy for the disabled of all ages in many communities around the world.

In researching the published material on the effects of riding for the disabled it quickly became apparent that a annotated bibliography of the international literature was not available. Wellington Riding for the Disabled sought the assistance of Victoria University of Wellington’s VicPlus programme to undertake a comprehensive literature search and review. VicPlus is an award programme that encourages students to undertake voluntary work to help develop leadership skills.

The research work is divided into five categories:

- Physical disabilities which are largely defined as: Impaired range of movement, strength, coordination, muscle tone, posture, gait, hand function, sensation or endurance. e.g. amputation, spinal cord injury, spina bifida, stroke, cerebral palsy, multiple sclerosis, muscular dystrophy, rheumatoid arthritis, traumatic brain injury, autism.
- Psychiatric and psychological disabilities: Mental illness. e.g. bipolar disorder, schizophrenia, depression, anxiety and personality disorders.
- Socio/emotional disabilities: Dysfunctional family life, at risk youth.
- Multiple disabilities and general studies in the area
- Human rights perspectives

Charlotte Gerling and Lida Ayoubi volunteered to undertake the research and have produced this annotated bibliography that provides health professionals and others working with physically and mentally disabled people with an extensive list of internationally available reference materials on which to build their own knowledge.

Charlotte, who was born in Germany, is currently studying for a BSc at Victoria. She has a passion for horse riding and has ridden in many parts of the world from Europe to Mongolia and Ecuador, developing from her experiences, a deep understanding of horses and how they are regarded in different cultures. Working on the bibliography was an enjoyable way for her to explore the subject further.

Lida is currently studying for her PhD in the Faculty of Law at Victoria. Her main field of research encompasses human rights law in general and its interaction with intellectual property rights. She has a research background in disability rights and access to health, education and culture for people with disabilities. Assisting Wellington Riding for the Disabled and advocating for the disabled community’s rights was her incentive for undertaking the project.

We are greatly indebted to the authors for their support in the publication of this valuable work and to our volunteers who work tirelessly for disabled people in our community.

Dr Ann Balcombe
President
Wellington Riding for the Disabled
PHYSICAL DISABILITY


This is a short article explaining what spina bifida is, and the implications for centres using hippotherapy for people with spina bifida.

Baker, L. (1995) Cerebral palsy and therapeutic riding. NARHA Strides 1(2). This short article explains medical considerations for therapeutic riding and reviews relevant literature.


This study evaluates the effects of therapeutic horseback riding on social functioning in children with autism. It hypothesised that participants in the experimental condition (n = 19), compared to those on the waitlist control (n = 15), would demonstrate significant improvement in social functioning following a 12 week horseback riding intervention. Autistic children exposed to therapeutic horseback riding exhibited greater sensory seeking, sensory sensitivity, social motivation, and less inattention, distractability, and sedentary behaviours. The results provide evidence that therapeutic horseback riding may be a viable therapeutic option in treating children with autism spectrum disorders.


Parent interviews were used to determine influences of therapeutic horseback riding (TR) and hippotherapy on children with spastic cerebral palsy. Research on the influence of TR and hippotherapy will serve to inform parents of their choices in therapeutic modalities in regard to children with spastic cerebral palsy. Data were collected in the form of qualitative one-on-one interviews. Two parents with children participating in TR and three parents with children participating in hippotherapy were interviewed. Constant comparison method was used to derive meaning units from the first interview transcript and matched against subsequent interviews. Four themes emerged: (a) physical improvements, (b) developing independence, (c) overcoming fears, and (d) differences in barriers and motivations for TR and hippotherapy. Parents perceived that both TR and hippotherapy positively affected their children’s psychological and physical aspects of wellbeing. The one apparent difference between the barriers for TR vs. hippotherapy was the cost associated with hippotherapy.


The objective of this research was to evaluate the hippotherapy influence on gait training in post-stroke hemiparetic individuals. The study comprised 20 individuals divided into two groups. Group A performed the conventional treatment while group B the conventional treatment along with hippotherapy during 16 weeks. The patients were evaluated by using the Functional Ambulation Category Scale, Fugl-Meyer Scale, only the lower limbs and balance sub items, Berg Balance Scale, and functional assessment of gait (cadence) in the beginning and end of the treatment. Significant improvements were observed in the experimental group including motor impairment in lower limbs (p=0.004), balance, over time (p=0.007) but a significant trend between groups (p=0.056). The gait independence, cadence and speed were not significantly different in both groups (p=0.93, 0.69 and 0.44). The researchers concluded that hippotherapy associated with conventional physical therapy demonstrates a positive influence in gait training, besides bringing the patients’ gait standard closer to normality than the control group.

Improvements in muscle symmetry in children with cerebral palsy after equine-assisted therapy (hippotherapy). The Journal of Alternative and Complementary Medicine, 9(6), 817-825.

Researchers sought to evaluate the effect of hippotherapy (physical therapy utilising the movement of a horse) on muscle activity in children with spastic cerebral palsy using a pre-test/post-test control group at the Therapeutic Riding of Tucson (TROT), Tucson, AZ. The subjects were 15 children ranging from four to 12 years of age diagnosed with spastic cerebral palsy. The children were randomised to either eight minutes of hippotherapy or eight minutes astride a stationary barrel. Remote surface electromyography (EMG) was used to measure muscle activity of the trunk and upper legs during sitting, standing, and walking tasks before and after each intervention. After hippotherapy, significant improvement in symmetry of muscle activity was noted in those muscle groups displaying the highest asymmetry prior to hippotherapy. No significant change was noted after sitting astride a barrel. The researchers concluded that eight minutes of hippotherapy, but not stationary sitting astride a barrel, resulted in improved symmetry in muscle activity in children with spastic cerebral palsy. These results suggest that the movement of the horse rather than passive stretching accounts for the measured improvements.


The purpose of this study was to measure postural changes in children with spastic cerebral palsy after participation in a therapeutic horseback riding programme. Eleven children with moderate to severe spastic cerebral palsy, aged two years four months to nine years six months, were selected for this study and underwent postural assessments according to a repeated measures design. Assessment of posture was performed by a panel of three pediatric physical therapists, using a postural assessment scale designed by the author. A composite score for each test interval was calculated for each child, and a median score was calculated for the entire group at each test interval. Data were analysed using a Friedman test, assuming an alpha level of 0.05. A statistically significant difference was found between the three test intervals with significant improvement occurring during the period of therapeutic riding. Clinical improvements were also noted in muscle tone and balance as evidenced by improved functional skills. These results constitute the first objective measure supporting the efficacy of therapeutic horseback riding on posture in children with cerebral palsy.


The effects of therapeutic horseback riding on balance. Adapted Physical Activity Quarterly, 6(3), 221-229.

This study sought to determine the effects of therapeutic horseback riding on the balance of eight individuals with mental retardation. The subjects were initially tested on four standing balance items and six quadruped balance items. Next, six months passed with no intervention. The intention of this time lapse was to use the subjects as their own control. After this delay, the subjects were tested again using the same procedure as in the initial testing. They were then involved in a six month therapeutic riding programme designed to provide vestibular stimulation in a variety of ways, with the horse’s movement as a base. A third identical testing session occurred at the end of the therapeutic riding programme. The results of the study showed that significant improvement was seen on standing and quadruped balance after the therapeutic riding programme. It is concluded that if programming goals for individuals with mental retardation include improved balance, then therapeutic riding may be beneficial to those goals.


Major electronic databases were searched for articles relating to hippotherapy, MS and balance. Only full length articles published in peer reviewed journals and written in English, or translated into English, were included. Articles were assessed using a modified quality index for descriptive purposes only and did not exclude any study from the review. All studies examined in this review were either case-control or case-series. Collectively all three studies reported improvements in balance. Pre-test and post-test Berg Balance Scale scores in two studies revealed that primary progressive MS demonstrated the greatest amount of change after hippotherapy compared to other subtypes of MS. It was concluded that hippotherapy has a positive effect on balance in persons with MS and has an added benefit of enhancing quality of life. The data is limited and further research will lead to a greater knowledge base and has the potential to increase accessibility for hippotherapy to be used as a rehabilitation modality.


This study employed a repeated-measures design with two pre-tests and two post-tests conducted 10 weeks apart using the Pediatric Evaluation of Disability Inventory (PEDI) and the Gross Motor Function Measure (GMFM) as outcome measures. A convenience sample of 10 children with cerebral palsy participated whose ages were 2.3 to 6.8 years at baseline (mean ±SD 4.1±1.7). Subjects received hippotherapy once weekly for 10 weeks between pre-test two and post-test one. Test scores on the GMFM and PEDI were compared before and after hippotherapy. One-way analysis of variance group mean scores with repeated measures was significant (p <0.05) for all PEDI subscales and all GMFM dimensions except lying/rolling. Post hoc analyses with the Tukey test for honest significant differences on the PEDI and GMFM total measures as well as GMFM crawling/kneeling and PEDI social skills subtests were statistically significant between pre-test two and post-test one. The results of this study suggest that hippotherapy has a positive effect on the functional motor performance of children with cerebral palsy. Hippotherapy appears to be a viable treatment strategy for therapists with experience and training in this form of treatment and a means of improving functional outcomes in children with cerebral palsy, although specific functional skills were not investigated.


This randomised controlled trial examined whether therapeutic horse riding has a clinically significant impact on the physical function, health and quality of life (QoL) of children with cerebral palsy (CP). Ninety-nine children aged four to 12 years with no prior horse riding experience and various levels of impairment (Gross Motor Function Classification System Levels I–III) were randomised to intervention (10 week therapeutic programme; 26 males, 24 females; mean age 7 yr 8 months [SD 2 yr 5 months] or control (usual activities, 27 males, 22 females; mean age 8 yr 2 months [SD 2 yr 6 months]). Pre- and post-measures were completed by 72 families (35 intervention and 37 control). Children’s gross motor function (Gross Motor Function Measure [GMFM]), health status (Child Health Questionnaire [CHQ]) and QoL (CP QoL-Child, KIDSCREEN) were assessed by parents and QoL was assessed by children before and after the 10 week study period. On analysis of covariance, there was no statistically significant difference in GMFM, CP QoL-Child (parent report and child self-report), and CHQ scores (except family cohesion) between the intervention and control group after the 10 week study period, but there was weak evidence of a difference for KIDSCREEN (parent report). This study suggests that therapeutic horse riding does not have a clinically significant impact on children with CP. However, a smaller effect cannot be ruled out and the absence of evidence might be explained by a lack of sensitivity of the instruments since the QoL and health measures have not yet been demonstrated to be sensitive to change for children with CP.


Hippotherapy (Greek *hippos* = horse) is a specialised physiotherapy treatment that makes use of the horse’s unique three-dimensional movement impulses at a walk to facilitate movement responses in patients sitting on the horse’s back (Strauß, 2000). Despite a substantial body of anecdotal and clinical evidence for its benefits, research evidence for hippotherapy is sparse. This questionnaire survey was the first study in a series of investigations exploring the views of physiotherapists and people with cerebral palsy who use hippotherapy. These investigations form the basis from which the authors will recommend outcome measures for individuals with cerebral palsy in a hippotherapy environment. This study aimed to: (a) establish the pattern of hippotherapy practice in Germany and the U.K.; (b) examine the perceived main effects of hippotherapy on people with cerebral palsy in Germany and the U.K.; and (c) investigate how these effects are being measured in both countries. The results highlighted considerable differences in how hippotherapy is practised in the U.K. compared with in Germany. In spite of this, the study revealed agreement among respondents on the overall perceived effects of hippotherapy on individuals with cerebral palsy, namely, the regulation of muscle tone, improvement of postural control and psychological benefits. The results also indicate scant use of outcome measures to evaluate these effects. The impact of these findings is discussed in the light of published research and suggestions for further research are made.


The aim of this mixed-method study was to explore the effects of hippotherapy on people with cerebral palsy and to investigate how these effects are being evaluated. Germany and the UK were chosen as study locations for their differences in history and availability of hippotherapy. A questionnaire survey of physiotherapists practising hippotherapy sought to establish clinicians’ perceptions of the effects of hippotherapy on this user group and to investigate current practices in the evaluation of outcome. It also served to contextualise the study in terms of practice and resources. This was followed up with focus groups to investigate with physiotherapists how hippotherapy outcomes can be evaluated. Focus groups and individual interviews were used to explore the effects of hippotherapy from the perspective of users and parents. The results are remarkable in several ways.

Not only was this the first study to investigate hippotherapy from a user perspective, users and parents discussed a range of issues that went well beyond answering the key questions. Users provided unique and new insights into the effects of hippotherapy, the context in which hippotherapy happens, as well as its effects and the impact of these effects on them in terms of activity, participation and quality of life. Two of the key findings of this study were that hippotherapy is experienced as being more effective than conventional physiotherapy and a difference in effectiveness of hippotherapy in the UK and in Germany. The comprehensive information users shared was triangulated with physiotherapists’ observations expressed in the questionnaire survey and existing literature to establish theory to account for these findings. This resulted in the development of a conceptual framework to explain why hippotherapy provides such an effective opportunity for motor learning, something that had not been attempted before. This was the first study to comprehensively explore the effects of hippotherapy on people with cerebral palsy. Its findings can serve as the basis for further study in this specialist area within physiotherapy.


Although there is now some evidence for specific effects of hippotherapy on people with cerebral palsy, these studies fail to provide a comprehensive picture of the effects of hippotherapy. This was the first qualitative study to explore the hippotherapy experience of people with cerebral palsy from a user perspective. The effects of hippotherapy and their context were of particular interest. Seventeen users aged from four to 63, with or without their parents, participated in focus groups or individual interviews in six centres in Britain and in Germany. The main effects of hippotherapy as identified by users and parents are: normalisation of muscle tone, improved trunk control, improved walking ability, carryover effects of hippotherapy to activities of daily living and increased self-efficacy, confidence and self-esteem. This study provided unique and new insights into the context in which hippotherapy happens, as well as its effects on impairment, activity, participation and quality of life in people with cerebral palsy. The study’s findings are integrated with the existing literature on motor learning and pedagogy to try to explain the complex effects of hippotherapy as reported by users and parents. A conceptual framework that illustrates these effects and their interactions is introduced.

De Villiers, J. (2005)

Therapeutic horseriding to enhance the awareness of the child with fetal alcohol syndrome (Unpublished thesis). University of South Africa, South Africa.

The motivation for this study was to use animal-assisted therapy to the advantage of the child with Fetal Alcohol Syndrome that present with attention deficit/hyperactivity disorder. The purpose of this study was to describe the use of therapeutic horse riding in Gestalt therapy and its influence on the awareness levels of the child with Fetal Alcohol Syndrome who presents with attention deficit/hyperactivity disorder. A quantitative research approach was used. The nature of the study was descriptive. Semi-structured interviews were used to compile information about a single child in therapy and combined with information gathered from the literature to compile guidelines for the counsellor. In this study horse riding was effectively combined with Gestalt play therapy to enhance the awareness levels of the child with Fetal Alcohol Syndrome.

Heart rate response to therapeutic riding in children with cerebral palsy: An exploratory study. 
*Pediatric Physical Therapy, 19*(2), 160-165.

The purpose of this study was to document the heart rate response to therapeutic riding in children with cerebral palsy and mild-to-severe disability. Participants consisted of eight youth riders with cerebral palsy, divided into two groups: ambulatory and wheelchair dependent. The riders received continuous digital heart rate monitoring during 10 weekly 20 minute therapeutic horseback riding sessions. The averaged resting, median and peak heart rate values, as well as the peak percentage heart rate reserve values, were significantly higher in the wheelchair-dependent group. The researchers concluded the youth riders with severe disability (The Gross Motor Function Classification System level IV) who were wheelchair dependent, demonstrated higher heart rate values during therapeutic riding than their ambulatory counterparts. In view of these higher heart rate values, further studies are needed to address the role of monitoring heart rate response during therapeutic riding.


*An Abstract of Kinematic Gait Analysis of Children with Neurological Impairments Pre and Post Hippotherapy Intervention* (Unpublished thesis). University of Toledo, USA.

The purpose of this study was to investigate the effects of a 10 week hippotherapy (HPOT) programme on several temporal – spatial variables of gait as well as range of motion (ROM) at the trunk, pelvis and hip joints in all three planes of motion over the stance phase of the gait cycle. Hippotherapy has been used as a tool by therapists for several decades to address functional limitations in patients with neuromusculoskeletal diagnoses. However, more objective measurements and data supporting HPOT as a therapeutic tool to help improve ambulation are needed. Eleven children (six males, five females; 7.9 ± 2.7 years) with neurological disorders resulting in impairments in ambulation and gross motor control in standing, participated in this study. All subjects were receiving weekly traditional land-based physical or occupational therapy and elected to participate in HPOT for ten weekly sessions instead. Three-dimensional (3-D) gait analyses were performed with each child prior to the first session of HPOT. Data on cadence, velocity, stride length and step width were collected along with data regarding trunk, pelvis, and hip joint ROM. Subjects then participated in ten weekly sessions of HPOT and a second gait analysis was completed for each subject after completion of the sessions. A series of paired t-tests was performed on the temporal – spatial and kinematic data for each segment. Families of pair-wise comparisons were used with the family-wise error rate set at 0.25. Although no statistically significant differences were found from pre to post test for temporal-spatial data, trends in improved cadence, velocity and stride length were seen. Significant improvements in sagittal plane pelvic and hip joint positions at initial contact (IC) and toe off (TO) phases of the gait cycle were found and each demonstrated large effect sizes as determined via Cohen’s d. No differences in trunk ROM were determined, although trends towards more normal values were observed in all three planes at IC and TO. The conclusion was that the group’s improvement in sagittal plane pelvic and hip joint positioning and trends for improvement in trunk position, cadence, velocity and stride length during ambulation may indicate increased postural control during the stance phase of gait after ten sessions of HPOT.

Francis, B.A.A. (2007)


This systematic review identified and analysed the effects of hippotherapy and therapeutic horseback riding (THR) as alternative treatment modalities for children with cerebral palsy (CP), developmental delay (DD) and neurological disorders (ND). Hippotherapy utilises the multidimensional movement of the horse at the walk to challenge the rider. The professional uses the horse’s gait pattern to passively manipulate the patient’s body to enhance mobility, posture and balance. In THR the rider is more active, performing recreational exercises such as riding skills, stretching and catching. Eight papers were reviewed. Of the eight papers three analysed hippotherapy and five analysed THR. Two reviewers scored the quality of each study using the MacDermid’s Evaluation Guidelines and the CEBM for levels of evidence. Two of the three studies documented significant improvement of selected functional skills. Three of the five articles demonstrated significant improvement of selected functional skills.
Gencheva, N., Chavdarov, I., Kiriakova, M. & Docheva, N. (n.d.)

_Hippotherapy with cerebral palsy children – our experience in bulgaria – a pilot study._

Cerebral palsy (CP) is a disease requiring management, including knowledge of different therapeutic methods, in compliance with the needs of the child at certain stage of his psycho-motor development. Hippotherapy offers to the children with CP, medical care, sport and pedagogy at the same time and is used for their treatment (1,3). For a first time in Bulgaria, research was performed on the influence of hippotherapy on psychomotor status of children with CP. The purpose of this study was to measure range of the motor abilities, level of spasticity, body position in space and some psychological functions after participation in a hippotherapy programme.


Capella University, Minneapolis.

This study examined the effects of therapeutic horseback riding with children who were diagnosed with autistic spectrum disorders. The study was quantitative in nature and used a quasi-experimental pre-test/post test design to measure behaviour differences in autistic children after six sessions of therapeutic horseback riding. The measures included the Social Communication Questionnaire, Child Behaviour Checklist, Piers-Harris Children’s Self-Concept Scale and Child Response Questionnaire. The results of the Social Communication Questionnaire indicated that the treatment resulted in a significant decrease of abnormal behaviours. However there were no significant decreases of abnormal behaviours as measured by the Child Behaviour Checklist. The effects of the treatment on self-esteem were mixed and the results of the Child Response Questionnaire suggested that children were satisfied with therapeutic horseback riding. The study concludes with a discussion on the limitations and suggestions for future research.


The optimal practise of medicine includes integrating individual clinical expertise with the best available clinical evidence from systematic research. This article reviews nine treatment modalities used for children who have cerebral palsy (CP), including hyperbaric oxygen, the Adeli Suit, patterning, electrical stimulation, conductive education, equine-assisted therapy, craniosacral therapy, Feldenkrais therapy and acupuncture. Unfortunately, these modalities have different degrees of published evidence to support or refute their effectiveness. Uncontrolled and controlled trials of hippotherapy have shown beneficial effects on body structures and functioning. Studies of acupuncture are promising, but more studies are required before specific recommendations can be made. Most studies of patterning have been negative and its use cannot be recommended. However, for the other interventions such as hyperbaric oxygen, more evidence is required before recommendations can be made. The individual with CP and his or her family have a right to full disclosure of all possible treatment options and whatever knowledge currently is available regarding these therapies.


This osteopathic study examines the effectiveness of osteopathy in a child with cerebral paresis. A single case study has been chosen because the test person, Matthias, is a child who suffers from cerebral palsy. These neurological symptoms can take many different forms. Therefore, it is extremely difficult to make comparisons with several children. Matthias has suffered from tetraplegia since birth. Both his legs and his left arm are affected. Matthias has received physiotherapy from birth, switching later to hippotherapy. This is in effect a physiotherapeutic measure, whereby the three-dimensional movement of the horse is transferred to the rider. The researcher chose a withdrawal design (A-B-A) to permit Matthias to continue with hippotherapy and at the same time allowed the researcher to examine the efficiency of osteopathy during the ongoing, additional hippotherapy. Each phase lasted for five weeks i.e., the complete study encompassed 15 weeks. In the first and third phases, Matthias had hippotherapy once per week, as usual. In the second phase he was given additional osteopathic treatment. The hypothesis of this study was confirmed, i.e., that Matthias’ flexibility did indeed improve during osteopathic treatment and that this effect could be prolonged. Osteopathy can therefore be regarded as a sensible therapeutic method in Matthias’ case. This conclusion does not automatically apply to all children with cerebral palsy. Further orthopaedic studies on the clinical picture of cerebral palsy in children would be desirable,
as few studies have yet been carried out in this field. It would also be extremely interesting to find a suitable means of measuring the increase in these children’s wellbeing and quality of life after osteopathic treatment. Because the researcher used the Smiley Scale, the researcher was unable to distinguish Matthias’ true sense of wellbeing, as he always described his condition as being ‘very good’. Possibly, the use of a questionnaire with specific questions aimed at parents and children might provide more accurate information on these children’s real feelings of wellbeing.


Therapists use hippotherapy to improve postural control in children with neuromotor dysfunction. Understanding the influence of the horse’s movement on the child may clarify mechanisms which influence posture during hippotherapy. This study was conducted in two phases. First measurements of the kinematic relationship between the rider and the horse were developed. A kinematic analysis of the rider’s trunk and the horse’s back was used to describe postural orientation, postural stability and temporal phase relations of a novice and an experienced rider. Both riders exhibited a biphasic movement pattern in response to the horse’s movement. The experienced rider had a more vertical orientation of the trunk and delayed postural response to the movement of the horse. Next the researchers examined the influence of 12 weekly hippotherapy sessions on the postural control, coordination and function of two children with cerebral palsy. Both children with cerebral palsy approximated the biphasic movement patterns exhibited by the two children developing typically. Both also demonstrated improved coordination between the upper and lower trunk and between the lower trunk and the back of the horse. One child’s functional mobility improved. Additional research should investigate the kinematic relationship between the client and horse and the efficacy of hippotherapy.

Håkanson, M., Möller, M., Lindström, I., & Mattsson, B. (2009)


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 of particular benefit to the patients’ well being. 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 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.


The purpose of this single subject research study was to examine the effects of a once weekly, 10 week hippotherapy programme for three children with cerebral palsy, aged 27-54 months. Participants were rated as Level V on the Gross Motor Function Classification System. The sitting dimension of the Gross Motor Function Measure was used to establish a baseline of sitting abilities and was administered every two weeks during intervention. The Sitting Assessment Scale and the Gross Motor Function Measure were administered before, after and at four weeks post-intervention. Parental perceptions of the hippotherapy intervention were assessed using questionnaires. None of the children made gains on any of the standardised outcome measures. Parental perceptions were very positive, with reported improvements in range of motion and head control.

The aim of this study was to investigate whether therapeutic riding (TR, Sweden) hippotherapy (HT, United States) may affect balance, gait, spasticity, functional strength, coordination, pain, self-rated level of muscle tension (SRLMT), activities of daily living (ADL) and health-related quality of life. Eleven patients with multiple sclerosis (MS) were studied in a single-subject experimental design (SSED) study, type A-B-A. The intervention comprised ten weekly TR/HT sessions of 30 minutes each. The subjects were measured a maximum of 13 times. Physical tests were: the Berg balance scale, walking a figure of eight, the timed up and go test, 10 m walking, the modified Ashworth scale, the Index of Muscle Function, the Birgitta Lindmark motor assessment, part B and individual measurements. Self-rated measures were: the Visual Analog Scale for pain, a scale for SRLMT, the Patient-Specific Functional Scale for ADL and the SF-36. Data were analysed visually, semi-statistically and considering clinical significance. Results showed improvement for ten subjects in one or more of the variables, particularly balance and some improvements were also seen in pain, muscle tension and ADL. Changes in SF-36 were mostly positive, with an improvement in role-emotional seen in eight patients. Conclusively, balance and role-emotional were the variables most often improved, but TR/HT appeared to benefit the subjects differently.


Images on a poster exhibit for a nonprofit organisation’s camping experience for cancer survivors was the driver behind this paper. The poster showed an elderly man wearing a cowboy hat and a great grin on his wrinkled face as he stood next to a beautiful sorrel horse. There was a story behind the picture, the man had advanced cancer and had already entered a hospice programme, even though he was still physically active. He told many people that his biggest regret in life was that he had never ridden a horse. The photograph was taken the day his wish to ride finally came true; he died only weeks later. That image started the authors thinking about how to describe the benefit the equine experience had given that man. A growing number of experiential programmes offer cancer survivors, primarily children, the opportunity to ride horses as one of many recreational activities. However, the man had experienced something that surpassed a momentary recreational thrill, that started a quest that after 10 years came to fruition.


Although hippotherapy treatment has been demonstrated to have therapeutic effects on children with cerebral palsy, the samples used in research studies have been very small. In the case of hippotherapy simulators, there are no studies that either recommend or advise against their use in the treatment of children with cerebral palsy. The aim of this randomised clinical study is to analyse the therapeutic effects or the contraindications of the use of a commercial hippotherapy simulator on several important factors relating to children with cerebral palsy such as their motor development, balance control in the sitting posture, hip abduction range of motion and electromyographic activity of adductor musculature. The study is a randomised controlled trial, carried out with a sample of 37 children with cerebral palsy divided into two treatment groups with eligible participants randomly allocated to receive either (a) treatment group with hippotherapy simulator, maintaining sitting posture, with legs in abduction and rhythmic movement of the simulator or (b) treatment group maintaining sitting posture, with legs in abduction and without rhythmic movement of the simulator. Data collection and analysis: all measurements are carried out by a specially trained blind assessor. To ensure standardisation quality of the assessors, an inter-examiner agreement is worked out at the start of the study. The trial is funded by the Department of Research, Innovation and Development of the Regional Government of Aragon (Official Bulletin of Aragon 23 July 2007), project number PM059/2007. Interest in this project is due to the following factors: clinical originality (there are no previous studies analysing the effect of simulators on the population group of children with CP, nor any studies using as many variables as this project); clinical impact (infantile cerebral palsy is a chronic multisystemic condition that affects not only the patient but also the patient’s family and their close circle of friends); practical benefits (the development of an effective treatment is very important for introducing this element into the rehabilitation of these children).

Riding therapy (hippotherapy) is a novel progressive and original method for treating infantile cerebral palsy (ICP) and can be applied early in life. The researchers examined 100 ICP patients aged from three to 14 years, divided into two equal groups, one assigned to riding therapy and the other (control) to therapeutic exercises by the Bobath method. It was shown that riding therapy is advisable because it maximally mobilises the reserve possibilities of children for integrating perceptive and behavioural skills. The result was development of a protocol of therapeutic riding and scales for assessing its effect and demonstrating the efficacy of therapeutic riding.


Hippotherapy employs locomotion impulses that are emitted from the back of a horse while the horse is walking. These impulses stimulate the rider’s postural reflex mechanisms, resulting in training of balance and coordination. The aim of the study was to assess the changes in magnitude and distribution of the contact pressure between the rider and the horse during a series of hippotherapy lessons. The monitored group, consisting of four healthy women (mean age 22.75 years, mean body weight 59.75 kg, mean height 167.25 cm) without any previous horse riding experience, received five 20 minute lessons in a three week period. Hippotherapy was given on a 15-year-old thoroughbred mare. An elastic pad (Novel Pliance System, 30 Hz, 224 sensors) was used for pressure magnitude evaluation. The maximum pressure value was increased (p < 0.05) in the event of a second measurement (5th lesson). The pressure exerted on the rider upon contact of the rear limbs was higher than upon contact of the front limbs (p < 0.01). The size of the centre of pressure (COP) deviations in the anteroposterior direction reduced (p < 0.05) with the number of lessons received. With the growing experience of the participant, an increase in pressure occurred on contact of her body and the horse’s back as well as in the stability of the COP movement.

Kalley, L.P. (2012)


Hippotherapy is a type of therapy that utilises the motion of a horse to facilitate the stimulation and stretching of muscles in people with disabilities in order to increase strength, balance ability and coordination. Though hippotherapy facilitators, patients and their parents claim that this therapy is effective, there are few studies that offer evidence to this claim. Previous studies have utilised subjective evaluations done by trained testers to evaluate balance improvements. This thesis seeks to find quantitative evidence to support the effectiveness of hippotherapy by evaluating the balance ability of subjects throughout a treatment regimen. The researcher used a force plate and corresponding computer programme to record and analyse patient’s balance before, during and after hippotherapy treatment.


It is well known that active horseback riding therapy is effective for body muscle function and psychological well-being. Initially, the researchers wanted to introduce this horseback riding therapy into Japan. But, there are practical difficulties with regard to keeping horses in Japan, especially in hospitals in urban areas. Therefore, the researcher thought the only (practical) method of reproducing horseback riding conditions was the simulator. One purpose of the development of a horseback riding simulator is to make an assessment system and to establish a training system for body-balance functions. Another purpose is for the strengthening of leg and trunk muscles through active prevention of loss of balance. Consequentially, the muscles are trained and the simulator leads to the treatment of lower back pain. In 1985, Kimura developed a prototype horse back riding simulator. It was a machine which made six movements, reproducing the movement of a horse’s saddle. Six motors were used for the machine. The six movements were: pitching movement, roll movement, twist movement, movement forward and backward, side to side movement and vertical movement. Although individual movement was possible, the
six movements were not synchronised. After the passage of ten years, the researchers have succeeded in the reproduction of the movement of a horse’s saddle by using a parallel mechanism and motion capture. A computer memorises a horse’s movement and reproduces the horse’s back movement in the simulator. The researchers are able to make the electro-myographical analysis of the rider.

Stability of quiet upright stance was investigated in 25 children with cerebral palsy at the beginning and the end of a three month period of therapy involving 20 min microprocessor-controlled saddleriding, performed twice a week. The traditional parameters of postural sway based on the centre-of-pressure analysis (range, standard deviation, mean speed and mean radius) dropped significantly over time confirming advantageous influence of this treatment. As a complementary tool, an auto-regressive modelling technique was used allowing the researchers to establish after each single ride considerable decreases in the frequency of the feet adjustments, to represent the control variable of the postural system in sagittal plane. These changes reflect diminished ankle joints stiffness resulting from a single session and are supposedly a basic reason for substantial progress of the patients. The autoregressive approach proved to be a powerful method, corroborating and reinforcing stabilographic investigations. The findings confirm that the therapy led to a noteworthy improvement in the postural performance of the CP children in sagittal as well in frontal planes. Moreover, the findings led the researchers to infer about biomechanical properties of joints involved in maintaining posture, thus giving more insight into the operation of the neuro-muscular system and allowing better understanding of the reason of progress in motor control of posture.

This research utilised three interventions: hippotherapy, sitting astride a Bobath roll and sitting on a stool with rocking seat. Each session lasted 25 minutes and was conducted twice weekly for four weeks; the control condition was spasticity measurement without intervention. The main outcome measures were: clinical rating by a blinded examiner of movement-provoked muscle resistance, using the Ashworth Scale; self-rating of spasticity by subjects on a visual analog scale (VAS); and mental well-being evaluated with the self-rated well-being scale Befindlichkeits-Skala of von Zerssen. Assessments were performed immediately after intervention sessions (short-term effect); data from the assessments were analysed three to four days after the sessions to calculate the long-term effect. By analysing the clinically rated spasticity, only the effect of hippotherapy reached significance compared with the control condition (without intervention); median differences in the Ashworth scores sum before and after hippotherapy sessions ranged between -8.0 and +0.5. There was a significant difference between the spasticity-reducing effect of hippotherapy and the other two interventions in self-rated spasticity by VAS; median differences of the VAS before and after hippotherapy sessions ranged between -4.6 and +0.05cm. There were no long-term effects on spasticity. Immediate improvements in the subjects’ mental well-being were detected only after hippotherapy (p = 0.048). The conclusions were that hippotherapy is more efficient than sitting astride a Bobath roll or on a rocking seat in reducing spasticity temporarily. Hippotherapy delivered a positive short-term effect on subjects’ mental well-being.

This study undertook an assessment of spasticity before and after hippotherapy treatment to evaluate the short-term effect of hippotherapy on spasticity of spinal cord injured patients (SCIs). This study was carried out at the Swiss Paraplegic Centre, Nottwil. Thirty two patients with spinal cord injury with various degrees of spasticity had repeated sessions (mean 11) of Hippotherapy-K®. Spasticity of the lower extremities was scored according to the Ashworth Scale. In primary rehabilitation patients Ashworth values after hippotherapy were significantly lower than before (Wilcoxon’s signed-rank test: p < 0.001). Highest improvements were observed in SCIs with very high spasticity. No significant difference between short-term effect in paraplegic and short-term effect in tetraplegic subjects was found. This study concluded hippotherapy significantly reduces spasticity of lower extremities in SCIs.
Macauley, B.L. & Gutierrez, K.M. (2004)

The effectiveness of hippotherapy for children with language-learning disabilities.  

This study examined the effectiveness of hippotherapy versus traditional therapy for children with language-learning disabilities. Three boys aged 9, 10 and 12 years and their parents, independently completed a satisfaction questionnaire at the end of traditional therapy (T1) and again at the end of hippotherapy (T2). A comparison of the responses from T1 and T2 indicated that both the parents and the children reported improvement in speech and language abilities after both therapies. Overall, responses were noticeably higher following hippotherapy, with additional benefits of improved motivation and attention also reported.


A study of therapeutic effects of horseback riding for children with cerebral palsy.  
*Physical and Occupational Therapy in Pediatrics, 15*(1), 17-34.

This article described major findings from a study of the therapeutic benefits of horseback riding for children with cerebral palsy. Nineteen children aged four to 12 years with mild or moderate degrees of cerebral palsy were recruited from a children’s treatment centre. Prior to randomisation, the children were stratified according to their degree of disability. Ten children were allocated to a riding (experimental) group and participated in one-hour weekly riding classes for six months. The remaining nine children were put on a waiting list for riding. The results of the study were inconclusive as so often is the case with children with cerebral palsy. Qualitative results gleaned from the weekly progress recordings of the riding instructor, reports of the on-site physical therapist, and reports from parents showed clear progressions in physical and psychosocial functioning. Results of standardised quantitative assessments showed few statistically significant changes in the children. The study clearly indicated a need for further research and for finding or developing instruments that are able to capture and reveal meaningful changes in physical and psychosocial status.


Immediate effects of a hippotherapy session on gait parameters in children with spastic cerebral palsy.  
*Pediatric Physical Therapy, 21*(2), 212-218.

The purpose of this study was to examine the immediate effects of a hippotherapy session on temporal and spatial gait parameters in children with spastic cerebral palsy (CP). Subjects comprised nine children with a diagnosis of CP, six girls and three boys, seven to 18 years of age. Data for temporal and spatial gait parameters were collected immediately before and after a hippotherapy session. No statistically significant differences (p < 0.05) were noted in the post ride temporal and spatial gait parameter values when compared with the pre-ride values. This study provides baseline data for future research and useful clinical information for physical therapists using hippotherapy as a treatment modality for children with spastic CP.


*Developmental Medicine & Child Neurology, 40*(11), 754-762.

The purpose of this study was to evaluate the effects of an eight week programme of hippotherapy on energy expenditure during walking; on the gait dimensions of stride length, velocity and cadence; and on performance on the Gross Motor Function Measure (GMFM) in five children with spastic cerebral palsy (CP). A repeated-measures within-subjects design was used consisting of two baseline measurements taken eight weeks apart, followed by an eight week intervention period, then a post test. After hippotherapy, all five children showed a significant decrease (Xr2=7.6, p<0.05) in energy expenditure during walking and a significant increase (Xr2=7.6, p<0.05) in scores on Dimension E (Walking, Running, and Jumping) of the GMFM. A trend toward increased stride length and decreased cadence was observed. This study suggests that hippotherapy may improve energy expenditure during walking and gross motor function in children with CP.


Immediate and long-term effects of hippotherapy on symmetry of adductor muscle activity and functional ability in children with spastic cerebral palsy.  
*Archives of Physical Medicine and Rehabilitation, 90*, 966-974.
The researchers’ objectives were two-fold: To investigate the immediate effects of 10 minutes of hippotherapy, compared with 10 minutes of barrel-sitting, on symmetry of adductor muscle activity during walking in children with cerebral palsy (CP) (phase I); to investigate the long term effects of 12 weeks of hippotherapy on adductor activity, gross motor function, and self-concept (phase II). The research design comprised a pre-test/post test randomised controlled trial plus clinical follow-up.

The researcher was undertaken in an outpatient therapy center. The participants were children with spastic CP (phase I: n=47; phase II: n=6). Interventions: Phase I: 10 minutes of hippotherapy or 10 minutes of barrel-sitting; phase II: 12 weekly hippotherapy sessions. Main Outcome Measures: Phases I and II: adductor muscle activity measured by surface electromyography. Phase II: gross motor function and self-perception profiles. Results: Phase I: hippotherapy significantly improved adductor muscle asymmetry (p = 0.001; d=1.32). Effects of barrel-sitting were not significant (p = 0.05; d=1.10). Phase II: after 12 weeks of hippotherapy, testing in several functional domains showed improvements over baseline that were sustained for 12 weeks post-treatment. Conclusions: Hippotherapy can improve adductor muscle symmetry during walking and also improve other functional motor skills.

Mason, M. A. (2005)

Autism is a lifelong developmental disability that typically appears during the first 36 months of life. Research suggests autism is caused by a biomechanical or neurological disturbance (Green Lake County Health & Human Services Fox River Industries, 2004). It occurs in approximately 5-15 per 10,000 births. It is four times more common in boys than in girls. Autism targets all racial, ethnic, social, lifestyle, educational or psychological factor populations (Kohn, 1996). Adults and children with autism have impaired language acquisition and comprehension; uneven development in physical, mental and social skills; difficulty relating to people, objects or events; lack of play skills and abnormal sensory responses. Autism has various treatment modalities such as speech-language therapy, behaviour modifications, sensory motor and integration and special education intervention for school-age children with autism. This research suggests that the developmental disabilities of autistic children can also be addressed through therapeutic horseback riding. Therapeutic riding offers physical benefits from the gait of the horse which resembles a human’s natural walking movement. For the autistic population, research also suggests therapeutic riding offers social interaction as the instructors, volunteers, therapists, and riders build relationships with the horses. The purpose of this study was to measure specific communication and social benefits that therapeutic riding may offer autistic children.

Millhouse-Flourie, T.J. (2004)
Physical, occupational, respiratory, speech, equine and pet therapies for mitochondrial disease. Mitochondrion, 4(5-6), 549-558.

Treatments for mitochondrial disease while developing remain limited. Therapies complementary to traditional medical and surgical approaches may benefit the patient with mitochondrial disease. The goals of the ‘allied health professions’ of physical, occupational, speech and respiratory therapies are to maintain and if possible, improve patients’ existing strength, functioning and mobility. These therapists also play an important role in helping patients to compensate for disabilities and adapt to progressive symptoms. Novel forms of physical and occupational therapies, equine or ‘hippotherapy’ and pet therapy, use the human to animal relationship to improve physical and emotional health. To enhance quality of life, an integrated team of experts, under the guidance and supervision of the physician, should be available to the patient with mitochondrial disease.

Murphy, D., Kahn-D’Angelo, L., Gleason, J. (2008)

The purpose of this study was to measure the effect of hippotherapy on functional outcomes using the Goal Attainment Scale (GAS) for children with physical disabilities. Participants included four children aged five to nine years with physical impairments and/or documented motor delays. Individual measurable objectives were developed using the GAS for each child. Data were collected on each child every other week throughout the baseline and intervention phase over one year using a multiple single case experimental A-B design. Three of the four children had a significant improvement in functional outcomes based on a standardised T-score formula from the GAS. Two of the four children had statistically significant results on the nonparametric binomial test following six months of intervention. This study represents an initial attempt to use the GAS in a single-case design with a variety of pediatric diagnoses.

Use of complementary and alternative medicine by males with Duchenne or Becker muscular dystrophy was examined using interview reports from caregivers enrolled in the population-based Muscular Dystrophy Surveillance, Tracking, and Research Network. Of the 200 caregivers interviewed, 160 (80%) reported ‘ever’ using complementary and alternative medicine for their affected children. Mind-body medicine (61.5%) was most frequently used, followed by biologically based practices (48.0%), manipulative and body-based practices (29.0%), and whole medical systems (8.5%). Caregivers reporting use of whole medical systems had higher education and income levels compared with non-users; affected males had shorter disease duration. Caregivers reporting use of mind-body medicine, excluding aquatherapy, had higher education level compared with nonusers. Overall, complementary and alternative medicine use was high; disease duration, education and income levels influenced use. These findings have implications for developing clinical care protocols and monitoring possible interactions between complementary and alternative medicine and conventional medical therapies.

Powered saddle and pelvic mobility: An investigation into the effects on pelvic mobility of children with cerebral palsy of a powered saddle which imitates the movements of a walking horse. Physiotherapy, 84(8), 376-384.

This study investigated the influence on pelvic mobility in children with cerebral palsy of a mechanical saddle (BABS) with imitates the movement of a horse at walk. Using a matched pairs design, subjects were selected and matched into 13 pairs. Subjects sat on either the BABS or a static saddle ten times for ten minutes over four weeks. Passive pelvic movement was measured from photographs taken at end range of passive anterior and then posterior pelvic tilt, before and after the trial. Using a related t-test a significant increase in passive pelvic antero-posterior tilt was found with subjects who used the BABS. The astride position may have influenced pelvic movement as some of the subjects on the static saddle showed an increase in range. The significant difference between the two groups was attributed to the BABS movement. Facilitation of more normal postural tone, more appropriate reciprocal innervation and possible increased soft tissue extensibility are likely to have facilitated the increase in passive pelvic movement. These results indicate that the movement of a horse at walk can facilitate pelvic movement; the BABS and conventional horse riding are valuable tools in the physiotherapy treatment of children with cerebral palsy.


The design of this research comprised pre-postoperative follow-up with a 12 week intervention and 12 week washout period after intervention, working in a human performance laboratory with six camera video motion capture systems for testing. The sample comprised 11 children (age 5-13yr, average 8yr) with SDCP, eight children (age 5-13yr, average 8yr) without disabilities. Hippotherapy intervention was performed at three therapeutic horseback riding centers. The main outcome measures were: video motion capture using surface markers collecting data at 60Hz, a mechanical barrel to challenge trunk and head stability and functional reach/ targeting test on static surface. Significant changes with large effect sizes in head/trunk stability and reaching/ targeting, elapsed time, and efficiency (reach/path ratio) after 12 weeks of hippotherapy intervention. Changes were retained after a 12 week washout period. The conclusion was hippotherapy improves trunk/head stability and UE reaching/targeting. These skills form the foundation for many functional tasks. Changes are maintained after the intervention ceases providing a skill foundation for functional tasks that may also enhance occupational performance and participation.


The purpose of this pilot study was to examine the effectiveness of hippotherapy as an intervention for the treatment of postural instability in individuals with multiple sclerosis (MS). This study was a non-equivalent
pre-test-post test comparison group design. Nine individuals (four males, five females) received weekly hippotherapy intervention for 14 weeks. The other six individuals (two males, four females) served as a comparison group. All participants were assessed with the Berg Balance Scale (BBS) and Tinetti Performance Oriented Mobility Assessment (POMA) at 0, 7, and 14 weeks. The group receiving hippotherapy showed statistically significant improvement from pre-test (0 weeks) to post test (14 weeks) on the BBS (mean increase 9.15 points (χ²(2) = 8.82, p = 0.012)) and POMA scores (mean increase 5.13 (χ²(2)= 10.38, p = 0.006)). The comparison group had no significant changed on the BBS (mean increase 0.73 (χ²(2)= 0.40, p = 0.819)) or POMA (mean decrease 0.13 (χ²(2) = 1.41, p = 0.494)). A statistically significant difference was also found between the groups’ final BBS scores (treatment group median = 55.0, comparison group median 41.0), U = 7, r = -0.49. Further research is needed to refine protocols and selection criteria.


Clinical observations have suggested hippotherapy may be an effective treatment strategy for habilitating balance deficits in children with movement disorders. However, there is limited research to support this claim. The purposes of this study were to assess the effectiveness of hippotherapy as a treatment for postural instability in children with mild to moderate balance problems and determine whether a correlation exits between balance and function. A repeated measures design of a cohort of children with documented balance deficits was utilised. Methods: Sixteen children, aged five to 16 years, (nine males, seven females) with documented balance problems participated in this study. Intervention consisted of six weeks of 45-minute bi-weekly hippotherapy sessions. Two baseline and one post test assessments of balance, using the Pediatric Balance Scale (PBS), and function as measured by the Activities Scale for Kids-Performance (ASKp), were performed. Utilising Friedman’s ANOVA, the PBS (p < 0.0001) and ASKp (p < 0.0001) were statistically significant across all measurements. Post hoc analysis (p ≤ 0.017) showed the statistical difference occurred between baselines and post test measures. This degree of difference resulted in large effect sizes for the PBS (d =1.59) and ASKp (d =1.51) scores following hippotherapy. A Spearman rho correlation of 0.700 (p = 0.003) indicated a statistical association between the PBS and ASKp post-test scores. There was no correlation between change in PBS and ASKp scores (rs = 0.13, p > 0.05). Lack of a control group and the short duration between baseline assessments are study limitations but the findings suggest hippotherapy may be a viable treatment strategy for children with mild to moderate balance problems to improve balance deficits and increase performance of daily life skills.

Horseback riding as therapy for children with cerebral palsy. Physical and Occupational Therapy in Pediatrics, 27(2), 5-23.

A systematic review of the literature on horseback riding therapy as an intervention for children with cerebral palsy (CP) was carried out. The terms horse, riding, hippotherapy, horseback riding therapy, equine movement therapy and cerebral palsy were searched in electronic databases and hand searched. Retrieved articles were rated for methodological quality using PEDro scoring to assess the internal validity of randomised trials and the Newcastle Ottawa Quality Assessment Scale to assess cohort studies. PICO questioning (Population Intervention, Comparison, and Outcomes) was used to identify questions of interest to clinicians for outcomes within the context of the International Classification of Functioning, Disability and Health. Levels of evidence were then accorded each PICO question. There is Level 2a evidence that hippotherapy is effective for treating muscle symmetry in the trunk and hip and that therapeutic horseback riding is effective for improved gross motor function when compared with regular therapy or time on a waiting list. No studies addressed participation outcomes.

Effects of equine-facilitated therapy on self-efficacy beliefs of cerebral palsied pre-adolescents and adolescents (Unpublished thesis). Union Institute and University, Ohio.

Research has documented the effectiveness of small domestic animals as therapeutic agents in the treatment of individuals with physical and emotional disabilities, but comparatively little is known about the use of large, non-domestic animals in this population. The study investigated the effect of therapeutic horseback riding on the self-efficacy beliefs of cerebral palsied pre-adolescents (age 9-12) and adolescents (age 13-17). A pre-test-post test standardised measure of general self-efficacy was administered to pre-adolescent (n = 12) and adolescent (n = 12) groups who participated in an eight week equine-facilitated therapy programme. There were differences in probability (p) values between the pre-adolescent and adolescent groups. At alpha level 0.05, the pre-adolescent group exhibited a trend toward significance (p = 0.08). However, the adolescent group had a
much higher probability value (\( p = 0.22 \)) and did not exhibit the trend toward significance that was noted in the younger subjects. The study brings to light an innovative and promising form of therapy that may benefit those with cerebral palsy and other disabilities. It lays the foundation for future research into the therapeutic benefits of horseback riding.

---


**Horseback riding in children with cerebral palsy: Effect on gross motor function.**

*Developmental Medicine & Child Neurology, 44, 301-308.*

The effects of recreational horseback riding therapy (HBRT) on gross motor function in children with cerebral palsy (CP: spastic diplegia, spastic quadriplegia, and spastic hemiplegia) were determined in a blinded study using the Gross Motor Function Measure (GMFM). Seventeen participants (nine females, eight males; mean age 9 years 10 months, SE 10 months) served as their own control. Their mean Gross Motor Function Classification System score was 2.7 (SD 0.4; range 1 to 5). HBRT was one hour per week for three riding sessions of six weeks per session (18 weeks). GMFM was determined every six weeks: pre-riding control period, onset of HBRT, every six weeks during HBRT for 18 weeks, and six weeks following HBRT. GMFM did not change during pre-riding control period. GMFM Total Score (Dimensions A-E) increased 7.6% (\( p<0.04 \)) after 18 weeks, returning to control level 6 weeks following HBRT. GMFM Dimension E (Walking, Running, and Jumping) increased 8.7% after 12 weeks (\( p<0.02 \)), 8.5% after 18 weeks (\( p<0.03 \)), and remained elevated at 1.8% six weeks following HBRT (\( p<0.03 \)). This suggests that HBRT may improve gross motor function in children with CP which may reduce the degree of motor disability. Larger studies are needed to investigate this further, especially in children with more severe disabilities. Horseback riding should be considered for sports therapy in children with CP.

---

Sterba, J.A. (2007)

**Does horseback riding therapy or therapist-directed hippotherapy rehabilitate children with cerebral palsy?**

*Developmental Medicine & Child Neurology, 49(1), 68-73.*

Quantitative (not qualitative) studies were sought investigating whether horseback riding used as therapy improves gross motor function in children with cerebral palsy (CP). Eleven published studies on instructor-directed, recreational horseback riding therapy (HBRT) and licensed-therapist-directed hippotherapy were identified, reviewed and summarised for research design, methodological quality, therapy regimen, internal/external validity, results and authors' conclusions. Methodological quality was moderate to good for all studies; some studies were limited by small sample size or lack of non-riding controls. HBRT improved gross motor function in five of six studies (one study was inconclusive); hippotherapy improved gross motor function in all five studies. The studies found that during HBRT and hippotherapy: (1) the three-dimensional, reciprocal movement of the walking horse produced normalised pelvic movement in the rider, closely resembling pelvic movement during ambulation in individuals without disability; (2) the sensation of smooth, rhythmical movements made by the horse improved co-contraction, joint stability and weight shift, as well as postural and equilibrium responses; and (3) that HBRT and hippotherapy improved dynamic postural stabilisation, recovery from perturbations and anticipatory and feedback postural control. The evidence suggests that HBRT and hippotherapy are individually efficacious and are medically indicated as therapy for gross motor rehabilitation in children with CP. Recommendations for future research are discussed.

---

Stickney, M.A. (2010)

**A qualitative study of the perceived health benefits of a therapeutic riding program for children with autism spectrum disorders**

(Unpublished thesis). University of Kentucky, USA.

This study utilised multiple methods to gain an in-depth perspective on the benefits of a therapeutic riding programme based at Central Kentucky Riding for Hope in Lexington, Kentucky, for subjects presenting primarily with ASD. Focus groups were held with five instructors and five class volunteers. Semi-structured personal interviews were conducted with two staff members and the parents and family members of 15 children diagnosed with ASD who were currently enrolled in a riding session. Client records containing medical history, lesson plans and client evaluations were also reviewed. Thematic analysis of the data supported perceived gains in the areas of physical, cognitive, psychological and social development. It highlighted the additional support mechanisms for family members of the clients. Some of the most common benefits reported included increased physicality, improved focus and attention, modification of inappropriate behaviours, enhanced self-concept and increased social interaction and communication. Major factors believed to affect the success of this intervention were the unique movement and sensory stimulation of the horse, the supportive environment of the facility and the increased motivation for the children to participate and complete the structured activities and exercises required in the riding class setting.


Autism is a prevalent developmental disorder that affects numerous aspects of a child’s daily functioning, including but not limited to communication, social interaction, cognitive functioning, motor functioning and sensation. The many impairments that characterise 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 programme on the volition of three children with autism. Using the Pediatric Volitional Questionnaire, two occupational therapists rated the three participants’ volition at three timepoints – before, during and after the hippotherapy programme. Visual analysis of the data using methods derived from single-subject design research revealed an increase in participants’ volition over time. The study provides preliminary evidence that improved volition may be an important and under-recognised benefit of hippotherapy for children with autism.


Autism spectrum disorders (ASD) are a group of developmental disorders characterised by impairments in communication, social interaction and imagination; deficits in gross and fine motor skill functioning are also common. Previous research has indicated that animals are well suited for treating children with ASD, although little research has been done to investigate equine-assisted therapy (EAT) as a treatment method for children with these types of disabilities. EAT has been used to promote health for centuries. Today there is much clinical experience regarding the benefits of EAT, but despite the increasing demand for evidence-based treatment methods, there is still a scarcity of research to support it.

The purpose of this research was to explore and describe how EAT as a treatment method for children with ASD is experienced by their parents and caregivers. A qualitative study was conducted with semi-structured interviews as the data collection method. Four parents and one caregiver were interviewed. A content analysis was then carried out to analyse the interviews. The results showed EAT provided a chance for children with ASD to have fun and have experiences that normally would be out of reach. Physical, social and psychological developments were experienced. The results also highlight aspects believed to be necessary to create a successful session. Cost and availability were discussed. The researchers concluded that the results of this study indicated that EAT may have a wide range of therapeutic benefits for children with ASD.


The purpose of this study was to measure the effects of a seven-week therapeutic horseback riding programme and to determine if changes were retained after therapeutic riding was discontinued. A repeated-measures within-participants design was used to assess performance on the Gross Motor Function Measure and timed 10 metre walk in seven developmentally delayed children. A statistically significant improvement in gross motor function was found in post-intervention measures. Improvements were maintained seven weeks after therapeutic riding had ended. No considerable difference in gait speed was noted. This study indicates that therapeutic riding may lead to improvement in gross motor function in developmentally delayed children and that these improvements remain once therapeutic riding ceases.
PSYCHIATRIC AND PSYCHOLOGICAL DISABILITY


Five adults with longstanding histories of psychiatric disabilities were recruited for a ten week therapeutic horseback riding programme. Individuals learned basic riding skills and had the opportunity to bond with a horse. In addition, the riders participated in a post-riding process group that used artistic and creative exercises to promote individual expression. By the end of ten weeks, the riders reported success in learning basic horsemanship and, in doing so, reported additional psychosocial benefits, including an augmented sense of self-efficacy and self-esteem. In summary, this adjunctive therapy can facilitate the recovery process.


Examining the literature on the efficacy of equine-assisted therapy for people with mental health and behavioural problems. *Mental Health and Learning Disabilities Research and Practice, 8*(1), 51-61.

This review aims to explore the literature relating to the efficacy of Equine-assisted Therapy (EAT) during which horses are used as a tool for emotional growth and learning helping adults and children with mental health and behavioural problems, such as mood disorders, addictive behaviours and communication difficulties. EAT arose during the 1970s, when alternatives to traditional talking therapies were created. A search for relevant literature was undertaken, using electronic and manual search strategies. The data bases used included: CINAHL, MEDLINE, AMED and INTERSCIENCE. It was evident that there was limited research-based literature within the UK compared with the USA. However, magazine articles, reporting opinions and case studies, originating from Canada and Northern Europe, were useful and informative. The literature revealed promising results in the use of EAT in increasing positive and reducing negative behaviours as well as in proving beneficial for those suffering from general mental health problems. The review also indicates the need for further research and discusses its implication for practice.

Cerino, S., Cirulli, F., Chiarotti, F., & Seripa, S. (2011)


The FISE (Federazione Italiana Sport Equestri) Pindar is a multicentre research project aimed at testing the potential effects of therapeutic riding on schizophrenic patients. Twenty-four subjects with a diagnosis of schizophrenia were enrolled for a one year treatment involving therapeutic riding sessions. All subjects were tested at the beginning and at the end of treatment with a series of validated test batteries (BPRS and eight items-PANSS). 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 hospitalisation.

Chardonnens, E. (2009)

The use of animals as co-therapists on a farm: the child-horse bond in person-centered equine-assisted psychotherapy. *Person-Centered and Experiential Psychotherapies, 8*(4), 319-332.

Animals, particularly horses, assist in therapy with children and adults with severe psychological and behavioural problems. 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.

One form of psychiatric leisure rehabilitation which has only recently been explored for individuals with schizophrenia is therapeutic horseback riding (THBR). This study is the first to examine THBR for Assertive Community Treatment (ACT) patients with schizophrenia. A sample of six ACT patients with schizophrenia or schizoaffective disorder who reside in the community and six mental health care staff participated in 10 weeks of weekly horseback riding sessions with an experienced THBR instructor. Participating patients, staff and the THBR instructor were qualitatively interviewed at the start, during and at the end of the THBR programme and these semi-structured interviews were analysed for recurrent themes. The researchers found that THBR benefitted this group of patients. In spite of the study’s limitations, such as its exploratory nature and the small sample size, it demonstrated that THBR has promise and should be further developed and studied for individuals with schizophrenia.


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 programme. Very little research exists investigating the effectiveness of utilising horses in the therapeutic learning process. The present study encompasses three years of research on a unique programme hypothesised to enhance traditional therapy and facilitate the learning process for youths with special needs.


This qualitative study explored the practices of credentialed therapists using equine-assisted/facilitated (EAP/EFP) psychotherapy in the treatment of adolescent depression. A purposive sample of 15 licensed therapists experienced in EAP/EFP was recruited through membership roles in two leading EAP/EFP organisations. Respondents treated inner-city, suburban and rural adolescents, representing diverse socio-economic and cultural backgrounds. This study explored the role of the horse in EAP/EFP and identified theoretical influences that informed this type of treatment. Respondents perceived that interactions and exercises with the horses provided feedback mechanisms to the adolescents, as well as object representations of past and current relationships in which therapeutic change could take place. Respondents perceived EAP/EFP aided in increasing self-esteem and self-efficacy, as well as decreasing isolation in the depressed adolescents treated. Cognitive behavioural therapy, experiential therapy, Gestalt therapy, as well as object relations theory, were cited as theoretical and clinical approaches in EAP/EFP.


Equine-assisted psychotherapy (EAP) is fast gaining recognition internationally as an effective treatment strategy for a number of different client groups. Its capacity to deliver positive outcomes for adolescents and mental health clients has brought the practice to Australasia. This paper provides a review of the literature on EAP and considers the development, status and future among contemporary counselling approaches. After examining the history of the horse-human relationship and the possible value of the horse as a therapeutic assistant, the researchers discuss the background and development of EAP through to its emerging professional status. The process of an EAP session is briefly described and is illustrated with client responses to EAP. The researchers conclude by discussing the outlook for EAP in Australia and New Zealand, with some suggestions for future potential and development.


Already, studies have shown how ‘animals have found a place in various therapeutic situations’; however, more research is needed on the exact effects of this type of therapy on specific symptoms (Mallon, 1992, 53-54). This study focused on EAP’s specific effects on depression, anxiety, social behaviours and goal attainment. Further, the authors attempt to provide quantitative data that empirically supports EAP.


An evaluation of equine-assisted wellness in those suffering from catastrophic loss and emotional fluctuations (Unpublished thesis). The University of Utah, Utah.

This research study dealt specifically with the mitigation of depression resulting from the death of a loved one or similar catastrophic loss using equine-assisted wellness interventions. This study used only female participants between the ages of 30 and 65 who had experienced a loss within the last two years. Each participant in the treatment group received five 90 minute interventions with a trained facilitator and a horse. Pre- and post depression measurements were taken as well as other wellness indices. Physiological data that included blood pressure, pulse rate, respiratory rate and core temperature were obtained before treatment began and after each of the five interventions. The treatment group was compared with a control group using an analysis of covariance. Results suggest that a five-intervention facilitated exposure to horses reduced depression and increased mental wellness.


The aim of this study was to determine executive function outcomes after an equi-therapy intervention in a group of Tourette syndrome children. Equi-therapy is a new form of therapeutic horse riding, related to the stimulation of the vestibular system through sensory integration in the brain.

For this study a non-equivalent control group design was implemented. The study consisted of eight Tourette syndrome children aged between nine and 15, who were referred after a definite Tourette syndrome diagnosis from various neurologists and paediatricians.

Both groups were evaluated on a battery of six neuropsychological tests measuring various aspects of executive function before and after receiving the therapeutic horse riding intervention. The tests used were the Wisconsin Card Sorting Test, the Stroop Colour Word Test, the Rey-Osterrieth Complex Figure Test, the Trail Making Test A and B, the Raven’s Standard Progressive Matrices and the Symbol Digit Modalities Test. Qualitative inputs were also included in the study. These consisted of behavioural checklists completed by the participants’ parents, the evaluation of the participants’ copy drawings as ‘frontal’ or ‘normal’ obtained from the Rey-Osterrieth Complex Figure test and results of tests that were administered by an occupational therapist as part of the required evaluation for the therapeutic horse riding (equi-therapy) itself.

Results of the neuropsychological tests indicated significant differences for the Wisconsin Card Sorting Test, Stroop Colour Word Test and the Symbol Digit Modalities Test, indicating improvements in selective attention, cognitive flexibility, visual spatial constructional ability, visuo-motor integration, visual memory and organisational strategies. The qualitative results indicted improvements in emotional and behavioural aspects.

Executive abilities are a very complex system and evaluation should always include robust and sensitive neuropsychological tests. It seems as if Tourette syndrome could be directly related to executive dysfunction, but not in a simple manner as aspects may vary due to other more complex factors that may contribute to these dysfunctions. However, for equi-therapy as an alternative form of therapy, the opportunity should not be lost to establish its efficacy because of the possible beneficial outcome.

**Horse girl: An archetypal study of women, horses, and trauma healing** (Unpublished thesis). Pacifica Graduate Institute, California.

This study investigated archetypal connections between women and horses to explore why increasing numbers of girls and women have been drawn to own horses and participate in equine-related activities. An alchemical hermeneutic method is used. The theoretical dissertation’s structure is based on the author’s poem, Horse Girl (2002). The poem describes a healing of the split that occurred six thousand years ago when the domestication of horses led to the traumatic domination of peaceful, goddess-worshipping cultures, ushering in warfare and patriarchal control as the norm. The simultaneous loss of freedom of women and horses is investigated through horse goddess myths, film, literature, imaginal dialogues and experiences, as well as clinical and historical evidence. Pivotal myths include Saranyu, the runaway Hindu horse goddess, Celtic horse goddesses Epona, Macha, and Rhiannon, and the Greek myths of Demeter and her daughters, as well as Medusa and Chiron. Native American myths of stallion brides are also surveyed. The runaway bride archetype emerges from a review of literature and film portrayals of women and horses. Her male counterpart is the wounded healer/horse whisperer. The rise in woman-initiated divorce, the walkaway wife archetype and the increase in women-headed households suggest a failure of marriage to support women’s autonomy and authenticity. Key findings of the study include the predator-prey relationship and its ramifications in gender, cultural, inter-species and intrapsychic relationships. The study explores the possibility that women and beings with extra-sensitive nervous systems have unique responses to trauma. The remarkable survival of the horse over 58 million years is chronicled along with the special abilities and expanded awareness that humans can learn through being with horses. The study investigates horse abuse and contrasts it with ancient horse sacrifices. This study proposes that trauma healing, intuition, sociosensual awareness, women’s and horses’ leadership and non-verbal skills, spiritual awareness and survival skills can be enhanced through learning from horses. This study has important implications for women’s studies, ecopsychology, trauma healing, equine-assisted therapy, gender studies and leadership studies. The study advocates depth psychological healing technologies that utilise body-awareness, myth and the creative arts therapies in trauma treatment.

Hemenway, R. (2006)


Adolescence is a period of many changes which are accompanied by an increased risk for psychopathology. Rates of depression increase and gender differences emerge, with higher incidence of depression among adolescent girls. Adolescent girls are also at higher risk of loss of self-esteem. Research on the effects of people’s contact with pets has investigated the relationships between both pet ownership and depression and ownership and self-esteem, but very few studies have examined the interaction of depression and self-esteem with horseback riding. No empirical research has been done on the potential protective effects of riding or its utility as a coping mechanism in non-clinical populations. This study used a qualitative design to explore the experiences of 10 non-clinical adolescent girls who were identified as horseback riders. Both phenomenological and grounded theory analyses of the data were used to describe and hypothesise the nature of the relationship between depression, self-esteem and horseback riding. Three major themes – competence/efficacy, relationship and distraction/escape – were identified as mechanisms by which horseback riding effected depression and self-esteem. Although the effects were generally positive, horseback riding had both positive and negative effects on mood and self-esteem through the functions of competence/efficacy and relationship. Through the function of distracting, relaxing, refocusing and, at times, allowing for reflection and problem-solving in a reduced-stress setting, the distraction/escape factor always improved mood and reduced depressive feelings among the girls in this study. The results indicate that more research is warranted in this area, particularly about the biofeedback-link and physiological aspects of horseback riding. Clinical implications of the results and suggestions for future research are discussed.
Karol, J. (2007)


This article describes a unique, innovative and effective method of psychotherapy using horses to aid in the therapeutic process (equine-facilitated psychotherapy or EFP). The remarkable elements of the horse – power, grace, vulnerability and a willingness to bear another – combine to form a fertile stage for psychotherapeutic exploration. Therapeutic programmes using horses to work with various psychiatric presentations in children and adolescents have begun to receive attention over the past 10 years. However, few EFP programmes utilise the expertise of masters and doctoral-level psychologists, clinical social workers, or psychiatrists. In contrast, the psychological practice described in this article, written and practised by a doctoral-level clinician, applies the breadth and depth of psychological theory and practice developed over the last century to a distinctly compelling milieu. The method relies not only on the therapeutic relationship with the clinician, but is also fueled by the client’s compelling attachment to the therapeutic horse. As both of these relationships progress, the child’s inner world and inter-personal style come to the forefront and the EFP theatre allows the clinician to explore the client’s intra-personal and inter-personal worlds on pre-verbal, non-verbal and verbal levels of experience.

Kirby, M. (2010) Gestalt equine psychotherapy

*Gestalt Journal of Australia and New Zealand*, 6(2), 60-68.

From the ground of Gestalt therapy and the field of equine-facilitated or assisted psychotherapy emerged Gestalt equine psychotherapy (GEP). This article introduces the reader to the relatively new therapeutic approach of Gestalt equine psychotherapy. As far as the author is aware, there are two centres or programmes offering Gestalt equine psychotherapy in the world – the Gestalt Equine Institute of the Rockies (GEIR) and Gestalt Equine Psychotherapy Australia (GEPA). This article begins with the writer’s personal experience with horses, and is followed by an introduction to GEP, the process of GEP, and the role of the therapist in GEP. Some brief cases are offered to give a taste of what the work may look like. Finally, some limitations to this approach are noted.


This article describes an equine-assisted experiential therapy approach and presents treatment outcomes in 31 participants in an equine-assisted, experiential therapy programme. Participants completed psychological measures prior to treatment, immediately following treatment and six months after treatment. Reported reductions in psychological distress and enhancements in psychological well-being were significant immediately following treatment and were stable at six month follow-up. The article discusses the clinical implications and limitations of the present study and directions for further research.


A qualitative and quantitative review of equine-facilitated psychotherapy (EFP) with children and adolescents. *The Open Complementary Medicine Journal, 1*, 51-57

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. The theory and background of EFP is summarised with references to various psychotherapeutic perspectives, such as: Freudian, Jungian, cognitive, behaviourist, and psychodynamic models. The status of the research is discussed and available empirical studies and reports on this topic are summarised. Possible applications to patients with eating disorders, anxiety, trauma history, attention-deficit hyperactivity disorder, oppositional defiant disorder and delinquency are described. Recommendations are made regarding the direction of future research on EFP.

Equine-assisted therapy and exercise with eating disorders: A retrospective chart review and mixed method analysis (Unpublished thesis). The University of Texas at Arlington.

Eating disorders are a group of devastating mental illnesses that chronically affect millions of young women and men of all ages and ethnicities in industrialised nations. Mainstream treatment approaches to date have proven to have variable efficacy and outcomes: new behavioural interventions such as equine-assisted therapy and exercise deserve to be considered as a viable intervention with this population. The area of equine-assisted therapy in the field of eating disorder research has received disproportionately little attention. Given the number of residential treatment facilities that integrate it into their treatment for eating disorders, evidence of its safety and efficacy is warranted. Exercise, however, has been investigated with eating disorder patients. Empirical evidence indicates physical activity intervention is not only safe for this population, it improves a range of biopsychosocial outcomes. Yet exercise is not a standard adjunct treatment for people with eating disorders as it is mainly viewed as a part of the pathology of the mental illness or as a method of weight loss for a proportion of this population. Reframing physical activity in terms of how it benefits patients will be a challenge for clinicians without further evidence.

In this study, equine therapy notes at a residential treatment facility were examined to determine type (ground vs. mounted and group vs. one on one), duration and intensity of physical activities, as well as perceived improvements in psychological well-being. Patient demographics and scores for the Beck Depression Inventory-II and Eating Disorder Inventory-2 provided further data to determine whether equine-assisted therapy and the physical activity during sessions were associated with improved outcomes for patients. Results indicate physical activity involved in equine therapy is safe and plays a role in eating disorder symptom improvements. The amount of energy spent in physical activity in equine-assisted therapy accounted for 14.3% of Beck Depression Inventory-II discharge scores and 24.8% of changes in Eating Disorder Inventory-2 scores, regardless of eating disorder diagnosis. The qualitative analysis revealed themes of improved psychological well-being from equine-assisted therapy for those patients whose length of stay was 30 days or more: asserting needs, identifying contributing factors to the eating disorder, asking for help, problem solving, thinking positively and verbalising feelings of frustration. The key findings illuminate the value of equine-assisted therapy with the eating disorder population. In conclusion, this type of therapy is valid and will help clinicians to better identify those patients who would benefit the most from equine-assisted therapy. Likewise, the positive association of physical activity with improved mood and eating disorder symptoms legitimises exercise as an intervention. These are exciting and promising findings for patients with eating disorders and clinicians alike who wish to include physical activity with equine-assisted therapy in treatment plans.


Equine-facilitated psychotherapy is a developing form of animal assisted therapy which primarily incorporates human interaction with horses as guides. The behaviour of a sensitive horse provides a vehicle which the therapist can use to teach the patient coping skills. This theoretical study presents to readers the researchers’ opinion about the main considerations of equine-facilitated psychotherapy for children. In this scenario, the horse could be included as a cotherapist in a team comprising psychologist, occupational therapists, veterinary doctors and horsemen. Horses, by their large, gentle presence, put children therapeutically in touch with their own vitality. Children who ordinarily shun physical and emotional closeness often can accept it from a horse. Beneficial results of a child-horse relationship include: care translation, socialisation and conversation, self-esteem promotion, companionship and affection stimulation. It is concluded that equine-facilitated psychotherapy provides well being and improvement in quality of children with mental health problems.

Taylor, S.M. (2001)


In this paper the author discusses the current status of research in AAT as well as citing the anecdotal evidence which is being heavily relied upon to justify continuation of the work. The writer takes the position that the mental health professionals’ refusal to see this as a form of legitimate treatment contributes to a continuing lack of research. A section describing the beginnings of the work and its present format is included to illustrate the therapeutic promise for practice. The paper concludes with ideas for future research, a section on ethical issues as they relate to establishment of the discipline and suggestions for individuals and organisations who are interested in becoming involved in EFP.

*Horses that heal: the effectiveness of equine-assisted growth and learning on the behaviour of students diagnosed with emotional disorder* (Unpublished thesis). Governors State University, USA.

Students with a diagnosis of Emotional Disorder (ED) have a wide range of academic and behavioural problems (Gable, Hendrickson, Tonelson & Van Acker, 2002). The issues these children face can adversely affect student academic performance and hinder social relationships (Kauffman, 2001). One method alone will not resolve complex emotional disorders. Multiple interventions are needed to serve this population. This research project examines how Equine-assisted Growth and Learning (EAGAL) influences the classroom behaviour of elementary school students diagnosed with ED in a special education setting. Using the Illinois Learning Standards for Social Emotional Learning (Stage D), Goals Standards and Objectives, two goals were used to form objectives for this study. They were carried out using EAGAL as the intervention method. A group of 10 students were asked to participate in this study to determine if EAGAL is an effective intervention for students diagnosed with ED.

Worms, K.A. (2009)


This study explored the general benefits of equine-facilitated therapy and for whom this treatment is appropriate. Utilising interviews of ten equine therapists and therapeutic riding instructors, with an advanced degree in the areas of social work, psychology, education or therapeutic recreation, as well as at least one year of professional equine experience, this study explored the participants' perception of the use of equine-facilitated therapies as it applies to mental health treatment. Secondly, through this perspective, the study looked to identify a 'preferred client profile' that participants felt would be best suited to engage in equine-facilitated therapy (EFT). The findings unanimously showed that there was no 'preferred' client profile for EFT, but that there were specific client-related contraindications which would make EFT an inappropriate intervention for some. The study results also found that the aspect of immediate feedback in EFT is a fundamental element of the practice, allowing for practical in-vivo problem solving, increased client self-awareness and honesty. In addition, the study found that clients had an easier time addressing issues of transference with their horse partners as compared to their human therapists. Finally, this study demonstrated that EFT could be highly beneficial for treatment of trauma related issues. Equine-facilitated therapy helps to decrease the fear and intimidation of trauma treatment, decrease physical symptoms of traumatic stress response, helps clients increase motivation and aid in the development of a positive internalised sense of self. Equine-facilitated therapy also provides clients with the opportunity to address interpersonal disruptions such as boundaries, assertiveness and emotional engagement with others.


The purpose of this research was to explore the nature of equine-human bonding and its therapeutic value in recovery from trauma. The study sample consisted of six participants who identified that their pre-existing relationships with horses were therapeutic in recovering from various types of trauma (i.e. car accidents, horse-related accidents, work accidents and health trauma). Using a phenomenological perspective and an emotionalist lens, through the use of semi-structured interviews and video-tapes of horse-rider interaction, the study sought to describe the nature of the equine human bond and how it is useful in trauma recovery. The research results show that equine-human bonds, like other kinds of human-animal relationships, appear to mirror some of the fundamental elements significant to therapeutic alliances between professionals and clients. Four themes that constitute aspects of the equine-human relationship emerged from the data analysis: the intimacy or nurturing bond, the identity bond, the partnership bond and the utility bond. Themes pertinent to the therapeutic value of the equine-human bond included feelings, behaviours and touch/physical closeness relevant to healing. Themes related to understanding the trauma experience and other factors related to recovery also emerged. The results underline the significance of riders’ bonds with their horses to trauma recovery. A discussion of the implications for both social work and veterinary medicine is presented along with recommendations for future research.
Aardoom, A. (2007)

Dancing with horses: The experience of the dynamics between horse and human that facilitates psychological and/or spiritual growth (Unpublished thesis). University of Calgary, Canada.

The purpose of this research was to look at the experience of psychological and/or spiritual growth as a result of interacting with horses. A second element of interest was to look at the underlying dynamics in the relationship between horse and human that facilitate this growth process. This research is qualitative and based on interviews with six co-creators as well as the researcher’s experience. The methodology used was a combination of heuristics and a newly developed methodology based on chaos and complexity theories. It was found that the experience of growth was very much like the story of the universal and mythological hero, as described by Joseph Campbell (1949). Participants embarked on a challenging journey with learning and connecting of horses. The learning was how to build cooperative relationships with horses but also with others, with God and with themselves. The connecting was related to connecting with self, other, nature and God. The dynamics found in the relationship between horse and rider are mutual relationship, which incorporates communication, bonding and projection. Within this mutual relationship, the horse may take on the following roles: horse as friend, teacher, therapist, role model, healer, parent (mother and father), saviour and ally. A horse was also found to be a metaphor for self, shadow self, Divine/God, other, mirror, connector, instinct and meditation. Experience with a horse could also function as an analogy for relationships and life situations. The creative synthesis was based on the Vedic Horse Sacrifice and adapted to the findings of this research. The meaning of the Horse Sacrifice is the horse representing the universe and lower self of Brahman, which is sacrificed for renewal.

Bachi, K., Terkel, J., & Teichman, M. (2011)


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

Bowers, M.J., & MacDonald, P.M. (2001)


Therapy with children is not a simple task. Some children are more approachable than others: in order to reach certain children, a nontraditional approach may need to be employed by the therapist. Although many techniques currently exist to help engage children in the therapy process, very little research has been conducted on the use of animals as co-facilitators. This work examined the effectiveness of utilising horses as co-facilitators in the therapeutic process when working with at-risk adolescents. It was hypothesised that contact between a specially trained horse and an adolescent would allow therapeutic goals to be reached in a non-traditional and non-threatening manner.

The psychological impact of equine-assisted therapy on special education students (Unpublished thesis). Walden University.

Youth with mental health and special education needs propel providers to create innovative interventions, as traditional methods do not always meet the diverse needs of these youth. Adjunct intervention using equine-assisted therapy (EAT) has been previously used. However, scientific research on EAT remains sparse and its credibility has been questioned. The problem this study addressed was whether or not 12 weeks of EAT could provide psychological, behavioural, social and academic benefits to special education students. Using a mixed method design, phenomenological data was combined with pre-test and post test scores on The Strengths and Difficulties Questionnaire (SDQ). Results showed no statistical differences between pre-test and post test scores for students and parents; however, staff reported more strength was gained during the intervention. Further, from staff and student reports, phenomenological themes related to EAT that emerged included the student’s ability to participate and be responsible, building self-control, emotional insight, behavioural awareness, relationship skills, coping skills, positive interactions with horses and staff and recounting experiences via fond stories. Collaborative data suggested staff and students thought EAT was beneficial socially, behaviourally and psychologically. Parents did not concur with this conclusion. The mixed method design filled a gap in previous EAT studies that were qualitative or quantitative only. The implications for social change include a more expanded dialog about the effectiveness of EAT with special education students. This study demonstrated the utility of a comprehensive and collaborative mental health intervention using EAT that can result in a deeper understanding of special education students’ values, learning, social/life skill acquisition.

Burgon, H. (2011)


Although there is significant research on the benefits of animal-assisted therapy, little is known about therapies where horses in particular are used in therapeutic and learning interventions. This paper investigated the experiences of at-risk young people who participated in a therapeutic horsemanship programme at ‘The Yard’. Therapeutic horsemanship is aligned with the emerging therapeutic interventions known as equine-assisted therapy, equine-assisted learning and equine-facilitated psychotherapy. Participants included five girls and two boys who attended over a two year period. Results suggested that the relationships and experiences the participants had with the horses contributed to them gaining psychosocial benefits such as self-confidence, self-esteem, self-efficacy, a sense of mastery and empathy. The author concluded that the therapy opened positive opportunities including social normalisation for the children. Implications for clinical relevance are discussed.


The purpose of this study was to determine if a relationship exists between participation in a therapeutic riding programme and improvement in self-concept. Using a One Group Pre and Post Test design, the Piers Harris Children’s Self-Concept Scale was administered to 29 adolescents identified by the school system as having special educational needs. These students participated in a therapeutic riding programme. The mean percentage score of those participants who had no previous riding experience was not statistically significant; however, there was an increase. A t-value of 2.17 (df=22) was obtained on the two-tailed paired t-test conducted on the Behaviour Cluster scores. This was statistically significant at the 0.05 level. There was a positive correlation between younger students and improvement in self-concept scores. Furthermore, those participants who had previous therapeutic riding experience started with a mean score of 80%, as compared with 52% for those with no previous experience.

Cuffari, M. (2011)

The relationship between adolescent girls and horses: Implications for equine-assisted therapies (Unpublished thesis). Kent State University, USA.

Most mental health disorders begin in adolescence. Because earlier interventions result in better outcomes, the search for effective therapies for at-risk adolescents has intensified. There is anecdotal evidence that equine-assisted mental health therapy programmes improve coping and build skills in adolescent girls with mental health problems. The value of working with horses in a therapeutic modality is presumed to be based on the adolescent girl-horse relationship, yet the nature of this relationship has not been described or explained. The purpose of this
research was to describe the essence of the relationship between adolescent girls and horses in order to obtain a greater understanding of the potential benefits of equine-assisted therapies for adolescent girls.

An interpretive qualitative approach, based on Heideggerian philosophy, was used to examine the nature of the relationship from the perspective of the adolescent girls. To provide a broad understanding of the relationship, two groups of adolescent girls were purposefully sampled (n = 19). One group consisted of girls who had a variety of behavioural and emotional problems and were participating in an equine-assisted therapy programme (n = 9). The second group included girls from local riding stables who were naturally attracted to horses and rode for pleasure (n = 10). Using open-ended questions, the girls were asked to describe their relationships with horses. The interviews were audio taped and transcribed. The data were analysed in a disciplined and systematic manner according to procedures outlined by Diekelmann and Allen (1989). The themes identified were sharing physical affection, being there for each other, being connected, dealing with stress, being good at something, and being a better person. The findings illustrate that adolescent girls derive important benefits from their relationships with horses. The experiences of girls with their horses during equine-assisted therapy can provide a context and focus for psychotherapy and counselling, suggesting that the two types of therapy should be integrated. This study offers promising information into understanding the relationship between adolescent girls and horses and a foundation for future research in this area.

Foley, A.J. (2008)


This dissertation is the report of a qualitative study of at-risk and delinquent girls housed in a traditional residential treatment facility, who also participated in an animal-assisted and gender-specific therapy programme using horses, outside of the residential institution. To date, no such studies exist examining both the gender-specific and animal-assisted approaches to addressing troubled girls' needs. The study is guided by Relational Cultural Theory, a theory that focuses on human development primarily through connections with others, specifically designed to address the significance of the relational experiences of females. The ethnographic approach used in this study of girls provides rich data to understand these girls and their experiences in a more comprehensive context.

The programme appeared successful in empowering girls and in improving their ability to focus, manage their emotions and relax. About half of the girls attributed improvements in their behaviour to the Horseback Miracles programme. This effect was particularly evident for girls who reportedly developed connected, mutual relationships with the director of the horseback riding programme. Overall, the results indicate that the equine programme played an important role in girls' lives. It allowed them to distance themselves from the negative institutionalised environment, characterised by disconnected relationships with peers and staff members and by access to negative coping mechanisms (drugs, tools to self-injure and methods of escape); it provided girls with a method of resisting the institutionalised identity.

Gasiorowska, B. (n.d.)


In their work hippotherapists encounter children suffering from all sorts of diseases and developmental disorders like autism, mental impairment, analyser disfunctions, emotional disorders, sensory integration disorders, cerebral palsy. No matter what the diagnosis, they are faced with patients’ behaviours which they don’t understand and believe strange. These kinds of behaviours may be observed also in healthy children whose development worries their parents and physicians, although they are not generally disturbed behaviours. Hippotherapists are surprised that their patients are often not able to plan and complete even the simplest of activities. They are surprised when 'he does not mind what he’s doing' in spite of the therapist’s numerous warnings this way 'he’s heading for another failure'. Therapists wonder why the child is not able to hold any object 'normally' although any action regarding an object held in two fingers only is practically impossible. This kind of behaviour has been precisely analysed and described by Felicie Affolter in her work 'Perception, reality, language'. The author presents causes of the disorder and suggests a specific therapy which may be described as 'psycho-education of rational hand activity'. Affolter describes her patients as "people with perception disorders". It is necessary to dwell a while over this term to understand precisely the patient's problem and the method's main assumptions. As may be derived from the Latin source, perception (lat. perceptio – catching, holding, understanding, learning) is based on receiving stimuli via various sensory spheres putting us in touch with our environment. We should keep in mind that the kinesthetic-sensory sphere is the most complex of our senses. Therefore, to hold anything and act we need to sense it.

The impact of hippotherapy on grieving children. *Journal of Hospice and Palliative Nursing, 6*(3), 171-175.

This article looks at the use of therapeutic riding, or hippotherapy, with children who are mourning the death of a family member. Therapeutic riding is the summer programme that is part of the Evergreen support group for grieving school-age children and their families. A qualitative study of the impact of the riding programme is presented. The research question was whether the children, parents and adult volunteer would view the programme as encouraging the processing of grief and person development. The following themes in perceived outcomes of the programme were identified: confidence, trust and communication skills. The parents and guardians all described the therapeutic riding as a positive experience. They noted an increase in overall communication, including talk about the deceased, as well as an increase in the child’s self-confidence and self-esteem. Success with the horses appeared to be important to these children, who expressed pride and joy in their accomplishments.


Personality variables, family dynamics and community support variables have been identified as protective variables in the lives of at-risk youth (Garmezy, 1993). Rutter (1987) emphasised the importance of looking at the processes or mechanisms through which these factors affect risk or protection in the lives of at-risk youth. Rutter (1987) identified four protective processes: increasing self-esteem, decreasing impact of risk, decreasing negative chain of events and opening positive opportunities. In the area of community support, a unique therapy entitled Equine-facilitated Psychotherapy (EFP) has recently evolved. This study used a qualitative design to explore the experiences of 10 at-risk youth who participate in EFP. Resiliency theory was used as a framework to investigate the experiences of the participants.

A qualitative analysis revealed 13 major themes and three minor themes in participant responses. Themes relating to the unique experience of treatment included: treatment was enjoyable, treatment was challenging, EFP treatment was better than previous treatment, talking was an important part of treatment, the importance of the horse as a metaphor, and the importance of the horse as a mirror. Themes relating to the protective process of childhood resilience included: self-esteem, mastery, positive relationships people and horses. Reducing the impact of risk/breaking negative chain reactions themes included: increased communication skills, alternative coping skills, increased awareness of internal experience. Opening positive opportunity themes included: interactions with natural environment, required acts of helpfulness and role modeling experiences.

The themes that emerged in this study indicated some of the important treatment experiences in an EFP programme. In addition, themes in this study indicated the presence of the protective processes of resilience at work in EFP programmes. Specific clinical implication and suggestions for future research are discussed.

Greenwald, A.J. (2001)


The relationships between humans and animals have been associated with various therapeutic implications. While there is no agreed upon name, the term 'pet facilitated therapy' has become widely accepted. Pet facilitated therapy has been particularly adopted to describe the relationship between humans and domestic animals. In contrast to public attitudes of twenty years ago, the field of animal-human relationships is now respected as a legitimate area of research investigation (Levinson, 1982). Numerous studies have been conducted on the benefits of the relationships between domestic animals and humans; however, there continues to be little empirical evidence that specifically addresses the relationship between humans and horses. Therapeutic horseback riding, a term which takes into account the relationship formed with the horse both while riding and on the ground, has been widely accepted among the professionals in the field. Despite this agreement, applied research in the field is needed to validate its apparent benefits.

The present study was developed to determine how a therapeutic horseback riding programme can predict outcome on self-esteem, frustration tolerance, depression and anxiety. Participants were 81 emotionally disturbed males between the ages of six and 16 who were students in a residential treatment center. Results were analysed using zero-order correlations and a series of setwise multiple regression equations. The results indicated that children who experienced a meaningful bond to a horse were more anxious and depressed. However, the bond with a horse did not significantly influence a child’s self-esteem or frustration tolerance.
Children who were more involved in the horsemanship programme tended to be less depressed and anxious. A child’s self-esteem and frustration tolerance were not affected by their involvement in the horsemanship programme. Children’s conduct in the horsemanship programme did not significantly influence their self-esteem, frustration tolerance, depression or anxiety. Implications of these results are for the therapeutic use of horseback riding as an adjunct or alternative therapy for emotionally handicapped individuals.


It is estimated that approximately 10% of adolescents are classified as severely emotionally disturbed and suffer from motivational problems, difficulty with authority figures, trust and boundary issues and an overall resistance to therapy. Animal-Assisted Therapy (AAT) is a goal-directed intervention in which an animal is incorporated as an integral part of the treatment process. The benefits of AAT include increased self-esteem, reductions in depression and anxiety and enhanced social interaction. These benefits, along with the potential for animals to help adolescents overcome motivational and trust issues, suggest that AAT might be a worthwhile intervention to use with this population. The present study was a formal programme evaluation of the Right Track Programme (RTP), a vocational and therapeutic horseback riding programme for severely emotionally disturbed adolescents from the Baltimore Metropolitan Area. The programme’s aim is to help adolescents achieve a variety of therapeutic, educational/vocational and community involvement goals through the completion of three separate phases. Participants were 19 SED adolescents who participated in the programme and eight waiting list control participants. In order to evaluate the therapeutic goals, measures of self-esteem, locus of control, psychiatric symptoms and behavioural conduct were completed at baseline and after Phase 1 and Phase 2 of the programme. Educational/vocational goals were evaluated through the use of knowledge and proficiency tests. Descriptive data were gathered to evaluate community involvement goals. Results indicated that participants in the RTP experienced significant increases in self-esteem after each phase of the programme, although no significant improvements in locus of control, psychiatric symptoms, or behavioural conduct were found. There were no significant improvements in self-esteem for the control participants and post-test levels of self-esteem were higher in RTP participants than in controls. Results suggest that the treatment programme is successful in improving self-esteem, although further research is needed to determine whether other therapeutic benefits exist. Achievement of educational/vocational goals was observed, as all participants passed the proficiency tests and performed better on post-test measures of equine knowledge. Additionally, data show that the RTP was successful in providing opportunities for participants to achieve community involvement goals.


The objective of this research was to determine the effect of a five day therapeutic riding day camp on children’s anger, quality of life and perceived self-competence. Our study sample involved 16 able-bodied individuals (11±4.4 years) with no known physical or psychological disability and no known history of psychotropic medications. The Children’s Anger Inventory, Peds Quality of Life and Self Perception Profile for Children were administered prior to riding on day one and after riding on day five. Results show that after five days of therapeutic riding camp, the total score of the anger inventory and scores for all sub-scales except frustration decreased significantly. No other differences were noted. 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.


This work undertook observational studies to determine the effects of a therapeutic riding programme on psychosocial measurements among children in special education programmes considered at risk of poor performance or failure in school or life. Seventeen at-risk children (six boys and 11 girls) and 14 special education children (seven boys and seven girls) comprised the subject groups. For the at-risk children, anger, anxiety, perceived self-competence and physical coordination were assessed. For the special education children, anger and cheerfulness were measured and the children’s and their mothers’ perceptions of the children’s behaviour were assessed. Measurements were made before and after an 8-session therapeutic riding programme. For
boys enrolled in the special education programme, anger was significantly decreased after completion of the riding programme. The boys’ mothers also perceived significant improvements in their children’s behaviour after completion of the programme. Results suggest that an eight session therapeutic riding programme can significantly decrease anger in adolescent boys in a special education programme and positively affect their mother’s perception of their behaviour.


**Therapeutic horseback riding with children placed in the foster care system.** *ReVision, 30*(1-2), 77-87.

Studies concerning animal-assisted therapies and therapeutic horseback riding have involved specific populations, including individuals with physical disabilities, developmental disorders, the elderly and at-risk youth. To date, no studies looked at the effect of therapeutic horseback riding on children in therapeutic foster care (TFC). TFC children who have been abused and abandoned struggle with trusting others, low self-concept and forming quality relationships. Case study methodology combined with a quasi-experimental design was utilised to answer the research question: What are the effects of therapeutic horseback riding on abused children placed in the therapeutic foster care system? Each child’s case was analysed and triangulated by converging data sources. Qualitative analysis of the interviews identified themes including improved acceptance of self and others, positive changes in behaviour, decreased ambivalence, increased satisfaction and happiness and greater enjoyment of socialisation. The results of this study clearly support the use of animal-assisted therapy with TFC children participants, as well as some of the TFC parents seemed to experience a paradigm shift in their values from the experience.

Kirk, L. (2012)

**From the horse’s mouth: The effectiveness of equine-assisted psychotherapy with at-risk adolescents.** In C. Skehill (Ed.) *Compendium of Evidence-based Projects, 106-131.* Belfast: Queen’s University Belfast.

At-risk adolescents are widely acknowledged to be amongst the ‘hardest to reach’ groups in social work. In response to the increased need for effective interventions, many alternative approaches have been developed, including ‘wilderness’ or ‘outward-bound’ activities. EAP offers another alternative, with research demonstrating benefits and outcomes for diverse service user populations including adolescents. Within Northern Ireland EAP offers an exciting, holistic and cutting edge approach, but is often met with cynically raised eyebrows as to its relevance to social work. This project explores EAP alongside the underpinning theory base, including the use of horses as therapeutic tools, catalysts and metaphors, and the therapy’s links to experiential and Gestalt approaches. Thus in many ways it is a non-traditional approach evolved from several traditional, well-established theories and principles. This is followed by a discussion of the main findings and themes drawn from national and international evidence and research. This discussion considers the beneficial outcomes in the areas of self-esteem, communication and interpersonal skills, empathy, self-efficacy and problem solving. Despite limitations to the existing research and evidence-base regarding representativeness and reliability, alongside obstacles to EAP’s implementation, the project proposes that there is much evidence suggesting EAP’s effectiveness with at-risk adolescents. Thus it is a fertile field for future research, making a valuable addition to social work’s repertoire and, crucially, enabling at-risk adolescents to make positive life changes.


**Equine therapy: What impact does owning or riding a horse have on the emotional well-being of women?** (Unpublished thesis). Capella University. Minnesota.

This study answered the question “What impact does owning or riding a horse have on the emotional well-being of women?” The magnetic attraction the horse has over some women is phenomenological, mystical and subjective in nature. This study used a qualitative approach implementing Rogerian person-centered theory to understand this question. Interviews were directed and guided by the participants. Eight women of differing ages were interviewed at their farms with their horses present. Observations, taped interviews and field journal notes were utilised to triangulate data. This study identified twelve themes that captured the essence of the research question. The twelve themes were (a) freedom and fun; (b) abuse and subjugation; (c) emotional sensitivity through trust and bonding; (d) risk taking; (e) power and strength; (f) caretaker and teacher; (g) social networks; (h) a gift, passion, addiction, or born with it; (i) spiritual bond; (j) money; (k) talking to horses or for them; and (l) sexual. Emotional sensitivity through trust and bonding appeared to be the most important positive impact that horses have on a woman’s emotional well-being leading to confidence building. Risk taking appeared to be the most negative impact that horses have on women’s emotional well-being putting them at risk for future repeated injuries.
Masters, N. (2010)

*Equine-assisted psychotherapy for combat veterans with PTSD (Unpublished thesis). Washington State University, Vancouver.*

Post traumatic stress disorder (PTSD) is a serious problem for numerous post war combat veterans who have experienced violent and traumatic conflict scenarios. The importance of determining and making available effective treatment regimes for this disorder has become increasingly more acute due to the growing number of combat veterans being identified and diagnosed. The purpose of this article was to provide a brief review of equine-assisted psychotherapy for the treatment of combat veterans with PTSD and to discuss practice considerations for practitioners working in an outpatient care setting.


This study investigated the effectiveness of equine-facilitated couples therapy as compared to more traditional solution focused couples therapy for dyadic relational adjustment as measured by three separate administrations of the dyadic adjustment scale (Spanier, 1967). MANOVA analysis revealed no significant differences between test groups on the first two administrations of the dyadic adjustment scale but did yield significant differences on the third administration. On the third administration of the dyadic adjustment scale individuals in the equine-facilitated therapy group scored an average of seven points higher on the dyadic adjustment scale as compared to like subjects in the solution focused group. In addition, case study results also support quantitative data results as outlined in the following manuscript. Findings are discussed as related to future progress of equine therapy in the counselling profession.


Equine-assisted psychotherapy (EAP) is a specialised form of psychotherapy using the horse as a therapeutic tool. This modality is designed to address self-esteem and personal confidence, communication and interpersonal effectiveness, trust, boundaries and limit-setting and group cohesion. Substantial numbers of children witness family violence. There is evidence that violence between parents has adverse effects on the children in the family. These children are at greater risk of behavioural problems and mental health disorders, including anxiety, anger, depression and suicidal ideations, withdrawal, low self-esteem and attention deficit hyperactivity disorder. 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 (June 2003 – January 2005). 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. The mean (± standard deviation, SD) pretreatment score was 54.1 (SD 3.2) and post treatment mean score was 61.7 ± 5.0 (t = 9.06, d.f. = 96, p < 0.001). 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 (r = 0.73, p = 0.001). Univariate analysis showed that the greatest improvement in the GAF scores occurred in the youngest of the subjects. 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 a 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.

Shultz, B.N. (2005)


The increased need for effective interventions and the difficulty of working with at-risk adolescents have resulted in the design of many non-traditional approaches to therapy for at-risk youth. Equine-assisted psychotherapy (EAP) combines traditional therapeutic interventions with a more innovative component involving relationships and activities with horses. The purpose of this study is to fill a research gap by examining the therapeutic outcomes of EAP in treating at-risk adolescents ages 12-18. The findings suggest that at-risk adolescents who participate in an EAP programme experience greater positive therapeutic progress in psychosocial functioning than those who do not participate in an EAP programme.

This study demonstrates the efficacy of Equine-assisted Counselling (EAC) by comparing EAC to classroom-based counselling. Students (n = 164) identified as being at high risk for academic and/or social failure participated in 12 weekly counselling sessions. Within-group paired sample t-test results comparing pre- and post-treatment scores for externalising, internalising, maladaptive, and adaptive behaviours determined that the EAC made statistically significant improvements in 17 behaviour areas, whereas the RD group showed statistically significant improvement in five areas. Between-groups ANCOVA results indicated that the EAC showed statistically significant improvement in seven areas when compared directly to RD. Repeated measures ANOVA of the EAC participants’ social behaviour ratings showed statistically significant improvement with increases in positive behaviours and decreases in negative behaviours.

*Therapeutic Value of Equine-Human Bonding in Recovery from Trauma. Anthrozoos, 21* (1), 17-30

Although most human-animal bond research has focused on relationships between humans and pets, animals have been used for therapeutic purposes in a variety of settings. Therapeutic riding programmes have demonstrated a positive impact on quality of life for people with disabilities. 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 six participants in this study recognised that their pre-existing relationships with horses were therapeutic during recovering from trauma, defined as sufficient to have caused significant change in the participant’s life. Semi-structured interviews and video-tapes of horse-rider interaction were used to describe the nature of the equine-human bonds described by participants; these have parallels both with important elements of therapeutic alliances between professionals and clients and with the positive impact of relationship factors on client outcome.
MULTIPLE DISABILITIES / GENERAL STUDIES


Domestication of animals began over 12,000 years ago and continues today. Animals and humans have been developing special relationships for centuries. Despite descriptive and anecdotal reports, research focused on the use of animals as therapeutic interventions and the unique relationship that often exist between animals and humans, has been sparse and frequently not based on rigorous methodology. This article reviews interventions and outcomes of animals commonly considered companions or pets and horses. Issues and implications for rehabilitation professionals in regards to their awareness and use of these less than traditional forms of interventions are explored.


*Therapeutic horse riding: What has this to do with occupational therapists? The British Journal of Occupational Therapy, 63(6), 277-282.*

The horse has been used as a therapeutic medium since the time of the ancient Greeks. Xenophon is quoted as saying that ‘the best thing for the inside of a man is the outside of the horse’ (Longden 1998, 44). Man has been using horses for more than 3,500 years as draught horses or for riding; therefore, the man-horse relationship may be perceived ‘as a close psychophysical attachment’ (Schulz 1997, 65). The horse and its environment has been and continues to be used as a therapeutic tool for people with a wide range of needs and abilities, as is evidenced in the literature. This paper identifies some of the benefits and limitations of therapeutic horse riding and its relationship with occupational therapy, through a review of the literature and the use of case summaries from the author’s personal experience.

Brandt, K. J. (2005)


The cowboy’s stranglehold on the label of expert in human-horse relationships, as well as mythic construction of the woman-horse bond, have effectively silenced women’s voices and rendered their experiences with horses non-authentic. This dissertation takes women’s knowledge of horses seriously as data and draws from three years (2001-2004) of ethnographic research of in-depth interviews and participant observation. The author explores the human-horse communication process and argues that the two species co-create what is termed an embodied language system to construct a world of shared meaning. The author problematises the centrality of verbal spoken language and the mind in theories of subjectivity. The author maintains that the privileged status of verbal language has left untheorised all non-verbal language using beings, human and non-human alike. The author brings questions of embodiment – in particular women’s embodiment – to the centre and examines how lived and felt corporeality shapes human subjectivity. This dissertation represents the promise of human-animal studies to deepen understanding of the human and non-human animal experience by offering new and different pathways for the creation of knowledge.

Bukowska-Johnson, G. (2011)

*Hippotherapy as one of the forms of rehabilitation. Journal of Health Promotion and Recreation Rzeszow, 3, 5-10.*

The present work shows one of the forms of disabled people therapy. This form is called hippotherapy that means cure, in which a horse is a main factor. A lot of various aspects of hippotherapy have been presented in order to understand the importance of this method. The conducted questionnaire showed the progress in cure of the children suffering from various diseases.


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. The benefits of animal-assisted therapy (AAT) and pet ownership on human health and well-being are well documented. However, 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. A further objective was to find out whether these benefits, if identified, were transferable to other areas of the riders’ lives. The study was conducted utilising a case study, participant observational methodology following the progress of six women with various mental health problems receiving RT on a weekly basis. The sessions comprised learning to look after the horses and carrying out stable management tasks, in addition to the riding. The chief instructor was aware that an important factor of the RT was building up a relationship and trust with the horses on the ground. Methods employed to record the sessions, apart from participant observation, included interviews and questionnaires. The prime objective of the study was for the riders’ experience of the therapy to be expressed in their own words. It was found that the participants benefited in areas ranging from increased confidence and self-concept and that the therapy aided social stimulation and led to acquiring transferable skills.


This article discusses the use of hippotherapy to enhance the occupational performance skill of children with disabilities. Hippotherapy is used as an adjunctive therapeutic modality to facilitate basic performance skills such as balance and equilibrium reactions, postural control, body awareness, sensory processing and gross motor coordination which the child can apply to other activities at home, school, or in the playground. By mobilising the hip and pelvis, stimulating the central nervous system, activating weak muscles, and decreasing spasticity, children are able to increase participation in the occupational performance of other age-appropriate activities.


The researchers have developed a horseback-riding simulator to deliver horseback riding therapy as an empirical therapy for both physical and mental disease. The effect of increasing muscle strength has been proven by clinical experiment. However, the quantitative exercise cannot be measured. In this paper, a portable electromyometer was applied to construct the bio-feedback control system for active muscle movement. A control strategy to adjust the movement mode of the simulator for obtaining certain exercise intentions was proposed. The results of experiments are shown.


The article summarises the findings of studies that show the benefits of therapeutic riding in patients with depression, anxiety, attention-deficit/hyperactivity disorder, conduct disorders, dissociative disorders, Alzheimer’s disease, dementia, autism and other chronic mental illnesses. It explains the different psychotherapeutic benefits of equine therapy. It examines the example of the Remuda Ranch programmes for anorexia and bulimia and patients’ feedback to this programme.
Canada is an international leader in providing residential treatment to First Nations youth who abuse solvents. The residential centres are linked through the national Youth Solvent Addiction Committee (YSAC), which provides theoretical direction for the treatment provided at the centres. In this article, the researchers discuss YSAC’s culture-based model of resiliency and illustrate it through the offering of Equine-assisted Learning (EAL) at one of the residential centres – the White Buffalo Youth Inhalant Treatment Centre. YSAC has expanded the Western concept of resiliency, which focuses on the individual, to include both the individual and community. A Western worldview associates several resiliency dynamics with an individual, including insight (which is internal) and external relationships; whereas from a First Nations worldview, YSAC identifies an individual at the same time being their inner spirit (internal) and relations with their collective community. White Buffalo’s application of a culture-based model of resiliency is illustrated from the intersecting perspectives of its programme, the Cartier Equine Learning Centre’s EAL programme, and Elders’ stories. The researchers also highlight through the EAL example how YSAC’s culture-based model of resiliency and a Western health promotion approach are complementary. There is much to be learned from YSAC’s holistic approach to treatment and healing for both First Nations and Western health promotion responses to substance abuse. The writers identify a limitation of this article as the discussion of the theoretical intersections between a culture-based model of resiliency, EAL and health promotion is not an empirical test. They conclude the article with five key research suggestions as next steps to further understanding of EAL and with a specific emphasis on how it relates to First Nations community health.

The potential benefits of an equine-assisted learning (EAL) programme offered to Inuit youth who abuse solvents is examined. Fifteen interviews with male and female EAL programme participants and six staff. It was found that young people’s 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. This understanding provides insight into the dynamics of healing for Aboriginal young people who abuse solvents. It may be applicable to other programmes and populations.

This dissertation explored the relatively new approach to experiential psychotherapy known as Equine-facilitated Psychotherapy (EFP) or Equine-assisted Psychotherapy (EAP). For the purposes of this study, EFP/EAP was defined as a therapeutic approach in which a licensed or otherwise legally sanctioned mental health professional works with clients in the company of an equine for all or some of the time spent in psychotherapy. The research was divided into two parts. In the first part, 30 female and five male psychotherapists, aged 30 to 62, who had been practicing EFP/EAP for at least one year completed a questionnaire. The second part of the project consisted of in-depth semistructured interviews of 15 of the psychotherapists who had completed the questionnaire. Through the questionnaire and interviews the researcher sought to answer three questions regarding the topic: (a) How is EFP/EAP conducted at this time; (b) What are the major benefits and clinical outcomes of EFP/EAP as perceived by the therapists, and how are these benefits and outcomes effected; and (c) Why do psychotherapists choose to work with equines? A combination of a heuristic and grounded theory method was used. Results showed a wide variety of ways psychotherapists implement their practice of EFP/EAP. However, there was substantial agreement in what the equine brings to the therapeutic encounter: unique equine attributes, opportunities for metaphor and relational aspects. The participants demonstrated a consensus in the belief that this approach can be beneficial to a large spectrum of populations. Many clinicians alluded to transpersonal benefits including somatic aspects, a calming effect and equines assisting clients in being attentive and totally present to the moment. The intersubjective field was seen as a way in which all EFP/EAP could be perceived. The researcher concluded that each style of working with equines demonstrated two to four major types of five intersubjectivities – as context, as resonance, as phenomenology, as relationship and as spirit.

**Why children with special needs feel better with hippotherapy sessions: A conceptual review.**
The Journal of Alternative and Complementary Medicine, 17(3), 191-197.

Hippotherapy literally means 'therapy with the help of a horse'. It is derived from the Greek word *hippos*, meaning 'horse.' Hippocrates was the first to describe the benefits of hippotherapy for rehabilitation purposes. Although this therapy has many years of history, few scholars have defined the theoretical bases of hippotherapy and less about how psychological, physical, social and educational benefits can be achieved through hippotherapy in children with special needs. 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. The author concludes hippotherapy, by affecting multiple systems such as the sensory, muscular, skeletal, limbic, vestibular and ocular systems simultaneously, leads to psychological, social and educational benefits that will be evidenced in behavioural patterns used in other environments.

Gustavson-Dufour, J. (2011)

**Equine-assisted psychotherapy and adolescents** (Unpublished thesis). Adler Graduate School, Richfield.

Adolescent depression is a complicated diagnosis affecting an increasing number of adolescents in the United States. Mental health professionals utilise a range of techniques to treat adolescent depression; however, due to the large array of symptoms and the often difficult nature of these clients, professionals are always looking for more options for treatment. Equine-assisted psychotherapy is a technique where clients partner with horses through a variety of activities meant to address their depressive symptoms and build their social and relational skills. This type of psychotherapy combines the most effective parts of existing therapies, works within a limited number of sessions and can be used in conjunction with other interventions. Equine-assisted psychotherapy creates a unique environment that fosters change and growth for adolescents experiencing depression. Although working with horses in therapy is a relatively new idea in the United States, initial research supports its effectiveness with the adolescent population.


**Therapeutic horseback riding.** AWHONN Lifelines, 8(1), 46-53.

The horse has been used as a therapeutic agent since the time of the ancient Greeks. Hippocrates once spoke of 'riding's healing rhythm'. Early Greeks were reported to offer horseback rides to raise the spirits of people who had incurable illnesses. Therapeutic riding refers to the use of the horse and equine-oriented activities to achieve a variety of therapeutic goals, including physical, emotional, social, cognitive, behavioural and educational goals. An important area of concern for women with disabilities is achieving the highest level of wellness possible. Because of their holistic approach to patient care, women's health nurses need to be aware of the positive effects on health and social development that therapeutic horseback riding can bring to the treatment and rehabilitation process.


This paper reviews the literature on the benefits of therapeutic horseback riding and the outcomes of eleven data-based studies purporting to validate the claims that horseback riding offers therapeutic benefits. These studies have focused on physical and psychosocial variables. The literature on the benefits of riding reported obvious beneficial effects, while the outcome studies were able to document only some of these claims. The studies generally reported some significant effects from the therapeutic intervention. An examination of the outcome studies revealed weak scientific rigor, small sample sizes and a lack of homogeneous populations. Furthermore, use of standardised measures was limited as authors frequently relied on non-standardised observational techniques to evaluate change. This review indicates a need for further research into both the physical and psychosocial areas with both children and adults. In addition, there is a need for research which will improve the methodological rigor, homogeneity of populations, sample size and use of standardised measurement instruments.

*Hearing the voices of experienced equestrians with disabilities* (Unpublished thesis). Texas Woman’s University, Texas.

The purpose was to examine the personal meaning of equestrian sport participation to advanced level competitors with acquired disabilities, in relation to its impact on their lives as well as barriers and supports. The participants were eight equestrians, aged 38 to 56, (seven females, one male), who competed in dressage events against others with disabilities at a National Championship conducted primarily for able-bodied riders. Data were collected through participant-observation and semi-structured interviews, interpreted by qualitative methodology based on constructivist grounded theory (Glaser, 1994) and checked for truth value and theoretical sensitivity. Four themes emerged: (a) constructing equestrian identity, (b) engaging in equestrian sport, (c) becoming one with a horse, and (d) deriving meaning. Both supports and barriers centered on the human-horse bond and the variables that increased or decreased communication and trust with the horse during competition.

McConnell, P.J. (2010)


Equine-facilitated psychotherapy (EFP), a new field in psychology, is an alternative method of therapy that uses horses to facilitate therapeutic outcomes. There is minimal peer reviewed literature and few published studies examining efficacy. The conceptual lens of this study was grounded theory, as there is insufficient evidence of theoretical frameworks guiding equine-assisted therapy. The purpose of this exploratory concurrent mixed methods study was to examine the theoretical foundation of practitioners, programme make up, client populations, efficacy of programme and why the horse serves as the therapeutic catalyst of this model. A 43-item survey was sent to 800 organisations, current members of the North American Riding for the Handicapped Association, Equine Assisted Learning and Growth Association and the Equine Facilitated Mental Health Association who use equine-assisted therapy. Twenty nine percent (n=232) of the surveys were returned. Chi square and cross tabulations were utilised to examine relationships between specific theoretical orientations of therapists and the therapeutic role served by the horses. Results illustrated that therapists who used experiential theory were more likely to use horses for development of confidence, development of self-efficacy, mirroring of behaviour and the manner in which the therapist treats the horse. Open coding of qualitative questions followed by axial coding into emergent themes were used to confirm and expand the quantitative results. Results illustrated the primary orientation within EFP was experiential theory; that horses were universally considered essential aspects of the programme because specific characteristics of the species facilitate key therapeutic processes. This study contributes to social change by providing the EFP field with a comprehensive analysis of current conceptual orientations and practice that can inform efforts to unify and extend this emerging therapy.


This qualitative study examined the stories of five 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. Selection criteria included age, experience of abuse, participation in EFP and ability to understand English. Data analysis identified four patterns in the participants’ stories: I can have power; doing it hands on; horses as co-therapists; and turning my life around. Overall, the participants’ stories show that EFP can be an effective intervention for women who have experienced abuse.


Hippotherapy refers to the use of the movement of the horse as a treatment tool by physical therapists, occupational therapists and speech-language therapists to address impairments, functional limitations and disabilities in clients with neuromusculoskeletal dysfunction, such as cerebral palsy. Hippotherapy is used as part of an integrated treatment programme to achieve functional outcomes. Hippotherapy engages the client in activities on the horse that are enjoyable and challenging. In the controlled hippotherapy environment, the therapist modifies the horse’s movement and carefully grades sensory input, establishing a foundation for improved neurologic function and sensory processing. This foundation can be generalised to a wide range of daily activities, making the horse a valuable therapeutic tool for rehabilitation.


Animal-assisted therapy (AAT) has been practised for many years and there is now increasing interest in demonstrating its efficacy through research. To date, no known quantitative review of AAT studies has been published; this study sought to fill this gap. A comprehensive search of articles reporting on AAT was conducted. The researchers reviewed 250 studies, 49 of which met inclusion criteria and were submitted to meta-analytic procedures. Overall, AAT was associated with moderate effect sizes in improving outcomes in four areas: autism-spectrum symptoms, medical difficulties, behavioural problems and emotional well-being. Contrary to expectations, characteristics of participants and studies did not produce differential outcomes. AAT shows promise as an additive to established interventions and future research should investigate the conditions under which AAT can be most helpful.


Therapeutic horseback riding (THR) is an adaptive sport that has received a great deal of attention recently for people with disabilities and, most recently, for military veterans with disabilities. Working collaboratively with equine partners and a therapeutic team, there have been anecdotal comments in the literature attesting to the therapeutic impact of this intervention for veterans. This exploratory study examined the impact of THR on five veterans who completed a North American Riding for the Handicapped (NARHA) Horses for Heroes programme. It was hypothesised that post-test scores on physical self-efficacy and self-esteem would increase from pre-test upon completion of an 11-week THR programme. Results supported the research hypotheses. Implications for future research and practice are examined.

Pauw, J. (2000)

Therapeutic horseback riding studies: Problems experienced by researchers. Physiotherapy, 86(10), 523-527.

Since the therapeutic use of horse riding has been realised, several research studies investigating the physical and psychosocial effect of therapeutic riding have been conducted. A summary is given of therapeutic riding research studies where formal statistical tests were used to analyse the data as well as a summary of studies where different techniques were used to process the data.

These summaries give an overview of the variables measured in previously conducted therapeutic riding studies. The general problems experienced by therapeutic riding researchers are given after the summaries. Possible explanations are discussed for some of these problems. In conclusion a few suggestions are given for future research, not only for therapeutic riding studies, but for any study where the effect of a therapeutic intervention is investigated.


Baccalaureate nursing students who participated in equine-facilitated psychotherapy (EFP) clinical observation found that they could benefit as much from the programme as the child clients. By identifying beneficial educational outcomes of this nontraditional learning assignment, the authors hope readers will explore similar possibilities for nurses at various stages of their professional development.


This paper charts the origins, history and development of therapeutic riding. The growth of the Riding for the Disabled Association in the UK is charted and placed in its international context. The clinical application of riding for disabled persons is discussed. Several case studies are examined including both physical and mental handicaps.

Scott, N. (2005)


A growing number of individuals with special needs are discovering the benefits of therapies and activities involving horse riding. Naomi Scott offers information about the amazing results possible with therapeutic riding, or hippotherapy.

Selby, A. (2009)


This systematic review examines the empirical literature in an emerging body of evidence for the effectiveness of psychosocial interventions involving equines across populations. Fourteen full reports in English were extracted from 103 studies accessed through sixteen electronic databases and a hand search. Selected quantitative studies were published in peer-reviewed journals; the gray literature and white papers were also explored. Population, Intervention, Comparison, and Outcome (PICO) and Grades of Recommendation, Assessment, Development, and Evaluation (GRADE) criteria were applied to all studies. Data were synthesised in relation to four research questions informing evidence-based practice. No randomised clinical trials were located. Two studies provided a moderate level of evidence for effectiveness. Nine studies demonstrated statistically significant positive effects. In the aggregate, the evidence is promising in support of the effectiveness of psychotherapy employing equines. Future studies are needed that utilise rigorous and creative designs, especially longitudinal studies and comparisons with established effective treatments.


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 analyses 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. As a contribution to methodology in future research, the conceptual analysis suggests that concurrent examination of complementary interventions across categories of special needs could add to the knowledge base concerning these children’s psychosocial status. Cross-domain investigations could also assess the contribution of each challenge to the status of children with multiple conditions.
Sudekum Trotter, K. (2011)

*Harnessing the power of equine-assisted counselling: Adding animal assisted therapy to your practice. New York, East Sussex: Routledge.*

This book will help licensed professional counsellors incorporate Equine-assisted Counselling (EAC) into their practices, even for those who have no prior experience working with horses. It provides a strong research foundation for understanding the efficacy of equine-assisted interventions and the potentially powerful impact that a horse can have in creating a new counselling dynamic. Chapters address using horses to help clients dealing with various traumas and abuse, anxiety, depression, atypical behaviours, social skills and communication issues. One chapter is written by the internationally renowned ‘horse whisperer’ Pat Parilli and offers a look at EAC from the horse’s point of view, describing the process of developing a relationship with the horse in a positive, safe and respectful manner. This is an important topic to ensure the well-being of the horse throughout a session. Counsellors will find this a valuable resource for understanding and utilising EAC as a new resource in their own practices, as will students seeking to learn about this innovative approach.


In a recent study, the U.S. Centre for Disease Control and Prevention suggests that six out of every 1,000 children have been diagnosed with a developmental disorder, such as autism (Bradley, 2007). The use of a single approach to treat children with autism and other developmental disabilities is inadequate (Sherer & Schreibman, 2005). Considering this finding, the aim of the current researcher was two-fold. First, a critical review of the current status of pet therapy and equine-assisted therapy is presented and the strengths and weaknesses of the extant literature are discussed. Second, the researcher sought to examine the potential treatment effects of equine-assisted therapy by examining individual case studies of three children. It was proposed that involvement in an equine-assisted therapy programme would produce decreased negative behaviours, increased adaptive skills and enhanced academic performance of the participants in the home and school environments. Parents and teachers of six students (three experimental, three control) with a developmental disability were asked to fill out measures of behaviour, adaptive skills, academic ability and client satisfaction at two points over the course of ten weeks. Due to the small sample size, general conclusions about the overall efficacy of equine-assisted therapy programmes could not be made. With regard to the current literature, the results showed that two children in the equine-assisted therapy group showed improvements on measures of social skills across parent and teacher measures. Children in the comparison group demonstrated gains on one measure of social skills according to teacher report. Parents reported no significant improvements on measures of social skills for children in the comparison condition. Despite the lack of empirical evidence to support or refute the use of equine-assisted therapy for children with developmental disabilities as an outgrowth of this project, there are implications for the domain of school psychology. This project presents a useful model for the school psychologist by which equine-assisted therapy and other alternative therapies can be evaluated.


Programmes offering horseback riding or other equine related experiences for children with disabilities are commonplace throughout the United States as well as other parts of the world. However, there is a dearth of research findings demonstrating the benefits of these programmes. Four Internet search engines were used to identify 115 websites associated with equine programmes that people with disabilities and their family members in the United States would likely encounter if searching the Web for information. Content analysis methodology was used to review websites for information related to programme characteristics and benefit claims. Findings are summarised and the importance of establishing the validity of benefit claims through means other than anecdotal and testimonial evidence is discussed.


Equestrian athletes have not been the topic of systematic study. There is a vast array of folklore and wisdom, lay study and practice at the grassroots level relating to the relationship of horse and rider. The field of therapeutic horseback riding primarily consists of examining the benefits of riding for the physically handicapped. There is also the relatively fledgling movement of equine-assisted psychotherapy that typically combines qualified therapists alongside qualified horse trainers. European study is more longstanding, extensive and includes exploration of the psychotherapeutic benefits of equine therapy. The smattering of work is grounded on the study of the equestrian athlete, the unique aspects of the horse-human relationship and how these animals serve in the healing of human minds, bodies and souls. Levinson (1982) called for both intuitive and scientific approaches to address how humans and animals interact. He called for further study addressing the effects of animals on the human psyche, human-animal communication and the therapeutic use of animals in formal psychotherapy. The Jewel Equestrian Scale was developed to further quantitative research while exploring the benefits and risks of equestrian activities. The impact of injury, the attraction to and fear of the horse, and the difference between performance anxiety and fear for one’s safety is also explored. To date, literature has addressed the computer-human interaction, and pet-human interaction. This study investigates the horse-human interaction.

Tyler, J.L. (1994)


Equine psychotherapy, which started in Europe, is a fledgling therapeutic resource for a very broad range of diagnoses. It is a powerfully effective tool in assisting clients who are fearful, anxious, depressed, angry, dissociative, or who have a variety of other emotional problems. Introducing therapeutic work with the horse to a client, who is accustomed to conventional ‘office therapy’ is, in itself, a change. Work with horses breaks through the client’s defensive barriers and requires the client to develop fresh insights and new perspectives from old relationship and behavioural patterns. Work with the horse requires cooperative, affective and behavioural consistency in clients who have learned a habit of thinking one way, feeling otherwise and behaving in a manner that may be totally unrelated to either. Therapists may not discern this important dissonance in the office, but the horse seems to sense the incongruity and display confusion until the client is internally consistent.


The benefits children with disabilities receive from participating in horseback riding programmes were examined from their parent’s perspective. Parents of children with various diagnoses and levels of impairment enrolled in a therapeutic riding programme or hippotherapy programme were surveyed. A questionnaire with both closed and open-ended questions, was designed by the researcher and sent to the homes of the parents. Sixty families participated in the study. Comparison of the families’ responses revealed that parents regard horseback riding as a positive experience to participate in for their children with disabilities. They note improvements in their children’s physical, cognitive, social and emotional skills. The questionnaire was highly useful and provided the opportunity to examine the impact of horseback riding from both an individual and occupational perspective.


In this day of high-tech, managed-care service delivery with an emphasis on medication and brief treatment, it is important for nurses to be aware of nontraditional treatment options that may be uniquely beneficial for some clients. Although it may still be considered a novelty, animals in the healing milieu is not a new idea. Florence Nightingale herself suggested that “a small pet animal is often an excellent companion for the sick, for long chronic cases especially” (Nightingale, 1969, 102). Healing, according to one recent nursing article, can be seen as “a gradual awakening to a deeper sense of the self (and of the self in relation to others) in a way that effects profound change” (Dorsey & Dorsey, 1998, 36). Equine-facilitated psychotherapy, while not a new idea, is a little-known experiential intervention that offers the opportunity to achieve this type of awakening. 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 findings.


The article gives an overview of the benefits of hippotherapy in patients with various conditions such as amputations, developmental delay, cerebral palsy, multiple sclerosis, cerebellar, dysfunction, traumatic brain injury and orthopaedic impairments.

Wingate, L. (1982)


The passage of Public Law 94-142, to alleviate the educational isolation of handicapped children, has resulted in some integration of handicapped children into community activities. Unfortunately, this integration is usually characterised by groups of handicapped people enjoying an activity together rather than with non-handicapped persons. Developing activities that can realistically effect integration is a challenge to both lay and professional people concerned with the quality of life for handicapped persons. Horseback riding is one activity that has been identified as possibly serving this purpose and has the additional benefit of being therapeutic.

Reports from England, Australia and the United States have demonstrated that in a well-planned and carefully controlled programme, horseback riding for the handicapped can provide a safe means of facilitating physical improvement in both minimally and extensively handicapped individuals.

Young, R. (2005)

_Horsemastership part 1: Therapeutic components and link to occupational therapy._ *International Journal of Therapy and Rehabilitation, 12*(2), 78-83.

Since mythology, the horse has been referred to as a healer and a helper of humans. Yet, it is only within the past 50 years that the horse has truly been recognised as having therapeutic value. Horse mastership, a generic term defined as ‘the care, maintenance and use of the horse in all pleasure and commercial activities’, has potential to be used as a therapeutic medium. Indeed, horse mastership is successfully used as a therapeutic medium for young adults (16-25 year olds) with additional needs at the Fortune Centre of Riding Therapy, a residential specialist college based in the New Forest. Despite this, however, the existing literature to support this specialist area is minimal. The first part of this article takes a comprehensive view of horsemastership by discussing all the distinct aspects that can be used as a treatment medium for people with additional needs. The skills and knowledge of the occupational therapist are also applied to highlight the potential involvement and role that the occupational therapy profession has to offer in this field.


The therapeutic benefits of the horse to humans have existed for years. Although early findings on the benefits of the horse as a therapeutic medium exist, the first scientific inquiry into the therapeutic usefulness of the horse did not take place until the mid-19th century. Even today, the literature existing on the benefits of horsemastership is lacking. In a previous article, the components of horsemastership were discussed from a therapeutic perspective and the skills and knowledge of the occupational therapist were applied to highlight the potential the occupational therapy profession has to offer this developing field. In this article, the benefits of horsemastership as a therapeutic medium will be discussed and related to the practice of the Fortune Centre of Riding Therapy. The contra-indications and precautions of horsemastership are also highlighted and discussed.

From leisure and disability to disability leisure: Developing data, definitions and discourses. *Disability and Society, 18*(7), 955-969. DOI: 10.1080/0968759032000127353

This is a study on the absence of disability research in leisure studies and leisure research in disability studies. Aitchison analyses the effects of these gaps and the role of policy making in these two areas, on social exclusion of people with disabilities and their access to sport and leisure.


A commentary in the special issue of the Disability and Health Journal on the amplified importance of sport for disabled people. The authors argue that due to the already challenging physical and emotional condition of persons with disabilities, the importance as well as the positive effect of physical activities, is amplified. Similarly they defend the thesis that lack of physical activity has more dramatic consequences for them and therefore should not be neglected.


The researchers at the Department of Kinesiology and Health Studies of Queen’s University in Canada measured the perceived level of competence for children with disabilities who are physically active. Surprisingly, physically active children with disabilities received the highest level of perceived competency even in comparison with other disabled or able-bodied children. Therefore, the authors suggest that physical activity can be used as a means to moderate or erase the stigma towards the children with disabilities.


An inclusive book on important features of rights of people with disabilities regarding inclusion and participation in society.

Campbell, P. J. (1993)


The author of this thesis bases arguments on observations made on a horse riding for disabled group in New Zealand. The researcher states that the elements of the relationship with the horse, the stimulating nature of the outdoor activities and the social connection between the people involved significantly contribute to the empowerment of the participants.

The University of New Brunswick, New Brunswick, Canada.

In this thesis the author studies the impact of horse riding on the image of disabled people society. The researcher has made observations and tried to communicate with disabled people and others involved in the riding activities. The researcher concludes that despite the fact that such institutions are usually founded for recreational purposes only, they do help the process of ‘delabelling’ and ‘relabelling’ of those with disabilities, showing them as more socially involved.


An interpretation of the Article 2 of ICCPR on non-discrimination. The Committee clarifies and exemplifies the concept of discrimination using the International Convention on the Elimination of All Forms of Racial Discrimination and the Convention on the Elimination of All Forms of Discrimination against Women. The importance of the General Comment, in the context of disability rights, is the point made by the Committee: “the enjoyment of rights and freedoms on an equal footing, however, does not mean identical treatment in every instance” and therefore “principle of equality sometimes requires States to take affirmative action in order to diminish or eliminate conditions which cause or help to perpetuate discrimination prohibited by the Covenant”. This interpretation seems to be in line with ideas presented by other scholars, commentators and bodies as to the positive responsibility of States in the equalisation of opportunities for persons with disabilities.


This General Comment underlines the importance of States’ negative and positive responsibilities in eradicating any disability-based discrimination. It emphasises the right of person with disabilities to access rehabilitation services and recreational activities.


While defining the scope of the Article 12 of the Convention, the Committee stresses the significance of equal and timely access to curative and rehabilitative health services for both physical and mental health problems.


In this General Comment the Committee addresses the principle of non-discrimination in general while naming disability as one of the non-acceptable grounds for discriminatory treatment. It also categorises the States’ responsibilities in making sure of equality for individuals.


In this paper Davis, an activist with spinal injury, studies the shift from the ‘caring and controlling tradition’ to empowering disabled people for active participation in society. The author emphasises the importance of disabled people’s efforts to take control of their lives in this regard.


_Human rights and disabled persons: Essays and relevant human rights instruments_.

The book consists of two main sections. The first part includes essays by authors on different aspects of disability. The second part is a compilation of all relevant international and significant regional instruments relating to disabled persons’ rights. The book is important as to its holistic approach to the instruments addressing disability rights leading to its uniqueness especially at the time of publication.

A study on the important factors in determining the quality of life of the children with disabilities. The authors gathered data from 1599 hospitalised children with disabilities. They conclude that socialisation plays the most significant role in quality of life of disabled children. Reference is made by the children to horseback riding as one of the sports they enjoyed.

---


This document recognises the principle of non-discrimination and asks for States to treat all individuals equally and provide for effective protection against any discrimination.

---


ICESCR names a set of rights known as the second generation of human rights and states that all individuals in a society should be entitled to them without any discrimination. It specifically highlights the right of everyone to ‘enjoyment of the highest attainable standard of physical and mental health’.

---

Lord, J. E., & Brown, R. (2011)


The authors discuss the reasonable accommodation of disabled persons in context of the UN disability convention and its optional protocol. They also present European Court of Human Rights’ case law on the topic. They advocate for the positive responsibility of States to reasonably accommodate disabled persons’ needs for equal realisation of their human rights under the UN’s legal framework on disability rights.

---

Rioux, M. H. (2011)

*Disability rights and change in a global perspective*. *Sport in Society: Cultures, Commerce, Media, Politics, 14*(9), 1094-1098.

Dr. Rioux argues that mentioning of the right to sport in the UN disability convention, has shifted the disability-based and charity-based approaches to a rights-based approach. The shift, he believes, has changed all the elements related to both disability-specific and mainstream sport for persons with disabilities.

---

Shapiro, R. D., & Martin, J. J. (2010)

*Athletic identity, affect, and peer relations in youth athletes with physical disabilities*. *Disability and Health Journal, 3*, 79-85.

The authors investigate the role of sport in the lives of disabled youth athletes. They conclude that friendships in and outside of disabled sport positively contributes to the private sense of identity of disabled youth athletes and their peer relations. However, they fail to address the effect of sport on the peer relations of disabled youth athletes with their non-disabled age group which is an important feature in their general well-being and sense of inclusion in the society.
Thompson, D., & Emira, M. (2011)
‘They say every child matters, but they don’t’: An investigation into parental and carer perceptions of access to leisure facilities and respite care for children and young people with Autistic Spectrum Disorder (ASD) or Attention Deficit, Hyperactivity Disorder (ADHD). *Disability and Society, 26*(1), 65-78.

A study on the important aspects of sport and leisure activities for children with disabilities which should be reconsidered by statutory bodies. The authors from the University of Wolverhampton in UK stress that when regulating the engagement in those activities, a balance should be sought in choosing between engagements in mainstream or specialist provision by families of disabled children.

Standard rules on equalization of opportunities for persons with disabilities, annexed to General Assembly resolution 48/96 of 20 December 1993.

Among many issues that the UN General Assembly considered in this Resolution, rehabilitation, the importance of its accessibility within local communities, and the obligation of the State in encouraging and supporting such initiatives are well addressed.


As the ultimate global response to the disability rights claims, this Convention addresses all the issues related to persons with disabilities. It accentuates the full inclusion of the disabled people in the society and their right to access services available to the public for an independent life. Its importance lies in the legal rights-based framework that it introduces to the disability rights discourse.


A collection of documents on formation of the UN Convention on the Rights of Persons with Disabilities and its Optional Protocol. The draft of the Convention, its travaux preparatoires, the suitable monitoring body and different governments’ approaches and ideas on the topic are presented. The first volume gives a good perspective on the history of creating international norms for realisation of disabled persons’ rights.

Wilhite, B., & Shank, J. (2009)


A study on the benefits of sports for persons with disabilities. The results are based on interviewing 12 disabled men and women involved in sport. The authors made observations and concluded that sport advances physical and mental health of the disabled persons as well as boosting their social connections.


UN General Assembly adopted this programme of action at the end of the International Year of the Disabled Persons. Taking a human rights perspective, it covers the issue of prevention, rehabilitation and equalisation of opportunities for persons with disabilities.
<table>
<thead>
<tr>
<th>Name</th>
<th>Page Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aardoom, A.</td>
<td>25</td>
</tr>
<tr>
<td>Adams, C.</td>
<td>32</td>
</tr>
<tr>
<td>Agi, I.F.</td>
<td>36</td>
</tr>
<tr>
<td>Aitchison, S.</td>
<td>43</td>
</tr>
<tr>
<td>All, A.C.</td>
<td>33</td>
</tr>
<tr>
<td>Allan D.E.</td>
<td>12, 36</td>
</tr>
<tr>
<td>Anderson, L. S.</td>
<td>43</td>
</tr>
<tr>
<td>Andrade, C.K.</td>
<td>12</td>
</tr>
<tr>
<td>Armstrong, B. D.</td>
<td>33</td>
</tr>
<tr>
<td>Asensio, Á.</td>
<td>9</td>
</tr>
<tr>
<td>Baceski, D.A.</td>
<td>6</td>
</tr>
<tr>
<td>Bachi, K.</td>
<td>25</td>
</tr>
<tr>
<td>Baker, L.</td>
<td>2</td>
</tr>
<tr>
<td>Barg, C. J.</td>
<td>43</td>
</tr>
<tr>
<td>Bass, M.M.</td>
<td>2</td>
</tr>
<tr>
<td>Baumberger, M.</td>
<td>11</td>
</tr>
<tr>
<td>Becker, C.</td>
<td>2</td>
</tr>
<tr>
<td>Beinotti, F.</td>
<td>2</td>
</tr>
<tr>
<td>Benda, W.</td>
<td>3, 13</td>
</tr>
<tr>
<td>Bennett, T.</td>
<td>20</td>
</tr>
<tr>
<td>Bertoti, D.B.</td>
<td>3</td>
</tr>
<tr>
<td>Biery, M.J.</td>
<td>3</td>
</tr>
<tr>
<td>Bivens, A.</td>
<td>22</td>
</tr>
<tr>
<td>Bizub, A.L.</td>
<td>18</td>
</tr>
<tr>
<td>Blanck, P. D.</td>
<td>43</td>
</tr>
<tr>
<td>Borges, G.</td>
<td>2</td>
</tr>
<tr>
<td>Bowers, M.J.</td>
<td>19, 25</td>
</tr>
<tr>
<td>Bracher, M. J.</td>
<td>33</td>
</tr>
<tr>
<td>Bradberry, J.</td>
<td>37, 39</td>
</tr>
<tr>
<td>Brandt, K. J.</td>
<td>33</td>
</tr>
<tr>
<td>Bresette, N.</td>
<td>35</td>
</tr>
<tr>
<td>Brewerton, K.</td>
<td>3</td>
</tr>
<tr>
<td>Bright Roberts, F.</td>
<td>37</td>
</tr>
<tr>
<td>Bronson C.</td>
<td>3</td>
</tr>
<tr>
<td>Brouillette, M.A.</td>
<td>26</td>
</tr>
<tr>
<td>Brown, R.</td>
<td>45</td>
</tr>
<tr>
<td>Bukowska-Johnson, G.</td>
<td>33</td>
</tr>
<tr>
<td>Burgon, H.</td>
<td>26, 34</td>
</tr>
<tr>
<td>Butler, S.</td>
<td>17</td>
</tr>
<tr>
<td>Cahill, S.M.</td>
<td>17</td>
</tr>
<tr>
<td>Campbell, K.A.</td>
<td>14</td>
</tr>
<tr>
<td>Campbell, P. J.</td>
<td>43</td>
</tr>
<tr>
<td>Cantin, A.</td>
<td>18</td>
</tr>
<tr>
<td>Cantril, C.A.</td>
<td>9</td>
</tr>
<tr>
<td>Cantu, C.O.</td>
<td>34</td>
</tr>
<tr>
<td>Casady, R.L.</td>
<td>4</td>
</tr>
<tr>
<td>Casas, R.</td>
<td>9</td>
</tr>
<tr>
<td>Casey, J.</td>
<td>32</td>
</tr>
<tr>
<td>Caspers, K.M.</td>
<td>14</td>
</tr>
<tr>
<td>Cawley, D.</td>
<td>26</td>
</tr>
<tr>
<td>Cerino, S.</td>
<td>18</td>
</tr>
<tr>
<td>Chalmers, D.</td>
<td>35</td>
</tr>
<tr>
<td>Chandler, C.</td>
<td>32</td>
</tr>
<tr>
<td>Chandler, C.</td>
<td>4, 5</td>
</tr>
<tr>
<td>Chardonnens, E.</td>
<td>18</td>
</tr>
<tr>
<td>Chavdarov, I.</td>
<td>7</td>
</tr>
<tr>
<td>Chen, G.L.</td>
<td>18</td>
</tr>
<tr>
<td>Chiarotti, F.</td>
<td>18</td>
</tr>
<tr>
<td>Christofoletti, G.</td>
<td>2</td>
</tr>
<tr>
<td>Cittadaloni, E.</td>
<td>14</td>
</tr>
<tr>
<td>Cintas, H.L.</td>
<td>12</td>
</tr>
<tr>
<td>Cirulli, F.</td>
<td>18</td>
</tr>
<tr>
<td>Ciukay, M.D.</td>
<td>17</td>
</tr>
<tr>
<td>Clark, M.D.</td>
<td>28</td>
</tr>
<tr>
<td>Coady, N.</td>
<td>32</td>
</tr>
<tr>
<td>Correia, N.</td>
<td>2</td>
</tr>
<tr>
<td>Corring, D.</td>
<td>19</td>
</tr>
<tr>
<td>Crane, L. E.</td>
<td>33</td>
</tr>
<tr>
<td>Cuffari, M.</td>
<td>26</td>
</tr>
<tr>
<td>Cumella, E. L.</td>
<td>34</td>
</tr>
<tr>
<td>Davidson, L.</td>
<td>18</td>
</tr>
<tr>
<td>Davies, B.</td>
<td>4</td>
</tr>
<tr>
<td>Davis, E.</td>
<td>4</td>
</tr>
<tr>
<td>Davis, K.</td>
<td>44</td>
</tr>
<tr>
<td>De Villiers, J.</td>
<td>5</td>
</tr>
<tr>
<td>Debuse, D.</td>
<td>4, 5</td>
</tr>
<tr>
<td>Degener, T.</td>
<td>44</td>
</tr>
<tr>
<td>Dell, C.A.</td>
<td>35</td>
</tr>
<tr>
<td>Dell, D.</td>
<td>35</td>
</tr>
<tr>
<td>Dirienzo, L.N.</td>
<td>6</td>
</tr>
<tr>
<td>Dobson, F.</td>
<td>4</td>
</tr>
<tr>
<td>Docheva, N.</td>
<td>7</td>
</tr>
<tr>
<td>Duchowny, C.A.</td>
<td>2</td>
</tr>
<tr>
<td>Duncan, B.R.</td>
<td>13</td>
</tr>
<tr>
<td>Dvorakova, T.</td>
<td>10</td>
</tr>
<tr>
<td>Elfmark, M.</td>
<td>10</td>
</tr>
<tr>
<td>Emira, M.</td>
<td>46</td>
</tr>
<tr>
<td>Encheff, J.L.</td>
<td>6</td>
</tr>
<tr>
<td>Engsberg J.R.</td>
<td>14</td>
</tr>
<tr>
<td>Esbjorn, R.J.</td>
<td>35</td>
</tr>
<tr>
<td>Ewing, C.A.</td>
<td>19</td>
</tr>
<tr>
<td>Farrington, T.</td>
<td>20</td>
</tr>
<tr>
<td>Faulkner, P.</td>
<td>41</td>
</tr>
<tr>
<td>Feldhaus, S.</td>
<td>11</td>
</tr>
<tr>
<td>Foley, A.J.</td>
<td>27</td>
</tr>
<tr>
<td>Forsberg, A.</td>
<td>9</td>
</tr>
<tr>
<td>Frame, D.L.</td>
<td>19</td>
</tr>
<tr>
<td>France, A.P.</td>
<td>16</td>
</tr>
<tr>
<td>Francis, B.A.A.</td>
<td>6</td>
</tr>
<tr>
<td>Frewin, K.</td>
<td>19</td>
</tr>
<tr>
<td>Frost, C. J.</td>
<td>45</td>
</tr>
<tr>
<td>Froug, R.</td>
<td>20</td>
</tr>
<tr>
<td>García, E.</td>
<td>9</td>
</tr>
<tr>
<td>Gardiner, B.</td>
<td>19</td>
</tr>
<tr>
<td>Gasiorowska, B.</td>
<td>27</td>
</tr>
<tr>
<td>Gehman, M.</td>
<td>17</td>
</tr>
<tr>
<td>Genccheva, N.</td>
<td>7</td>
</tr>
<tr>
<td>Gibb, C.</td>
<td>4</td>
</tr>
<tr>
<td>Giuliani, C.</td>
<td>8</td>
</tr>
<tr>
<td>Glazer, H.R.</td>
<td>28</td>
</tr>
<tr>
<td>Gleason, J.</td>
<td>13</td>
</tr>
<tr>
<td>Gómez-Trullén, E.M.</td>
<td>9</td>
</tr>
<tr>
<td>Goodwin-Bond, D.</td>
<td>32</td>
</tr>
<tr>
<td>Graham, H. K.</td>
<td>4</td>
</tr>
<tr>
<td>Graham, J. R.</td>
<td>20</td>
</tr>
<tr>
<td>Granados, A.C.</td>
<td>36</td>
</tr>
<tr>
<td>Grant, K.L.</td>
<td>3</td>
</tr>
<tr>
<td>Gray, A.C.</td>
<td>7</td>
</tr>
<tr>
<td>Greenwald, A.J.</td>
<td>28</td>
</tr>
<tr>
<td>Gregory, S.L.</td>
<td>7</td>
</tr>
<tr>
<td>Grobler, R.</td>
<td>20</td>
</tr>
<tr>
<td>Gudmundsen, L.</td>
<td>11</td>
</tr>
<tr>
<td>Günter, P.</td>
<td>7</td>
</tr>
<tr>
<td>Gustavson-Dufour, J.</td>
<td>36</td>
</tr>
<tr>
<td>Gutierrez, K.M.</td>
<td>12</td>
</tr>
<tr>
<td>Haehl, V.</td>
<td>8</td>
</tr>
<tr>
<td>Håkanson, M.</td>
<td>8</td>
</tr>
<tr>
<td>Hamill, D.</td>
<td>8</td>
</tr>
<tr>
<td>Hammer, A.</td>
<td>9</td>
</tr>
<tr>
<td>Hayashi, R.</td>
<td>4</td>
</tr>
<tr>
<td>Hayden, A.J.</td>
<td>28</td>
</tr>
<tr>
<td>Haylock, P.J.</td>
<td>9</td>
</tr>
<tr>
<td>Hegemann, D.</td>
<td>11</td>
</tr>
<tr>
<td>Hegemann, D.</td>
<td>11</td>
</tr>
<tr>
<td>Heine, B.</td>
<td>4</td>
</tr>
<tr>
<td>Held, C.A.</td>
<td>21</td>
</tr>
<tr>
<td>Heleski, C.R.</td>
<td>29</td>
</tr>
<tr>
<td>Hemenway, R.</td>
<td>21</td>
</tr>
<tr>
<td>Herrero, P.</td>
<td>9</td>
</tr>
<tr>
<td>Hetz, S.</td>
<td>43</td>
</tr>
<tr>
<td>Heyne, L. A.</td>
<td>43</td>
</tr>
<tr>
<td>Hopkins, C.</td>
<td>35</td>
</tr>
<tr>
<td>Iacobucci, V.</td>
<td>40</td>
</tr>
<tr>
<td>Iannone, V. N.</td>
<td>29</td>
</tr>
<tr>
<td>Ibarz, A.</td>
<td>9</td>
</tr>
<tr>
<td>Ionatamishvili, N.I.</td>
<td>10</td>
</tr>
<tr>
<td>Ishida, K.</td>
<td>10, 34</td>
</tr>
<tr>
<td>Janura, M.</td>
<td>10</td>
</tr>
<tr>
<td>Joy, A.</td>
<td>18</td>
</tr>
<tr>
<td>Kahn-D’Angelo, L.</td>
<td>13</td>
</tr>
<tr>
<td>Kaiser, L.</td>
<td>29</td>
</tr>
<tr>
<td>Kakebeeke, T.H.</td>
<td>11</td>
</tr>
<tr>
<td>Kalley, L.P.</td>
<td>10</td>
</tr>
<tr>
<td>Kammann, C.</td>
<td>15</td>
</tr>
<tr>
<td>Karol, J.</td>
<td>22</td>
</tr>
<tr>
<td>Kauffman, N.</td>
<td>3</td>
</tr>
<tr>
<td>Kawata, K.</td>
<td>34</td>
</tr>
<tr>
<td>Kendall, K.</td>
<td>17</td>
</tr>
<tr>
<td>Kesner, A.</td>
<td>30</td>
</tr>
<tr>
<td>Kielhofner, G.</td>
<td>17</td>
</tr>
<tr>
<td>Killian, C.B.</td>
<td>15</td>
</tr>
<tr>
<td>Kimura, T.</td>
<td>10, 34</td>
</tr>
<tr>
<td>Kirby, M.</td>
<td>22</td>
</tr>
<tr>
<td>Kiriakova, M.</td>
<td>7</td>
</tr>
<tr>
<td>Kirk, L.</td>
<td>30</td>
</tr>
<tr>
<td>Kitagawa, T.</td>
<td>10</td>
</tr>
<tr>
<td>Klontz, B.T.</td>
<td>22</td>
</tr>
<tr>
<td>Klontz, T.</td>
<td>22</td>
</tr>
<tr>
<td>Knecht, H.</td>
<td>11</td>
</tr>
<tr>
<td>Knox, M.</td>
<td>22</td>
</tr>
<tr>
<td>Koch, L. F.</td>
<td>30</td>
</tr>
<tr>
<td>Kooster-Dreese, Y.</td>
<td>44</td>
</tr>
<tr>
<td>Korner-Bitsensky, N.</td>
<td>15</td>
</tr>
<tr>
<td>Kuczynski, M.</td>
<td>11</td>
</tr>
<tr>
<td>Laliberte, D.</td>
<td>12, 36</td>
</tr>
<tr>
<td>Lariviere, J.</td>
<td>12, 36</td>
</tr>
<tr>
<td>Latimer, A. E.</td>
<td>43</td>
</tr>
<tr>
<td>Lavergne, A.G.</td>
<td>29</td>
</tr>
<tr>
<td>Lechner, H.E.</td>
<td>11</td>
</tr>
<tr>
<td>Leinart, D.</td>
<td>22</td>
</tr>
<tr>
<td>Lemon, B.</td>
<td>36</td>
</tr>
<tr>
<td>Lentini, J.</td>
<td>22</td>
</tr>
<tr>
<td>Lessick, M.</td>
<td>36</td>
</tr>
<tr>
<td>Lewis, C.</td>
<td>8</td>
</tr>
<tr>
<td>Lindström, L.</td>
<td>8</td>
</tr>
<tr>
<td>Liabre, M.M.</td>
<td>2</td>
</tr>
<tr>
<td>Long, T.M.</td>
<td>15</td>
</tr>
<tr>
<td>Lord, J. E.</td>
<td>45</td>
</tr>
<tr>
<td>Loriya, M.S.</td>
<td>10</td>
</tr>
<tr>
<td>Loving, G.C.</td>
<td>33</td>
</tr>
<tr>
<td>Lundahl, B.</td>
<td>38</td>
</tr>
<tr>
<td>Lundberg, E.</td>
<td>19</td>
</tr>
<tr>
<td>Lutter, C. B.</td>
<td>23</td>
</tr>
<tr>
<td>Macauley, B.L.</td>
<td>12</td>
</tr>
<tr>
<td>MacDonald, P.J.</td>
<td>19</td>
</tr>
<tr>
<td>MacDonald, P.M.</td>
<td>25</td>
</tr>
<tr>
<td>MacKinnon, J.R.</td>
<td>12, 36</td>
</tr>
<tr>
<td>MacKinnon, T.</td>
<td>35</td>
</tr>
<tr>
<td>MacPhail, A.</td>
<td>12</td>
</tr>
</tbody>
</table>
Riding for the Disabled Wellington Group
P O Box 50-750 | Porirua
New Zealand

www.rda.org.nz