

HETI 2021  Widen the Spectrum  
SEOUL

ABSTRACT BOOK



**The 17th International Congress**  
Federation of Horses in Education and Therapy International

**HETI 2021**  **Widen the Spectrum**  
**SEOUL**

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# PLENARY SESSION



PI-1

## Diversification to Meet the Needs of the World

Margaret MANSFIELD, MS, MS OTR/L

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Maintaining health through the past year has forced the world's population to take an active role in their own well-being and the well-being of their community. We all have needed to assess information and data from experts around the world who have provided insight into maintaining wellness. We have navigated these waters and moved with the changing currents to address the possibilities for the future.

Equine assisted service programs have had to evaluate, assess, adapt and in some cases restructure. Programs continue to look for ways to meet their client and equine needs most effectively and efficiently. Due to the pandemic, provision of services changed and populations in some cases shifted. Some programs may never return to their previous offering and others gained new tools. Luckily, people and professionals in this industry are endlessly motivated and creative. Due to the catalyst of the COVID pandemic and the many restrictions imposed, there has been great innovation. The industry did not stand still; programs quickly adapted and met the needs of participants in new ways with farm drive throughs, virtual sessions, and one on one lessons with caregiver support. New populations are being served including first responders, caregivers, and medical providers and they are benefitting from interaction with a horse.

The pandemic has brought us closer together by encouraging us to reach out to our own community of professionals for support. Communities and groups have popped up and flourished in the virtual spaces among professionals of all backgrounds. Knowledge and ideas were shared and freely accessed. Collaborations on the international level have connected communities of learners and professionals. The HETI planning committee has had the foresight to be able to manage the everchanging requirements and mandates, moving from in person to hybrid while opening the conference on the international stage. While our methods of communication have limited us at times, virtual platforms have broadened our ability to connect with those from around the world. By speaking to those who may have

seemed out of reach previously, we all have benefited from insight and perspectives outside our own.

As a professor at a college that is preparing students to become the professionals of the future, we hope to instill good insight, a dash of problem solving, common sense and a touch of wonder to keep exploring what is still to come. In a pandemic they have learned to navigate much more than students who have come before them: preparing virtual lessons for Veterans in a VA hospital, managing masks and weekly testing to keep needed equine assisted services in place, and videoing certification lessons.

As an Occupational Therapist, I try to look at things holistically. Even as we emerge from some of the toughest times most programs have ever experienced, I am energized at the many examples of resilience and innovation that has moved our field forward. We are working to put the welfare of horses and people first. This keynote will be a snapshot of the new normal and the many diversified offerings that change has brought about in the field of equine assisted services.

PI-2

## Step Forward to Evidence Based Practice

Debbie SILKWOOD-SHERER, PT, DHSc, HPCS

Chair and Professor, Department of Physical Therapy,  
Central Michigan University, Mt. Pleasant, MI 48859, United States

This session will cover the concept of Evidence Based Practice and its general effects on therapists' treatment decisions. The presentation will provide a broad historical overview of the recent growth of evidence regarding the effectiveness of hippotherapy as a treatment tool for persons with impairments and disability. Further, the presenter will demonstrate how, through research and her personal experiences, this evidence has impacted the acceptance of hippotherapy as a treatment option into the practice of physical therapy, occupational therapy and speech language pathology. Finally, the presenter will offer suggestions for a potential research path forward for both rehabilitation professionals and researchers. Although specific examples will be geared toward hippotherapy, concepts regarding evidence based research that will be shared in this presentation may be applicable to, and of interest to, mental health practitioners and therapeutic riding instructors.

## PII-1

# Never Too Old to Play – The Healing Power of Equine Assisted Play Therapy(™) with at Risk Youth

Tracie Jane FAA-THOMPSON

Turn About Pegasus & International Institute of Animal Assisted Play Therapy  
United Kingdom & USA.

This lecture will look at Equine Assisted Play Therapy (™)– full integration of Play Therapy with AAI, to enhance social education, physical and mental health and reduce anti-social behaviors through the use of play therapy for at risk Youth.

The impact of social isolation, social awkwardness, risk-taking and criminal offending behaviors are linked with specific AAPT interventions, which are effectively conducted with children, teens, adults, and in individual, family, and group formats.

The importance of playfulness in AAPT is highlighted for its role in facilitating engagement, emotional safety, affective expression, exploration, problem-solving, master, relationship building, safe risk-taking, self-responsibility, and self-efficacy.

AAPT models the humane treatment of animals as a metaphor for the mutually beneficial social relationship and emphasizes relationship development between child/ groups/ families and animal as a means of experimenting in a relationship which is honest and without guile as only animals can be.

Play and playfulness are essential ingredients of the interactions & the relationship.

If we feel emotionally safe we are free to be ourselves, relaxed, and able to take on new learnings.

We follow these guiding principles

Guiding principles 1

- Respect: equal for humans & animals
- Safety: physical & emotional for all
- Enjoyment: client & animal must enjoy it; either can opt out

- Acceptance: of client & animal for who they are

#### Guiding principles 2

- Training: nonaversive, positive, relationship-centered
- Relationship: relationship, not control; recognition & consideration of animal's point of view, too
- Process: process-oriented therapy, but with general and specific goals

#### Guiding principles 3

- Foundations: grounded in theory & accepted practice, proper training to ensure ethical and beneficial treatment for client & animal. Consistent with current knowledge/practice in
- Child/family development
- Clinical & psychoeducational intervention
- Play therapy
- Humane animal treatment

In summary Equine Assisted Play Therapy (™) can be both fun, filled with laughter, therapeutic AND effective ALL at the same time.



PII-2

## Equine Assisted Therapy for Patients with PTSD: Clinical and Neuroimaging Evidence

Yuval NERIA, PhD

Professor of Clinical Medical Psychology  
 Director, PTSD Treatment and Research Program  
 Director, Columbia-NYP Military Family Wellness Center  
 Department of Psychiatry and New York State Psychiatric Institute  
 Columbia University Irving Medical Center

Posttraumatic stress disorder (PTSD) is a prevalent and highly debilitating disorder, impairing social, occupational, and other important areas of functioning. Despite the development of several psychotherapies and pharmacotherapies for PTSD, research has shown that more than one-third of treated PTSD patients never remit. Many others avoid or reject treatment altogether. Military veterans have shown even weaker treatment effectiveness, higher dropout rates and are frequently critical of current treatment approaches.

As many patients with PTSD avoid or proven refractory to standard treatments, a host of complementary and alternative PTSD treatments have arisen and spread widely. One such treatment, equine-assisted therapy (EAT), is being increasingly used for a wide range of physical and mental health conditions, including but not limited to, PTSD. EAT enthusiasts believe that horse-human interaction experiences during therapy can potentially foster emotional and behavioral changes in patients, as these interactions offer a platform for eliciting thoughts, feelings, and behaviors related to patients' lives outside the treatment. Furthermore, horses are especially advantageous for this process as they are naturally hypervigilant and highly sensitive to verbal and nonverbal cues, potentially providing patients with immediate feedback during horse-human interactions, which, in turn, enable patients and their therapists ample opportunities to enhance emotional awareness, reflection, and attunement to thoughts, behaviors, and patterns of communication.

While gaining popularity and exuberant proponents over the years, there have been

no comprehensive treatment manuals of how to deliver EAT, nor has there been sufficient safety, feasibility, and efficacy research of EAT. To address this gap, our group at Columbia University Irving Medical Center in New York (<https://www.columbiapsychiatry.org/research-clinics/ptsd-research-and-treatment-program>), has recently developed and manualized a group EAT for PTSD (EAT-PTSD) comprising eight 90-minute weekly group sessions and then evaluated its safety, acceptability and efficacy. In addition, we have conducted a multimodal brain imaging study to examine whether EAT-PTSD is associated with beneficial brain changes over the course of the treatment. I will review progress and barriers in treatment development for PTSD, discuss promise and limitations of previous EAT research, and present clinical and neuroimaging findings from our EAT studies. Future directions in the field will be discussed.

PIII-1

## Linking Horse and Human Brains

Janet L. JONES, PhD

Author of Horse Brain, Human Brain

Brainworks LLC, USA

Horses have a remarkable ability to aid human therapy. Lay people often assume this is because therapy horses endure years of specialized training to do their work. In fact, good equine-assisted therapy doesn't require a unique individual animal, nor does it demand extended periods of education for the horse. Beyond a calm temperament and positive experience in the human world, all that's required is an equine brain.

With background as a brain scientist and a horse trainer, I have developed brain-based horsemanship over many years. This work is described in my book Horse Brain, Human Brain, which was published in English in June 2020 and is being translated into five foreign languages at this time. Because all horses have brains, my approach to training horses and their handlers can be used effectively in all breeds and equestrian disciplines. Doing so increases safety, improves performance, speeds training, protects equine welfare, encourages mutual trust, develops brain-to-brain communication between prey and predator species, and creates stronger horse-and-human teams. It also explains why so many equines are perfectly suited to support human therapy.

What is it about their brains that makes horses so good at equine-assisted therapy for humans? In this presentation, I'll introduce some of the reasons:

- Horses have no prefrontal cortex and therefore cannot judge their human handlers
- Horse-and-human communication depends on nonverbal body language
- Horses learn and respond quickly in "pure" form with little emotional baggage
- Horses have little to no categorical perception and therefore notice small

details

- The horse's primary emotion is fear, as is common to wounded human psyches
- Methods that calm equine fear also help control human fear
- Successful horse-and-human interaction requires mutual trust built over time
- Horses' size and power requires humans to abandon techniques involving force

During the talk, I'll explain how each of these items affects human wellness and aids in many types of therapeutic intervention. I look forward to seeing all of you there! In the meantime, you can learn more at [www.janet-jones.com](http://www.janet-jones.com).

## PIII-2

### One Health as Framework for Animal Assisted Interventions

Karin HEDIGER<sup>1,2,3</sup>

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In the last few years, One Health has become an important framework for animal-assisted interventions (AAI) and awareness regarding the animal's health and welfare within these interventions is growing. One Health recognizes the inextricable linkage of humans, animals and their environment and is defined as any added value in terms of human and animal health and wellbeing. Thus, from a One Health perspective, ethically justifiable AAI should generate an added value in health and wellbeing for humans as well as animals and avoid any suffering in both.

Although the animal is an essential part of this intervention, the body of research looking at the effects on the animal is scarce compared to research investigating effects on clients. In this talk, I will give an overview of the current research addressing these effects on animals involved in AAI. The main focus lies on horses but I will also include results from studies with different species and compare it. Finally, I will discuss implications for practice and propose a One Health research framework for future AAI research to ensure that the interdependencies between human and animal health are taken into account. Future research addressing animals should not only focus on stress reduction but also on positive welfare indicators to identify conditions that might provide benefits to animals participating in AAI (Hediger et al., 2019).

PIII-3

## Scientific Frameworks to Guide Welfare, Training, and Handling of Horses in Therapy and Education Services

Nina Ekhoim FRY

Institute for Human-Animal Connection  
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USA

Practitioners who include horses in therapy and education services, or who provide adaptive riding lessons, have a professional responsibility to use best available, scientific information to guide understanding of equine welfare and the training and handling of horses. While not all of these services constitute healthcare, the concept of evidence-based practice, used in human medicine, can serve as a helpful reminder to allow scientific information to inform decisions in these areas. There are, at times, conflicts between common practices in the general horse sector and practices arising from the scientific study of welfare and equine behavior. Those providing professional services where horse interactions are incorporated must choose scientific information about horses to inform their actions. This in order to safeguard both participants and horses in their services. Multiple frameworks exist to assist practitioners in ethical and efficient decision-making about behavioral issues that may arise during therapeutic or educational sessions, and for equine welfare in general. In this presentation, recent welfare guidelines from HETI and IAHAIO will be discussed, along with useful frameworks from equitation science and science-based animal training approaches for formulating ethical plans of action for handling and training of horses in therapy and education services.

# SYMPOSIA SESSION



SYI-1

## What's in a Name? Sociological Insights on Creating and Unifying Terminologies

Jérôme MICHALON

Sociologist at French National Centre for Scientific Research, currently working at the Triangle laboratory (UMR 5206 – University of Lyon)

When one tries to account for what animal-including care practices are, the first difficulty is to find the right words. Journalists experience this quite often when they use terms such as « animal therapy », « animal-assisted therapy », « animal assisted activities », « zootherapy », « animal mediation » (in France), « hippotherapy », « therapeutic riding », as if they were the same exact practices. For an outside observer, the profusion of terminology can be very confusing. However, this diversity in terminology reflects the complicated history of including animals in care practices. Since the 1960s, these practices have attempted to adopt specific names, reflecting the desire to create a particular professional identity. An identity that would reflect both a way of conceiving human care and a way of conceiving the specific role of animals in this process.

In my doctoral dissertation in sociology (Michalon, 2014), I traced the history of animal-including care practices and tried to understand how these practices reflected a profound change in human-animal relations. I analyzed the emergence of such practices as a social endeavor to legitimate marginalized ways to interact with animals, because they demonstrate that caring and personalized relationships with animals can have a positive and lasting effect on human health. Here, health is seen as a strategic tool to provide legitimacy to new ways of seeing animals, valuing them and interacting with them. I tried to grasp the social construction of animals as persons and the social dynamics of the benevolence towards animals, and what part played animal-including care practices in that process.

Looking at the evolution of the distinctive terminologies proposed to designate these practices is a good way to account for these social dynamics. In this lecture, I will describe this evolution in the two social universes: the anthropocanine universe and the anthropoequin universe. Dogs and horses are indeed the species most used in



animal-including care practices. Focusing on the Anglo-American world, France and Europe, I will describe a similar process: the more animals are involved in practices labeled as “therapy”, the more they are seen as unique, singular beings, the more their personhood is acknowledged and valued. Each creation of a new terminology thus corresponds to a new stage in the joint affirmation of a new form of care for humans and a new relationship with animals, which both value personhood (human and animal).

Then I will address the relationships between the anthropocanine universe and the anthropoequine universe, as an example of how the desire to unify terminologies sometimes comes from actors "peripheral" to the group of practitioners and only partially meets their professionalization needs. I will explore how the pet industry leadership has led to defining dog-including care practices as "standards" applicable to other species, including horses. This is best illustrated by the fact that practices involving dogs are generically referred to as including "animals", without mentioning the species; whereas practices including horses always mention the equine species in their terminology. In this case, the unification of terminology could thus be interpreted as a vector of "caninization" of human-animal relationships. Without denying the interest that practitioners may have in unifying their terminology, the question that must be asked is: who drives the unification and who benefits the most from it?

Some elements addressed in the lecture are available in a recent paper : <https://www.depauw.edu/humanimalia/issue%2022/michalon.html>

## SYI-2

### HETI Terminology

Sanna MATTILA-RAUTIAINEN, Karina ARRIETA\*, Roisin BRENNAN, Nicolas EMOND, Maïke SCHUBERT, Yulia SLEPCHENKO, Alexia STERGIU, Gabriela VOLPE

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**Background/Aims:** At HETI's 16th International congress through member feedback at the Open Forum and Education Round table that there is a pressing need for an International database of current terminology utilized as well as further clarity and understanding in current terms used.

**Methods:** In 2018–2021 HETI developed a taskforce that designed the questionnaire and helped to process the data in several linguistic and cultural groups. The main themes for the questionnaire were the following:

- 1) International Location
- 2) Education and Training Qualifications
- 3) Current terms utilized to describe the services you offer

**Results:** Since the beginning it has been clear that as a member organization HETI must hear the voice of the members and respect cultural differences. In order to support research and development of our services, we need to develop an understanding of terms used and hopefully develop a glossary of terms to categorize the services provided.

This will bring added value to gaining governmental support and hopes to add clarity for researchers around the world.

This work also aims to highlight both the commonalities and discrepancies in international terminology coupled with an overview of the expansive breadth of terms used worldwide in order to generate active reflection amongst practitioners around the world.

**Conclusions:** During the process of analyzing and classifying the information, we

realized the importance of the influence of the close link that exists between culture and language.

Thinking from the bases of neurobiological functioning that language is the structuring of thought and how one thinks naturally and spontaneously in his “mother” tongue not in another, even when we handle a good level of the other language.

To the difficulty of finding words or expressions that represent the same with respect to the use of the terminology applied in assisted therapy with equines in all its breadth and variability is added the subjectivity that is intrinsic in the cultural characteristics of the different regions of the world (and even in different regions within the same country) the languages and their possible variations at the time of translation. Even the subjectivity and personal experience and training of the person who translates and analyzes the information is another variable to take into account.

This aspect is an important point to consider since it could be taken into account as one more variable when classifying the terminology and when thinking very well if we really refer to the same things when we use this or that word. In the Forum we are presenting the findings.

SYI-3

## Optimal Terminology for Services in the US that Incorporate Horses to Benefit People: A Consensus Document

Kathy ALM\*

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**Background /Aims:** The purpose of this presentation is to present the process and findings for optimal terminology in the United States that incorporate horses and other equines to benefit people. This was a US based initiative to gain consensus among organizations and individuals involved in equine-assisted services regarding terms and definitions for the industry in order to address the serious problems in the U.S. that unclear and imprecise terminology has generated.

**Methods:** A diverse multidisciplinary consortium of individuals, including representatives of relevant national organizations, participated in an inclusive, systematic, and comprehensive 2-year consensus-building process. This process included a survey built upon existing published terminology, a professionally facilitated summit, and multiple revisions based on gathered feedback.

**Results:** The consensus-building process culminated in the identification of 12 specific services that relate to three broad areas of professional work: therapy, learning, and horsemanship. These results were endorsed by a large majority of the summit group as well as Boards of Directors of organizations involved in the industry. The final paper has been published in the Journal of Alternative and Complementary Medicine.

**Conclusions:** Terminology recommended for adoption in the U.S. clearly describes and distinguishes 12 distinct types of services. Terminology recommended for discontinuation was found to be ambiguous, misleading, no longer useful, or to have adversely affected stakeholders. It is hoped that all recommendations will prove useful and serve to enhance the professionalism and viability of specific identified services. It is also hoped that improved precision and clarity in terminology for naming specific services will advance their future scientific development and reliable

measurement of effectiveness. Not all terminology-related challenges were resolved, however, and new challenges will likely arise as services continue to evolve and diversify. In addition, the focus was for the U.S., as expanding it beyond that scope was not feasible at the time. Significant impacts, if any, of the terminology recommendations herein merit ongoing monitoring and the question of optimal terminology merits revisiting in the foreseeable future as well as future alignment with global terminology.

Keyword: Equine-assisted activities and therapies, Hippotherapy, Therapeutic riding

SYII-1

## Horse Riding Simulator with Virtual Reality for Rehabilitation of Children with Cerebral Palsy

Hyunjung CHANG

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Cerebral palsy (CP) is a group of non-progressive but not unchanging disorders of movement and posture due to an insult or anomaly of the developing brain. Children with CP frequently have muscle weakness, abnormal muscle tone, impaired motor control, and disequilibrium, which cause abnormal posturing and poor balance control.

The evidence has accumulated that equine-assisted activities and therapy (EAAT) improve motor performance, balance, and gait in children with CP. However, there are cases where access to EAAT is difficult, varying from region to region. In such cases, an alternative is needed, and horse-riding simulator (HRS) may be one of the answers. It is reported that HRS is less effective than EAAT. One possible reason is the different quality of sensory system stimulation, besides just using the actual horse. If HRS is combined with various postural challenges that can increase somatosensory stimulation, it is expected that similar effects to EAAT will be elicited.

Virtual reality (VR) is a technology that provides a sense of presence in a real environment with the help of 3D pictures and animations formed in a computer environment and enables the person to interact with the objects in that environment. VR use in physiotherapy and rehabilitation has increased significantly in the last ten years. VR provides an opportunity for active learning, intrigues and encourages the participant, and ensures motivation. It enables performing difficult movements in a secure environment. Therefore, VR could be used in combination with HRS to make children feel like they were riding on horses and to enhance the therapeutic effect of HRS by providing multiple directional challenges for them.

Based on the contents described above, HRS with VR was planned and developed, and then the study was conducted on the effect of HRS with VR. School-aged

children with CP, gross motor function classification system level I–IV were included in this study. They received the exercise on HRS equipped with a head–mounted display and controllers. Each session consisted of 30 minutes and was conducted twice a week for a total of 16 times. After the intervention, the participants showed improvement in balance, gross motor function, especially walking and running ability, and motor performance. Before and after the intervention, body composition analysis was performed using InBody. Body fat mass and percent body fat decreased, and fat–free mass and skeletal muscle mass increased after the intervention. No adverse events such as fall, VR sickness, or pain were observed. All children in the study were satisfied with the intervention.

In conclusion, HRS with VR may be suggested as an effective therapeutic approach for the rehabilitation of school–aged children with CP. The EAAT is the best intervention for promoting gross motor function of children with CP. However, a HSR with VR can be a good surrogate for EAAT when EAAT is not available.

SYII-2

## Rehabilitation and Therapy with Horses in Virtual Reality

Natasha SKULT

CEO & Creative Director of MiTale

PhD Candidate and teacher at Art History Department, University of Turku, Finland

Games allow us to explore both fictional and factual knowledge through immersive and emotionally engaging experiences as an act of interactive storytelling. For a designer, game is a way to interact and have dialogue with players – from getting players to understand the game to having them play the game in a way designer have intended them to do. Communication between designer and the player is one of the core elements of gameplay, which consists of conveying the information in more than one way. Unlike in other medium of creative industries – multiple elements convey the information to the viewer through visual and audio effects, emotion and anticipation of the performers, composition and dynamic point-of-views. In games, viewer is an active interactor with that environment, making impact through actions and received feedback from these actions. Therefore, composing a game as a medium of entertainment carries more depth in its dialogue with the audience/players. This is why game design approaches are widely utilized in other industries and professions besides the entertainment industry, allowing the individual approach and interpretation by each player to pursue own “journey”.

With aim to provide the best possible support in the modern society, there is growing need for utilizing diverse expertise, integrating the best practices from technological and humanitarian achievements, in a form of gamified solutions that enable inclusive content-sharing worldwide. Through gamification, we are able to merge the commercial games playability value and interactive storytelling practices with the specific needs of the professionals in their own fields, creating unique content for increasing engagement and motivations of the final users.

Development of virtual reality (VR) environments is great part of gaming technology evolution especially in its use outside of entertainment industry. It allows interactive simulations for learning and training practices while creating a safe space for individuals to explore and solve variety of challenges. Interacting with the virtual



world is memorable and intuitive with richness in movement. The game world now includes own view and body movement, just like in real life. In creating meaningful, immersive, and intuitive user experience in VR, one of the main focuses are on the player's ability to make meaningful choices. Enabling free body movement and gestures have huge importance in creating these choices, especially in cases of trauma, fear, and anxiety. Therefore, VR technology is widely used by professionals in education, healthcare, and therapy to support specific needs of each student/client based on unique set of challenges that one needs assistance with. Virtual therapy setup contains carefully designed practices and share of information which are given to the player in forms of visual, audio and interactive clues that pursue act of "discovery" which affects personal motivations.

In this paper I will focus on the opportunities for utilizing VR technology in creating horse therapy tool through interactive storytelling practices, providing a case study in which game design can be transformed to these new application areas for use by healthcare and wellbeing professionals. To pursue systematic changes in our society by creating safe, inclusive, and diverse environment for nurturing individuals' unique views, we must focus on the education and utilize diverse expertise that would challenge the direction of innovation towards the desired goal. This is how and why gamification design practices can provide the building blocks in achieving this goal.

Keyword: Virtual Reality, Gamification, Therapy, Interactive Storytelling, Immersive Technologies, Horse Therapy

## SYII-3

### Communication between Horses, Equestrians and Society

Minna PELTONEN

Specialist, Equestrian Federation of Finland

Equine trade operates as a part of society and thus arises the need to communicate within. There are three levels in which active communication is needed: first local, second other operators and institutions in the trade, and third the society outside the trade. Communication enables establishing and further developing the environment in which it is possible for the equine trade to share value with the society. Communication is the key to effective influencing.

In all communication apply the same rules and principles, public affairs not being exception. It is justified to argue, that the higher the level of operation, the greater the need to follow the principles and ethics of good communication. The principles come from the broadened emphasis of empathy, the willingness to try to see things from a point of view of a person, or a certain, identified stakeholder group. Common obstacle is to assume that the counterpart has the same knowledge on the subject than a specialist or an insider.

Empathy is about willingness to broaden the mind and thus be objective when looking at the equine trade, especially inside the trade. It is necessary to change the perspective when operating in different levels of influencing. A common, often unconscious obstacle in communication is being defensive. It often comes from fear and insecurity. In this context it is usually the fear of losing something we view as an advantage or established good. It is important to develop the skill to recognize this pattern of behavior to be able to step back from defensive subjectivity and step forward to constructive objectivity. Rather than hold on, prefer allowing development. This concerns also the networks we build: the need to include, not exclude. The principles of good communication are openness, respectfulness and constructiveness.

One of the most important actions is identifying key stakeholders. It is with the key stakeholders that a communication system is established to enable exchange of information. It is to be respected that communication is always a two-way street.

Although the matters discussed are of great importance, at the end of the day it is about people talking to people about the things that matter the most to them. That in itself is a solid foundation on which to build and a comforting thought.

Once the key stakeholders are identified, the next step is to develop a network. Usually there are several active networks between different operators. There usually is also a connection between the networks. This connection is important thus we need to be able to identify which network is the right one to further discuss the matter at hand. In public affairs, impacts and actions of a federation are on governance level.

Through regulations, rules and legislation comes the license to operate. The closer the activity is to the core, that being the local community, the more specific the subject and the more impact the action tends to have on the community. On the community level the results of influencing are more swift than on the governance level. Local activity, events and everyday action at the stables is in itself a form of influencing and as such a very important part of public affairs it being the most visible action in the community. On local level there are operators and participants. Customers and spectators take part on activities the different operators provide. It is the operators that establish the image of the trade. A local operator is always a representative of the whole equine trade. It is on the local level that the significance of positive image matters the most. It is also important to acknowledge that the image has to be equal to the actual activity. Thus it is utmost important to make sure that the quality of the action is of high standard including sustainability and responsibility. Every action is a piece of a bigger picture. The pieces move and every move impacts and changes the possible outcome.

Local actions help the work of a federation and vice versa. The federations need to be active, showing willingness to interact and take part in conversations and further establish the networks between the national federations and institutions.

Communication is about continuity, recognizing and finding unity, maintaining the connection and regularity. It is both formal and informal. Especially on a local level informality helps making the connections. There is always an interest that can be furthered with common actions. It is to understand that influencing is a work that is done together, a teamwork where teams are agile and versatile depending on the matter at hand, or the subject that needs to be issued. Maintaining the networks, it is easier to recognize whether the matter is to be discussed on a local, or on the federation level. Communication is a skill that enhances the ability to note issues

and make decisions on which would be the right operator to take action in the matter.

Networks can and should be further developed. A network keeps growing every time when we have the chance to include people into our activities. Probably the most important stakeholder group is the one that includes all the people who has had no contact or experience with a horse. It is with that part of the society that we insiders and experts have to be subtlest, discreet, open and constructive in communication. We are all in this together, facing the rapidly changing future. Through communication we make sure that the equine trade plays a positive part in this change.



# CLINIC TO ARENA SESSION



## CAI-1-1

# Equine-Assisted Activities and Therapies in Children with Cerebral Palsy

Jeongyi KWON

Sungkyunkwan University School of Medicine Department of Physical and Rehabilitation Medicine, Samsung Medical Center Korea, Korea

**Introduction:** This Clinic to Arena session for cerebral palsy(CP), specifically for clinic setting, will focus how to enroll the children with CP. We will discuss Indication and contraindication of equine assisted activities and therapies (EAAT), clinical outcome measures (gross motor function, gait, balance, cardiorespiratory function, attention etc.) in children with CP. Further effects of EAAT based on the cooperation with the Samsung Equestrian Team over the past 20 years.

### Main:

- EAAT Indication/contraindication
- Clinical outcome measures
- Evidence based review of EAAT based on our clinical trials

**Conclusion:** To run the EAAT program, it is important to build good relationships with your local arena. EAAT has been used to improve gross motor function, muscle asymmetry, posture, balance, gait, and cardiac autonomic function in children with CP. In addition, EAAT itself is a kind of participation-focused therapy and leisure activity.

## CAI-1-2

### Children with Cerebral Palsy in Equine Arena

Jungsoon SHIN

Korea Racing Authority, Korea

**Introduction:** This Clinic to Arena session for cerebral palsy, specifically for arena setting, will focus how the ‘classes’ for the children with cerebral palsy had run with insights from our team, including medical doctor, physical therapist, and riding instructor, and also family members of the children. Our center has been running the program since 2001, and has been modifying the program to be beneficial to whom those who get on a horse/ pony. Because of the language differences, our program can be translated into the similar work as “therapeutic riding” or “equine assisted activities” and “hippotherapy” or “equine assisted therapy”. The program how we came up will be covered in depth in the session.

#### Main:

- Processes for program
- Assignment to the “Therapeutic riding” or “equine assisted activities” and “hippotherapy” or “equine assisted therapy”
- Children with Cerebral Palsy in riding setting

**Conclusion:** With many years of experiences, I came to conclusion that there aren’t the correct ways to do our works, but only the best trials to do for each one of the individuals on a horse/ pony

CAI-2-1

## Exercise-based Oncology Rehabilitation in Breast Cancer Survivors: Therapeutic Horseback Riding as an Option

Jihye HWANG

Samsung Medical Center/Sungkyunkwan University School of Medicine, Korea

Breast cancer is the most common female cancer in the world. Breast cancer patients have the unique characteristics than other cancer types because there are many different treatments for a long period of time. Research on exercise across the cancer care continuum underscores numerous recommendations for its integration into comprehensive disease-management strategies. Randomized controlled trials have strengthened the basis in efficacy data for exercise in oncology. Exercise provides a large volume of health benefits to patients during and after cancer treatment by reducing treatment-related symptoms, improving functional status and quality of life, and lowering the risk of disease recurrence. Although exercise is regarded as safe and beneficial for individuals with cancer, promoting exercise for this population is complex. A patient-centered pathway is needed that can guide oncology and care professionals in the efficient assessment of an individual's condition and enable personalized referrals for exercise interventions that promote physical activity. Therapeutic horseback riding is known to have the advantage of combining physical activities with psychological benefits. It has been reported that therapeutic horseback riding will significantly improve aerobic capacity, body composition, strength, and QoL. Although there are still many limitations, horseback riding can be one of the good exercise modes recommended for breast cancer patients.



## CAI-2-2

### Who Am I Now? – Using Equine Assisted Therapy to Heal the Emotional Wounds of Breast Cancer

Brenda TANNER

Equine Encounters Australia, Australia

The physical and psychological impacts of this life changing disease often leave sufferers with presentations of Post-Traumatic Stress Injury (PTSI), emotional withdrawal, anxiety and depression.

Brenda TANNER, Founder of Equine Encounters Australia (EEA) has developed an immersion-style, group program to help sufferers deal with the residual psychological and emotional wounds. The program is designed to offer participants the opportunity to explore their thoughts, behaviors and emotions without any external influences. Activities are carefully graded to disturb the homeostasis, developing the individuals' ability to remain regulated, whilst staying with the 'discomfort' of the unknown, whether emotional or situational.

Equine Assisted Activities Therapy isn't about training a horse or riding –It's a triangulated relationship which incorporates a qualified therapist, a horse(s) and the participant(s). Through a series of interactions and activities with the horse, the therapist supports the participant to slow-down, learn to recognize and reflect on their patterns of behavior, observe their thoughts and notice their somatic response. Part of the therapists' work is to help the participant create greater un-bias awareness and notice what's happening for them in the moment, by observing what's happening in the connection with their horse – literally, bringing their pre-frontal cortex on line and quietening the limbic response. External focus allows the participant to regulate and slow down to where they can separate 'what if's' from the 'what if it doesn't', which in turn allows choice. In the therapeutic context, horses can be used to allow the participant to project their emotions/feelings, or used as a metaphor to create situational or relational awareness – It's the work of the therapist to know how and when to use these different techniques.

EEA programs incorporate a number of therapeutic modalities into the Equine Assisted Activities; Relational Gestalt, Narrative Group work and Mindfulness.

CAII-1-1

## The Man o' War Project: Equine Assisted Therapy for PTSD

Yuval NERIA

Columbia University Medical Center, USA

Equine-assisted therapy (EAT) for post-traumatic stress disorder (PTSD) has attracted great interest despite lacking scientific evidence, a treatment manual, and a standardized protocol. Our group of experts in PTSD and EAT has developed an 8-session group EAT treatment protocol for PTSD (EAT-PTSD) and administered it to military veterans to assess therapeutic effects (see <https://mowproject.org> ; Arnon et al., 2020).

I will describe the development of a first of its kind treatment manual, which was applied to a sample of American veterans with PTSD. Protocol safety, feasibility, and acceptability were assessed by reported adverse events, treatment completion rates, and self-rated patient satisfaction. Data on PTSD, depressive, and anxiety symptoms and quality of life were collected pretreatment, midpoint, post-treatment, and at 3-month follow up. No adverse events were recorded. Most patients completed treatment, reporting high satisfaction. Our data also showed a significant decrease in clinician-assessed PTSD and depressive symptoms from pre to post-treatment and 3-month follow-up. Limitations and future directions will be discussed.

## CAII-1-2

### Clinic to Arena

Saebra PIPOLY

PATH Intl. Advanced TRI, CTRI, ESMHL, Mentor  
Associate Faculty for RTRI Workshop & Certification, USA

The second portion of Clinic to the Arena will be presented from a therapeutic horseback riding coach's perspective and will focus on lesson plan topics, skill progression, instruction theories, and mindset that will optimize the effectiveness of the coach's role in facilitating therapeutic horsemanship (groundwork and riding), Equine-Assisted Learning, and other Equine-Assisted Services (formerly EAAT).

Participating in activities with horses and experiencing the horse-human partnership can not only be a wonderful way for an individual to heal from past traumas but to also build resiliency and spark personal development that will positively impact their future. One's time and interaction in the arena or barn with a horse can have both immediate and lasting impact on their overall wellbeing and give them tools to face life with renewed strength and perspective.

Come discover tools and techniques that can be implemented while partnering with our wonderful equine co-workers to provide healing and decompressing activities that can bring normalcy and stability to the lives of those who have experienced multiple critical incidents, are battling PTSD, or are overcoming other traumatic experiences.

CAII-2-1

## Equine Assisted Training for Children with Attention Deficit Hyperactivity Disorder

Doughyun HAN

Chung Ang University Hospital, Korea

**Introduction:** Equine-assisted activity and training (EAAT) is known to improve the clinical symptoms in children with attention deficit hyperactivity disorder (ADHD). In addition, EAAT is also known to be associated with body balance and gait. We assessed the improvement of the clinical symptoms and gait balance in children with ADHD. In addition, we also found that the improvements of clinical symptoms would be associated with increased brain connectivity within gait balance circuit.

**Methods:** Twelve ADHD children and 12 age and sex matched healthy control children were recruited. In all children, clinical symptoms of ADHD were assessed with Korean ADHD rating scale and gait balance was assessed by the difference in the center of pressure (COP) as well as the difference in plantar pressure between the left and right foot during gait. All imaging data were acquired using a 3.0 Tesla Verio MRI scanner. Functional connectivity between the vermis of the cerebellum and all other regions of the brain was assessed. Horse riding training in current study was designed as a four week (3 times per week, 70 minute sessions).

**Results:** After four weeks' horse riding training, ADHD children showed improved K-ARS scores ( $z=3.18$ ,  $p<0.01$ ) while there were no changes in K-ARS scores in healthy children. Both ADHD children ( $z=2.84$ ,  $p<0.01$ ) and healthy children ( $z=3.02$ ,  $p<0.01$ ) showed improved depressive scores. During 4 weeks' horse riding training period, the difference of plantar pressure between left foot and right foot has been decreased in both healthy control group ( $z=2.24$ ,  $p=0.03$ ) and ADHD group ( $z=2.28$ ,  $p=0.02$ ). After four weeks horse riding training, healthy control children showed increased brain connectivity from cerebellum to left occipital lingual gyrus, fusiform gyrus, right and left thalamus, right caudate, right precentral gyrus, and right superior

frontal gyrus. However, ADHD children showed increased brain connectivity from cerebellum to right insular, right middle temporal gyrus, left superior temporal gyrus, and right precentral gyrus as well as decreased brain connectivity from cerebellum to left inferior frontal gyrus.

**Conclusion:** Horse riding training may improve clinical symptoms, gait balance, and brain connectivity which control gait balance in ADHD children. In ADHD children with deficit within fronto–cerebellar tract, the changes in brain connectivity would not be perfect as the changes in healthy children in response to horse riding training.

Keyword: Horse riding training, Gait balance, Brain connectivity, Attention deficit hyperactivity disorder

## CAII-2-2

### The Journey from School Exclusion to Acceptance at Equine College

Tracie FAA-THOMPSON

Turn About Pegasus, International Institute of Animal Assisted Play Therapy, UK

This case study will look at a 10 session family group equine assisted play therapy intervention with a 16-year-old girl with Tourette's syndrome.

It will detail the session content and rationales for the chosen treatment plan which was flexible due to the changing presenting needs of the family.

There are multiple issues within the extended family and there have been many interventions from Children and Adult Services over the years with limited success.

The family reached crisis point when the girl lost control of her Impulses which resulted in her being long term excluded from school.

As many of the children and young people we work with have intergenerational and interfamilial family problems we invariably work with the whole family to effect change.

So the focus is not on the youth as the issue and the 'problem'. we look at the whole system so it's a positive change effect model NOT a blame or scapegoating model.

Our philosophy is that if you are the only one that's expected to change and no one else does then change will not be sustained and problems may even get worse.

The sessions included girls mum, (she was a single parent) her grandmother and her step-grandfather.

Over the sessions, we focused through the voluntary involvement of the horses on the issues the family thought they needed to address.

The end result was that the family are now much more cohesive.

The girl is now a volunteer on our program. She is engaging in education and has been accepted into equine college to undergrad level due to begin September 2021.



# ORAL PRESENTATION



## OPI-1-1

Topic : **Business > Volunteer Management**

### An Introductory Survey of Volunteer Administrators in Equine Assisted Service (EAS) Organizations

Amy TRIPSON\*

246, HOPE, Horses Offering People Enrichment, USA

**Background / Aims:** Volunteer Administration is a relatively new industry, which when viewed specifically through the lens of Equine Assisted Services (EAS) showcases a unique role that has little information or data to support forward growth and evolution. One of the limitations is the lack of accepted standards of operation or recommended guidelines specific to the EAS industry with regards to Volunteer Administration. This survey aims to begin the process of data collection through which to provide guidance for the creation of EAS Volunteer Administration industry standards.

**Methods:** Through weekly meetings and discussions with volunteer administrators in the EAS industry, lists of common questions were generated and combined to form the basis of this first survey. The survey had 38 questions, containing a mix of questions which included structured and unstructured responses. The survey was proofed and trialed by industry colleagues and was launched through the PATH Intl. newsletter in January 2021 and subsequently shared on social media in an effort to increase the response rate.

**Results:** One of the goals of the survey was to collect generalized data such as the number of volunteer administrators, volunteers and participants at each center. The data collected is useful in starting to understand ratios which might inform best practices. With 61 respondents, the data also provided insight into Volunteer Administrator salaries, volunteer trainings offered and additional job duties that



volunteer administrators have. This information helps create an outline and overview of the guidelines for volunteer administrators in Equine Assisted Service (EAS) organizations.

**Conclusions:** This industry data while limited, provides a look into where additional data may lead to the development and creation of industry best practices and the management of volunteers and volunteer administrators at EAS facilities.

Keyword: Volunteer, Volunteer management , Volunteer administration

## OPI-1-2

Topic : **Business > Others**

### A Digital Knowledgebase for Equine Assisted Program Research – Is It Time?

Evelyn MCKELVIE\*

43, HHRF, Canada

**Background / Aims:** Through a series of meetings between HETI and HHRF (Horses and Humans Research Foundation) it has been recognized that there are very real barriers to advancing research in the field of equine assister programs and services that include having access to completed research. This lack of access to and awareness of existing research contributes to preventing or slowing the rate of progress when it comes to incorporating the fruits of research into equine programs.

We are investigating the possible models for knowledge sharing and will present our findings to the conference attendees. We will propose possible models for knowledge sharing and options to consider going forward.

**Methods:** Members of both HETI and HHRF are researching the area of digital repositories with the aim of presenting the findings to the membership of HETI for discussion, evaluation, and further action. We will also conduct a survey of HETI membership and HHRF supporters regarding their views on the nature and type of knowledgebase they would support.

**Results:** The outcome we look for will be to form an action committee composed of members of HETI and HHRF to determine the best model for a shared knowledgebase as well as the best business model to support such a repository going forward.

**Conclusions:** Filling the great gap in access to research results will

- Enable researchers and practitioners to build on the findings of existing research,
- Enable researchers to create larger scale projects with greater participant numbers,
- And will help to promote the ability to turn research results into knowledge that can be applied in programming across the world.

**Keyword:** Research, Knowledgebase, Collaboration

## OPI-1-3

Topic : **Business > Others**

# Analysis of The Therapy Equine Certification Program in The Czech Republic

Vladimíra CASKOVÁ\*, Iva JISKROVÁ

Equine Facilitated Therapy, Česká hiporehabilitační společnost, z.s. (The Czech Equine Facilitated Therapy Association – CEFTA), Czech

**Background / Aims:** This work aimed to analyze The Therapy Equine Certification Program (Program) of The Czech Equine Facilitated Therapy Association for equines and ponies enrolled in Equine Facilitated Therapy (EFT). The Therapy Equine Certification Program is the only requirement for adequate training, and personality profile for equines registered in Equine Facilitated Physical and Occupational Therapy (EFPOT) as well as Equine Facilitated Psychology and Equine Facilitated Learning (EFP/EFL). Only equines older than five years in the year of their certification can undergo the Program. The Program evaluates equine conformation, movement mechanics, specific factors, and acquired training suitability for clients. Every equine reaches the final number of points (on a scale of 1 to 10) for each factor.

For this analysis, we collected data on The Therapy Equine Certification Program results from the years 2011 – 2020. We hypothesized the following:

- 1.1. Type of the equine conformation affects its movement mechanics. The breed also determines movement mechanics.
- 1.2. EFPOT equines have more significant leg stride than EFP/EFL ones, and scapular position determines the leg stride.
- 1.3. Equines being prepared for EFP/EFL will reach higher marks for their ability to cooperate with a human than EFPOT equines.
- 1.4. Equine's age at the time of examination has an impact on the final mark. Equines older than 8 years will reach better results than younger ones (5–7 years).

**Methods:** Statistical data analysis was performed in UNISTAT 10 (Unistat Ltd., UK). We used a generalized linear model, Pearson correlation and corrected for multiple comparisons using Scheffle and Tukey–B post–hoc tests.

**Results:** Ad 1.1. We analyzed marks for type, an average of marks for conformation and marks for movement mechanics. The last ones were correlated with marks for length and shape of the back and loins. Adequacy of the equine conformation was described as a mean value of the equine linear description. As expected, marks reflected the type, average of marks for conformation and marks for movement mechanics correlated with the pedigree.

Ad 1.2. We also confirmed the effect of the scapular position on the results of the movement mechanics. Equines undergoing preparation for EFPO reached higher marks for the movement mechanics than equines enrolled on EFP/EFL.

Ad 1.3. Equine’s ability to cooperate with a human is key preparation for EFP/EFL. We assessed the difference between equines undergoing preparation for EFPO and EFP/EFL and found better ability in the latter group.

Ad 1.4. In line with our hypothesis, we showed that the equine's age has a significant effect on the examination results.

**Conclusions:** We can conclude that equines used for EFPO have better mechanics of movement than those enrolled in EFP/EFL. Conversely, equines enrolled in EFP/EFL reach higher scores inability to cooperating with human compared to those used in EFPO. Furthermore, we observed that equine conformation affects movement mechanics and that older equines reach better scores in the examination. Specifically, equines of 5 to 7 years had worse outcomes than those at the age of 8 years and older.

Keyword: Assessment of equine readiness, Equine movement mechanics, Personality– character

## OPI-2-1

Topic : **Disabilities > Cerebral Palsy**

### The Efficacy of Equine Assisted Therapeutic Exercises in Gross Motor Function and Performance in Children with Cerebral Palsy

Alexandra STERGIU\*, Dimitrios VARVAROUSIS, Pinio CHRISTODOULOU,  
Panagiota PLYTA, Avraam PLOUMIS

Physical Medicine and Rehabilitation, School of Medicine,

University of Ioannina, Greece

**Background / Aims:** To evaluate the efficacy of the equine-assisted intervention in children with cerebral palsy, in terms of gross motor function and performance as well as whether this improvement can be maintained for 2 months after the end of the intervention.

**Methods:** 31 children with cerebral palsy participated. The study lasted 28 weeks. The equine-assisted intervention lasted 12 weeks and took place once/week for 30 minutes. Gross Motor Function Measure, Gross Motor Performance Measure, Gross Motor Function Classification System, and Wechsler Intelligence Scale for Children were used for the evaluation of each child's physical performance and mental capacity.

**Results:** The results showed statistically significant improvements in total Gross Motor Function Measure and in all subcategories ( $p < 0.005$ ), also in total Gross Motor Performance Measure and all subcategories ( $p < 0.005$ ). These Gross Motor Function Measure results remained present two months after the last intervention.

**Conclusions:** Equine Assisted Intervention improves the motor ability (qualitatively and quantitatively) in children with cerebral palsy, with clinical significance in gross motor function.

Keyword: Cerebral palsy, Equine assisted activities and therapies, Gross motor function, Gross motor performance,

## OPI-2-2

Topic : **Disabilities > Cerebral Palsy**

### Physical Therapy Incorporating Equine Movement: Kinetic Interactions between Children with Cerebral Palsy and the Horse

Priscilla LIGHTSEY, PT, Pilwon HUR\*, Nancy KRENEK, Younghee LEE

<sup>1</sup> Physical Therapy, ROCK (Ride On Center for Kids), USA

<sup>2</sup> Mechanical Engineering, Texas A&M University, USA

**Background / Aims:** Physical therapy treatment incorporating equine movement is recognized as an effective tool to treat functional mobility and balance in children with cerebral palsy (CP). To date, only a few studies have examined kinematic outputs of the horse and a participant when mounted. In this pilot study, we examined the interaction between the horses and children with CP during physical therapy sessions utilizing equine movement to better understand the effectiveness of this type of treatment.

**Methods:** Four children with CP received eight physical therapy sessions incorporating hippotherapy as a treatment intervention. Functional mobility was assessed using the Timed Up and Go or the 10m Walk Test. Inertial measurement unit sensors, attached to children and horses, recorded movements and tracked acceleration, angular velocity, and body orientation.

**Results:** Results of the functional tests showed modest improvements over time. Sensor data, using the kinetic sensor measurement device, revealed that the children's movements (quantified in frequency and temporal domains) increasingly synchronized to the vertical movement of the horse's walk, demonstrated by reduced frequency errors and increased correlation. The findings suggest that as the sessions

progressed, the participants appeared to become more familiar with the horse's movement.

**Conclusions:** Since the horse's gait at a walk mimics the human gait, this type of treatment may provide individuals with CP, who have abnormal gait patterns, an opportunity for the neuromuscular system to experience a typical gait pattern. The horse's movement at the walk is consistent, cyclical, rhythmical, reciprocal and multi-dimensional, which can facilitate motor learning. Thus, the increased synchronization between horse and the mounted participant suggests that physical therapy utilizing equine movement is a viable treatment tool to enhance functional mobility. This study may provide a useful baseline for future work.

Keyword: Cerebral Palsy, Physical Therapy, Equine movement

## OPI-2-3

Topic : **Disabilities > Cerebral Palsy**

### Effect of Equine-Assisted Activities and Therapies on Cardiorespiratory Fitness in Children with Cerebral Palsy: A Randomized Controlled Trial

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<sup>2</sup> Department of Physical education , Seoul National University of Education , Korea

**Background / Aims:** To determine the effects of an Equine-assisted Activities and Therapies (EAAT) program on cardiorespiratory fitness in children with cerebral palsy (CP).

**Methods:** This study was a single-blinded parallel two-arm randomized controlled trial with 1:1 randomization to the EAAT or control group. The EAAT program was conducted for 40 minutes twice a week, and the whole program duration was 16 weeks (a total of 32 lessons).

**Results:** Changes in the Clinical Global Impression–Severity scale and Clinical Global Impression–Improvement scale scores were not difference between the groups after the intervention. The Gross Motor Function Measure–66 (GMFM66) score increased in both the EAAT and control groups, and the difference between the groups was statistically significant ( $p < .05$ ). The Pediatric Balance Scale (PBS), Timed Up and Go test (TUG), and 6-minute walk test results improved only in the EAAT group, and the difference between the two groups was statistically significant ( $p < .05$ ). After the intervention, resting heart rate (HR<sub>rest</sub>) was significantly decreased in the EAAT group compared to the control group, and the difference between the groups was significant ( $p < .05$ ). The EAAT group was only affected by the change in HR<sub>rest</sub>



( $p < .0001$ ). The EAAT group was not affected by the change in the GMFM66, PBS, and TUG results. There was no difference in the amount of physical activity (PA) before and after the intervention in both the EAAT and control groups.

**Conclusions:** The present study showed decreased HRrest in children with CP after completing the 16-week EAAT program. This improvement was not explained by improvement of motor capacity, but by the intervention. In addition, the EAAT program (a participation-focused therapy) did not induce changes in PA in ambulatory children with CP.

Keyword: Equine-assisted activities, Cardiorespiratory fitness in children, Cerebral palsy

## OPII-1-1

Topic : **Business > Education for Specialist**

### Development of an ICF Based Assessment Tool for the Measurement of Equine Assisted Interventions: a Multi-Center Evidence Based Approach

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Research Institute for Inclusion through Physical Activity and Sport, German Sport University, Cologne, Germany

**Background / Aims:** Equine-assisted interventions are carried out in large numbers worldwide. Their assessment and documentation vary greatly depending on scientific discipline and country; therefore, systematization and comparison of results obtained is still difficult. Standardized documentation and valid scientific evaluation could contribute to determine therapy aims and effects objectively, reliably, and validly. Within the ‘PED Study: Horse, Evaluation, Documentation’, an ICF-based assessment tool is being developed in close cooperation with experts from the field of therapeutic riding and the German Curatorship for Therapeutic Riding (DKThR). The aim of the study is to develop within two years (1 September 2019–31 August 2021) a practicable and valid tool in the common language of the international health system of the World Health Organization (WHO) to adequately record therapeutic effects and document the course of therapy in a prospective longitudinal targeted manner.

**Methods:** A pilot assessment tool was developed on the basis of five focus group discussions with 21 experts from the field of equine-assisted therapy. It is differentiated into a global module and four sub-modules for hippotherapy, individual and group therapy, and trauma therapy. Items for the pilot tool were constructed on the basis of the gained qualitative data linked to the ICF classification system via Cieza et al.’s (2005) linking rules by two independent assessors. Based on a sample of 116 participants, first results regarding item construction (item analyses, difficulty,

discriminatory power, explorative factor analyses) were obtained. Also, practical applicability was evaluated. Subsequently, the tool was modified and reduced in scope. The revised tool is currently being tested in a longitudinal practical approach in 24 locations in Germany (01 August 2020–31 March 2021). Statistical procedures to be tested are confirmatory factor analyses and other inferential statistical analyses due to the psychometric criteria validity, reliability, and objectivity on the basis of larger sample sizes.

**Results:** First results of the explorative factor analysis show a three-factor solution for the global module which explains 78.2 percent of the total variance. Bartlett and KMO tests previously indicated suitability for the factor analysis (chi-square (378) = 3530.46,  $p < 0.000$ ; KMO = 0.923). Formed factors were psychosocial functioning, motor functioning, and mental functioning, including a total of 28 items of the initial 37. Scale reliabilities were in the excellent range ( $\alpha = 0.96$ ;  $\alpha = 0.96$ ;  $\alpha = 0.95$ , respectively); the reliability of the total scale was  $\alpha = 0.98$ . For both sub-modules individual and group therapy, explorative factor analyses yielded support for a two-factor structure. Sub-module reliabilities were also in the good to excellent range. Further results of confirmatory factor analyses are expected in spring 2021 and can be presented at the conference.

**Conclusions:** The results provide strong support for a targeted and economic assessment of equine-assisted therapy via the indicated scale structure of the developed global module and submodules. Items can be related to international health-related domains of the WHO. The developed assessment tool is subsequently prepared for the German-speaking practice as an app, to be used prospectively as a standardized assessment tool for systematized documentation and evaluation of equine assisted interventions.

Keyword: Quantitative assessment, Factor analysis, Digitalization

## OPII-1-2

Topic : **Business > Education for Specialist**

### Teaching Very Low Functioning Children with Developmental Delays and Complex Needs How to Ride

Nancy PASCHALL\*, Sarah NEWMAN

HALTER Program, Healing and Learning Through Equine Relationships, USA

**Background / Aims:** Children with developmental delays who also have other challenges can be the most difficult children to engage and teach. This session will focus on keys to successfully working with children who are extremely challenged/disabled. Successful outcomes are the result of 1) thorough assessments; 2) well-defined lesson plans with measurable objectives; 3) building a team of volunteers who work closely with each child to implement the lesson plan; and 4) great communication between the instructor and the volunteers. The goals of this session are that the attendees will have new knowledge of how to better engage and teach the most challenging of children.

**Methods:** This is a virtual presentation that will include videos demonstrating the key points of assessment, lesson planning, volunteer engagement and communication. Attendees will have plenty of time for questions and come away from this session with new ways to work with children with extreme delays and challenges.

**Results:** The attendees will learn important aspects of assessing potential participants for their programs that will help determine what the participants need in terms of support to learn riding skills, and life skills. The most developmentally and physically challenged children/people are rarely the focus of training for therapeutic riding instructors, and therefore many instructors do not feel prepared to teach them. This can create frustration on the part of the riders, the instructor, and the volunteers. Attendees will leave this presentation with new perspectives and tools that can be

implemented immediately. This will improve the outcomes for developmentally delayed and extremely challenged/disabled children and decrease the frustration of the volunteers and the instructor.

**Conclusions:** People with extreme developmental delays, intellectual challenges, and other challenges such as autism, visual impairments/blindness, hearing impairments/deafness, non-verbal, and mobility challenges can be the most difficult people to teach to ride and learn basic life skills. The presenter, a pediatrician, has over ten years' experience teaching people with the most severe of disabilities. Training for instructors rarely focuses on this population. This presentation will help attendees learn how to improve the outcomes for these riders and decrease the frustration of teaching them. Because measurable outcomes can be very difficult to identify for this population, the assessment process and developing meaningful measurable outcomes are stressed in this presentation. This presentation helps keep lessons as real learning experiences instead of pony rides.

Keyword: Complex challenges, Multi-handicapped, Teaching strategies

## OPII-1-3

Topic : **Business > Education for Specialist**

### HOW We Teach Matters! Optimize Communication and Cueing to Enhance Learning and Focus in the Arena.

Saebra PIPOLY\*

<sup>1</sup> Owner/Founder, Hoof Falls & Footfalls, LLC, USA

<sup>2</sup> Advanced TRI, CTRI, ESMHL, Instructor Mentor, RTRI Faculty/Evaluator, PATH Intl., USA

<sup>3</sup> Instructor- Therapeutic Horsemanship, Equine Business, Isothermal Community College, USA

**Background / Aims:** What makes a “great” instructor?

Is it an art has been honed over years of experience and trial and error?

Is it a science to how and what is to be said during lessons?

Is it both?

As instructors we want to ensure our students not only have fun and stay safe during lessons but also progress in their equestrian skills to the best of their own unique abilities. But how do we progress them? How do we do our part in helping our students with wide ranges of physical and cognitive abilities reach their fullest potential? How do we help them achieve independence? Is there really a method that works with every student?

**Methods:** There is a method. And this method works with students who have wide ranges of physical, cognitive, and emotional abilities.

How we present information and format our cues as instructors can greatly enhance how our students focus, process, and retain the information being taught. This is the key to them making progress towards more and more independence. To put it bluntly... HOW we teach and communicate can make or break a lesson and our student’s journey towards independence and true learning.

**Results:** Attendees will develop a better understanding of the following topics and how it applies while teaching in the arena: the difference between performance and learning, different types of learning, limits of our student's focus, externally vs. internally focused cues, and the components of quality cues.

Walk away with the “formula” and method for great cues and communication that you can immediately apply in the barn or arena next time you teach. This formula can instantly enhance how you teach and interact with your students. You may be surprised how a few changes in your wording and “how” you say things can drastically impact your lessons and students in a very positive way.

**Conclusions:** Information presented is adapted from and backed by information in the book "The Language of Coaching– The Art & Science of Teaching Movement" by Dr. Nick Winkelman. Additional research articles relating to learning, cueing, and attention will also be discussed.

This presentation strives to take this invaluable information from The Language of Coaching which is geared towards mainstream sports and translate it into examples and practical applications directly related to professionals in the EAS industry.

Keyword: Instruction theory, Learning, Communication

## OPII-2-1

Topic : **Disabilities > What's New in Adults**

### Hippotherapy for Pain Syndrome in the Immediate Postoperative Period after Knee Endoprosthesis in Women.

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<sup>2</sup> Department of hippotherapy, Platan & Co Equestrian Club, Russia

**Background / Aims:** Communication with animals helps to cope with psychological and social difficulties. The indisputable advantage of horse-assisted rehabilitation for orthopedic patients is its ability to replicate the biomechanics of human gait without axial load on the legs. Consequently, hippotherapy helps to minimize rehabilitation time by restoring the muscle corset of patients after surgery before they start to walk with a full load. Currently, the following difficulties arise during the rehabilitation of women after total knee arthroplasty: debilitating night pain in the knee joint, significant limitation of movements in the knee joint, long-term partial (up to 50%) limitation of the axial load on the leg when walking after surgery.

This study aims to develop the method of hippotherapy for such patients and to evaluate its effectiveness. The study achieved the following objectives: to identify the causes of pain, to identify specific osteopathic dysfunctions that can lead to pain in these patients, to form a rehabilitation plan with the help of a horse, to evaluate the effectiveness of hippotherapy comparing to other methods of rehabilitation.

**Methods:** This paper presents results of the study of 30 women after knee arthroplasty, aged 52 to 78 years, who complained of nocturnal pain in the knee joint and lower leg that was not relieved by pain medications. At the beginning and at the end of the study the following measurements were taken: the volume of the thigh, knee joint and lower leg; temperatures locally; range of motion in the joint; data on



concomitant diseases were collected. During the examination osteopathic dysfunctions in the pelvic and lower extremities were assessed, patients completed the VAS, Bristol knee score, Oxford–12 item knee score. Statistical processing of the data obtained was carried out using the "Statistics 10.0" program.

**Results:** It was revealed that the use of hippotherapy increased the range of motion by 2 times, there was a significant decrease in the edema of the operated limb, the level of pain decreased by 25%, the quality of life of patients improved by an average of 3 times.

**Conclusions:** The study showed that the likely cause of night pain in the area of the knee joint and lower leg, the development of edema of the lower extremities, dysfunction of the tibiofibular membrane, shortening of m. biceps femoris in female patients is gynecological pathology.

The course of hippotherapy is aimed at restoring the function of the pelvic diaphragm and the elasticity of the ligamentous apparatus of the pelvis, which creates conditions for the adequate functioning of the pelvic organs. Relaxation of m. biceps femoris and popliteal muscles leads to elimination of the fibula dysfunction and restoration of the tibiofibular membrane functionality. All the above lead to a significant reduction in swelling and night pain, early restoration of range of motion in the knee joint, which makes it possible to accelerate recovery of patients and improve their quality of life.

Keyword: Hippotherapy, Knee endoprosthesis, Post–surgery rehabilitation

## OP11-2-2

Topic : **Disabilities > What's New in Adults**

### Influence of Equine Facilitated Psychological Support on the Psychological Wellbeing of Healthcare Workers During the Initial Phase of the COVID-19 Pandemic in Italy

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**Background / Aims:** The COVID-19 emergency had a great impact on the psychophysical wellbeing of healthcare workers (HCWs)<sup>1</sup> and several studies underlined high rates of fatigue and mental health issues among them<sup>2-3</sup>. Given this scenario, this research aimed to assess the psychological wellbeing of different categories of HCWs (doctors, nurses and healthcare assistants) at a hospital in northern Italy, and to study the psychological outcomes equine facilitated interventions vs. other types of supportive interventions or no intervention

**Methods:** This cross-sectional study was conducted in May 2020 at a public hospital located in northern Italy. To be included in the study, eligible participants had to be aged  $\geq 18$  and fluent in Italian. Given these inclusion criteria, 175 HCWs were included in this research. Participation was voluntary and all the HCWs involved in the study returned signed consent form.

Self-report questionnaires were administered, at the end of interventions, to all the participants to collect (1) demographic and workplace data, (2) information about

whether the HCWs were involved in equine therapy, or other types of interventions, or didn't participate to any intervention, (3) symptoms of anxiety (Generalized Anxiety Disorder Scale [GAD-7])<sup>5</sup> and depression (Patient Health Questionnaire [PHQ-9])<sup>6</sup>, (4) perceived stress (Perceived Stress Scale [PSS])<sup>7</sup>, (5) professional quality of life (Professional Quality of Life Scale [ProQOL])<sup>8</sup>, and (6) post traumatic growth (Post Traumatic Growth Inventory [PTGI]). Statistical analyses were conducted using SPSS (25). Descriptive statistics were obtained to examine participant psychological wellbeing according to the cut-offs scores of the scales, as indicated by the literature. Anxiety, depression, perceived stress, perceived quality of life and post traumatic growth were included as dependent variables in a Multivariate Analysis of Variance (MANOVA) to investigate the psychological outcomes of equine facilitated psychological support vs. other types of interventions vs. no intervention.

**Results:** All the scales had a good internal consistency ( $\alpha > .70$ ) and an approximately normal distribution. As defined by conventional cut-offs, 36,6% (N=34) HCWs reported moderate to severe levels of anxiety and 31,4% (N=55) HCWs reported moderate to severe symptoms of major depression. The MANOVA revealed a significant effect ( $p < .05$ ) of the support interventions on psychological outcomes of HCWs  $F(7,163)=2,360$ ;  $p=.025$ . Univariate F-tests showed a significant effect ( $p < .05$ ) on post traumatic growth  $F(2,168)=6,149$ ;  $p=.003$  and post hoc analyzes (using a Bonferroni correction) pointed out that in HCWs who participated at the equine facilitated intervention (N=53) there was significantly greater post-traumatic growth (M=43,19; SD=23,82) compared to those (N=57) who didn't participate in any intervention (M=27,95; SD=20,93).

**Conclusions:** Equine facilitated psychological support were found to be interventions that positively influence the quality of life, containing post-traumatic stress symptoms and favoring the development of resource and resilience aspects in subjects following a traumatic experience. This study can contribute to explicate the mechanisms by which equine facilitated interventions may be effective in the treatment of trauma. However, it has limitations especially with regard to the lack of pre-intervention data collection and the non-random assignment of participants to groups.

**Keyword:** Health workers, Equine facilitated psychological support, COVID 19

## OPII-2-3

Topic : **Disabilities** > **What's New in Elderly**

### Case study: The Equine Therapy Assistance Program in Skills Development in Addiction.

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**Background / Aims:** This study aims to present a case that deals with the treatment of an individual in Equine therapy, using the Equine Therapy Assistance Program in Skill Development (PAEDHA) methodology for Addiction in the context of groundwork with free horses.

**Methods:** the project has been approved by the Research Ethics Committee of Universidad São Francisco (CAAE: 17152019.0.0000.5514); the participant signed the Free and Informed Consent Form (TCLE, in Portuguese), assuring us that his case could be published. The participant of this research was a 36-year-old male, a member of the therapeutic community specialized in addiction in a countryside city in São Paulo state, who is undergoing re-entry into society. The approach of this study was qualitative of the exploratory descriptive type. There were five 50-minute sessions; the first one was on anamnesis, while the others took place in the setting (arena and indoor horse track) at an equine therapy center. As the PAEDHA approach was used, throughout the sessions, some materials have been included in the setting in order to act as symbolization elements (a big ball, sticks, hay, a drum and a whiteboard), and sessions have been divided into three phases: warmup – when the participant would share their complaint or issue to be dealt with; the activity itself, when he relate his issues with the elements on the track and the horse dynamics, when the process and , by means of analogy, compare what happened on track to their primary issue.

**Results:** The approaches used matched the participant's projection, their latent content; some metaphors/symbolizations were the naming of horses, challenger, happiness, and isolation, which enabled him to be in contact with his subconsciousness and imagine them. Throughout the sessions, the participant searched for his happiness, a topic raised by himself. In the session before the last one, he made an important move for his psychoeducative and therapeutic process, where the facilitator stands in a position for the participant to think about "what movement I should make to find happiness?"; the participant has an insight and says: "it depends on me". In the last session, there was a rescue of all previous sessions; he managed to give other names to the horses according to his progress/development, such as: happiness, calmness, and provocative. For him, the negative aspects are also present and needed for his development process.

**Conclusions:** The psychoeducative and therapeutic process has enabled him to be in touch with the latent aspects, which led him to use psychoactive drugs; with that in mind, the creation of such demands has helped rebuild his purpose for life in search of his own happiness in simple things, like bonding with his daughters again. This case study has shown the possibility of a treatment using the PAEDHA strategies in the context of a free horse, which, through dramatization, enables the creation of content that is not accessible to the consciousness.

Keyword: PAEDHA, Chemical addiction, Equine therapy

## OPIII-1-1

Topic : **Disabilities > What's New in Elderly**

### Effects of Horseback Riding for Preventive Care on the Quality of Life, the Physical Function, and the Mental Health of Community Dwelling Elderly

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**Background/Aims:** The effects of horseback riding on the physical and mental health of the elderly have been shown. However, there are few reports on the effect of horseback riding on the quality of life (QOL). The aim of this study was to investigate the effect of horseback riding on the QOL of the elderly and the relationship between their QOL, motor function, and psychological stress.

**Methods:** The participants were 13 community-dwelling the elderly who consented to participate in the study (mean age: 87.0). The horseback riding program was offered once a month in 2019. The horse was led by the leader and the walking speed of the horse was 110m/min for approximately 15 minutes with the side-walkers. The evaluation of the study used the health-related QOL (HRQOL) using the Japanese version of the MOS 36-item short-form health survey (SF-36) and the six items (the 5m walking time test (5MWT), the one-legged stance test (OLS), the functional reach test (FRT), the grip strength (GS), the timed up & go test (TUG) and the sit and reach test (SR)) of the motor function at the beginning and end of the program period. Moreover, the salivary alpha-amylase activity (sAA) was measured

to assess psychological stress at before–after a riding session. Data were analyzed using the paired t–test to compare between the beginning and end of the program period and before–after a riding session. And multiple linear regression models were used to determine which factors were associated with the HRQOL. The p–value was used significance level of 0.05.

**Results:** The results indicated that the social functioning (SF) from the SF–36 was higher than 50 score of the Japanese national norm value at the end. Motor function evaluation showed significant improvement in the OLS and the GS, however, the TUG significantly increased time at the end of the program period. The value of sAA was significantly decreased after a riding session comparing to before a riding session. Multiple linear regression analysis revealed the higher PCS at the beginning was significantly associated with the TUG and the OLS,  $R^2 = 0.84$ . The higher PCS at the end was significantly associated with changes in the sAA before–after a riding session and the OLS,  $R^2 = 0.78$ . The higher RCS at the end was significantly associated with the number of horseback riding and the 5MWT,  $R^2 = 0.90$ .

**Conclusions:** It may be related to the improvement of SF score in the SF–36 that horseback riding provides the elderly the opportunity to participate in society. In addition, horseback riding may contribute to the facilitation of muscle activation of the trunk from the data of OSL then it may lead to the improvement of dynamic standing balance stability. In conclusion, the results suggested that horseback riding may increase opportunities for social participation, improve dynamic balance, which may help maintain and improve the HRQOL.

Keyword: Quality of life, Preventive care, Elderly

## OPIII-1-2

Topic : **Disabilities** > **What's New in Elderly**

### Effect of Hippotherapy on Functional Capacity and Stomatognathic System in Older Adults

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**Background/Aims:** Functional capacity is an indispensable parameter to assess the health of the geriatric population, as it can detect a possible risk of falls, a significant cause of morbidity and mortality in these individuals and future dependence to perform daily activities. The molar bite force and the pressure of the tongue and lips are important indicators of the performance of orofacial functions: chewing, sucking, swallowing, speech and breathing. The imbalance of the stomatognathic system, in addition to compromising the performance of orofacial functions, can have an impact on postural balance, involving the other muscular chains in the body. Therefore, the improvement in functional performance, including the stomatognathic system, resulting from the application of therapeutic approaches, is a topic of great interest in clinical studies with elderly people. The present study aimed to investigate the effect of hippotherapy on the functional capacity and the stomatognathic system of older adults.

**Methods:** To this end, 16 individuals, aged 60 to 79 years, voluntarily participated in a three-month Program of moderate-intensity hippotherapy twice a week, on non-



consecutive days, for 40 minutes each session. The benefits of hippotherapy can be optimized when exercises combined with riding are introduced, as directed throughout the Program adopted in this study. The evaluations were carried out pre- and post-Program. Functional capacity was analyzed using the following instruments: Berg's Balance Scale (BSE); Functional Reach Test (FRT), Timed Up and Go (TUG), Six Minute Walk Test (6MWT), 30 Second Sit to Stand Test (30CST), Arm Curl Test (ACT) and Sit and Reach Test (SRT). The stomatognathic system was evaluated using the Iowa Oral Pressure Instrument (IOPI), an instrument used to measure the pressure of the tongue and lips and the digital gnathodynamometer Kratos, used to measure the maximum molar bite force. The data were tabulated and submitted to statistical analysis ( $p \leq 0.05$ ) using the GraphPad Prism® software (version 5.0, San Diego, USA).

**Results:** There was a significant gain in postural control (FRT  $p=0.0431$ ), in mobility (agility, balance) and in physical conditioning (TUG  $p=0.0011$ ; 6MWT  $p<0.0001$ ), in the strength of the lower limbs (30CST  $p=0.0302$ ), upper limbs (ACT  $p=0.0100$ ) and tongue pressure (IOPI  $p=0.0087$ ).

**Conclusions:** Our data allow us to conclude that regular participation in a moderate-intensity Hippotherapy Program promotes an improvement in the functional capacity and performance of the stomatognathic system of older adults.

Keyword: Equine-assisted therapy, Postural balance, Elderly

## OPIII-1-3

Topic : **Disabilities** > **What's New in Elderly**

### Development of a Device for Retaining Good Posture of Elderly People

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**Background/Aims:** The Nonprofit organization Piskari, has been offering horseback riding to elderly people as therapy for 15 years. The results of posture analysis during horseback riding have shown that many elderly people have pelvic posterior tilt, resulting in unstable postural balance due to increased trunk sway and difficulty maintaining the correct riding posture. For this reason, there is a need for equipment that can maintain good posture during horseback riding. Here, we manufactured a trial device to reduce kyphosis in elderly people during horseback riding, and we verified the results of the device.

**Methods:** The subjects were four early-stage elderly people (mean age 68.8 years) who were independent for activities of daily living (ADL) and able to horseback ride unassisted at about the level of canter. The device used was a wedge made of urethane, which was inserted between the saddle and the buttocks. Three types of wedge were manufactured, with inclination angles of 3°, 5°, and 7°. Video cameras were used to film the posture of subjects in the frontal plane and the sagittal plane while riding a horse led in a straight line at a walk, and the movement of joints was

analyzed by Dartfish 9.0 motion analysis software with sampling frequency of 60 Hz. The joint measurements were the neck angle, knee angle and spinal column angle. Each joint angle was measured without the wedge and with each of the three wedges, and the mean of the four subjects was calculated for each of the four conditions. The mean of five strides was used for each condition as one trial. For the statistical analysis, comparisons between four conditions for the joint angle was performed by means of a one-way analysis of variance and multiple comparisons test, with the level of significance set at 5%. In addition, qualitative motion analyses were performed.

All subjects were given a full explanation of the details of the experiment in advance and gave their consent to participate (the University of Tokyo Ethics Committee approval 20–209).

**Results:** The subjects all showed slight posterior tilt when horseback riding with no use of the wedge. The differences in mean values for the four subjects when not using the wedge and when using each of the three wedges were compared. Neck movement was lowest with the 5° wedge, followed by no wedge (0°). Movement of the spinal column overall was lowest with no wedge (0°) followed by the 5° wedge. Knee joint movement was lowest with the 5° wedge. Upper and lower spinal column movement was lowest with the 5° and 7° wedges.

**Conclusions:** The results of qualitative motion analysis show that with the 5° wedge, there was a change in posture during riding from pelvic posterior tilt to pelvic anterior tilt and the spinal column maintained an intermediate position between flexion and extension. The elderly participants showed the least movement in the joints with the 5° wedge, suggesting that they maintained a sitting posture with good limb position that may lead to the acquisition of good postural stability.

Keyword: Elderly people, Assistive device, Prevention of care

## OPIII-2-1

Topic : **Special Program > Virtual Reality(Horse)**

### **A Proposed Study to Shift TheHorseCourse Proven Equine-Assisted Intervention to VR Platform for Large-Scale Reach**

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**Background/Aims:** TheHorseCourse (THC; Thehorsecourse.org) ReStart is a highly effective equine-assisted intervention supporting those with mental health or behavioral issues when talk-based treatment is ineffective (Hemingway, A; J 2019, 2(2), 236–246; <https://doi.org/10.3390/j2020017>)

The role of highly trained horses in THC is to provide accurate feedback as the participant is coached through tasks. The horses are trained to kick a ball, free jump, etc. in response to subtle body cues and the emotional stance of the unmounted handler. The horses' reactions show the participant if they are too anxious, too aggressive, unfocused, communicating poorly. Success is achieved only when the participant provides calm self-leadership and thus functional behaviors are reinforced.

Despite being a highly effective intervention, the scaling of this program is limited both logistically and economically by the high level of horsemanship skills the THC Facilitators require. For several years, THC has been exploring VR-based solutions to scaling their innovative program. Until now unavailable, is the technology which would allow THC to replace the highly-trained horses in a meaningful way. A VR

program relying merely on narrative or user-specified responses would be poor. It is important to have a feedback loop, based on the 'inner life' of the user. Through experiments with Bournemouth University, THC has ruled out 'Emotibit' as inadequate (a wearable sensor for galvanic skin response). New work by Google's Amber project (Honke et al, 2020; arXiv:2010.15274) shows real promise – a wearable EEG known as “the shower cap” which has shown to correctly assess anxiety in real time. We propose to build upon the work of the Amber Project in order to scale THC.

**Methods:** Pilot study: Firstly, the Amber Project's established protocol will be replicated with THC participants. Secondly, an assessment of whether measurable change is “visible” via the shower caps during key moments of the intervention will be conducted. Following a successful pilot study, we will develop a highly-scalable intervention which takes place in a VR gamified context in which the horses' behavior is determined by the data generated by the users' shower cap in real time. Lastly, the VR program will be robustly evaluated by external academics before large-scale rollout.

**Results:** A digital approach has opportunities for improvement as the horses' moods and distractions can be eliminated. Conversely the loss of some 'real life' aspects of the horse such as touch and smell may be detrimental. We hope for broadly comparable impacts.

**Discussion:** THC is highly effective with those displaying multiple complex needs. Should efficacy prove to be somewhat compromised by the digital shift, there is still potential to support millions of people at a lower level of need. Therefore, at worst the digitalization of THC can be viewed as early intervention or a preventative resilience building measure.

**Conclusions:** The potential for this cheap and accessible mental health intervention is vast, providing a much-needed response to a sweeping mental health epidemic. The digitalization of THC seeks to capture the healing power of horses whilst dramatically increasing its availability and therefore impact on society.

**Keyword:** Virtual reality, Equine-assisted, Anxiety

## OPIII-2-2

Topic : **Special Program > Virtual Reality(Horse)**

### VR in Hippotherapy for Children with Cerebral Palsy

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**Background/Aims:** I accompanied students with disabilities to receive hippotherapy for years. Most of the kids were diagnosed with cerebral palsy (CP); the notable symptoms of this disorder are lack of balance, poor social responsiveness and joint attention (i.e. coordinating attention on the same topic/object with another person), and difficulties in motor coordination. Hippotherapy has shown a 30% improvement in posture, 80% growth in coordination, and 50% rise in balance, sociality, and confidence.

Despite the advantages, access to hippotherapy is limited both environmentally and monetarily. Moreover, since the children often lack social and emotional abilities, it is hard for them to optimize 30-minute lessons and require much time and effort until they mount a horse. There have been previous efforts to replicate the physical experience of hippotherapy through VRs, but there have been not many trials incorporating the VRs to support social and emotional training. Thus, this study focused the design of the VR on the social and emotional aspects of hippotherapy. The hypotheses are as follows:

- a. The VR will enhance the social/emotional responsiveness and joint attention of children with CP.
- b. As a result of the above, the effectiveness of the actual hippotherapy lessons will be maximized.

#### **Methods:**

-VR Design

A VR program (using UNITY) was developed to incorporate the social and emotional

constitution of hippotherapy to assist children with CP. It simulates hippotherapy lessons emphasizing interaction with horses during, before, and after lessons. A Head-Up display was used to higher immersion. The implications formulated the program to be engaging, interactive, and educational for the children.

-Experimental Design

1) Subject of Experiment

The experiment was conducted at a horseback riding center in Kyung-Ki, Korea. The investigation was directed over 1 lesson every week for 3 months for 12 children with CP who were new to hippotherapy. They were separated into experimental and control groups with the former incorporating VR.

2) Experimental Method

During each lesson, the total number of responses to the instructor, interactions with the horse, and initiations of communication were recorded. The given actions signify a student's joint attention, concentration, and attempt to communicate.

The children were also given a three-point Likert Scale questionnaire after the completion of the session to determine the child's comprehension of the horse's body language, fundamental social skills, and awareness of horses as sensitive entities capable of sharing emotions.

**Results:** The observation showed that the children in the experimental group displayed an increased frequency of behavioral performance compared to the children in the control group. Also, the outcomes of the Likert Scale questionnaire presented greater learning in those who used VR.

**Conclusions:** The results indicate that the VR program designed in this study was effective to enhance various emotional and social abilities such as joint attention, communication, and emotional sharing of children with CP. This experiment additionally proved that the VR program could be an efficient supplement to further support the children's growth in hippotherapy lessons.

Keyword: VR, Cerebral palsy, Social/Emotional responsiveness

## OPIII-2-3

Topic : **Special Program > Virtual Reality(Horse)**

### Research Readiness in Equine Assisted Services

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**Background/Aims:** Despite the intense need to increase the amount of peer-reviewed research in Equine Assisted Services and that many centers would like to conduct research, centers/programs and practitioners are generally unaware of what it means to be ready to conduct research. This presentation helps centers and practitioners understand what needs to be in place prior to conducting research so that the research projects do not overly stress the capacity and operations of the Equine Assisted Services Center. The primary presenter has developed a "Research Readiness Checklist" based on the experiences of having been involved in several center-based research projects. Meeting these "standards" will help centers to truly be ready, or, alternatively, decide other ways for their organizations to reap the benefits of research. All Centers will be encouraged to develop valid outcomes measurements that contribute data to support the field of Equine Assisted Services.

**Methods:** A presentation (virtual) of the factors to consider for centers, programs, and practitioners prior to engaging in research. The Research Readiness Checklist, which was developed by the current President of the Board of Directors of the Horses and Humans Research Foundation will be presented and reviewed. Plenty of time will be available for questions.

**Results:** This presentation will give attendees a tool that they can use to assess their readiness to be a part of research. By using this tool, attendees can look objectively at their center or their program and see if they are ready to take on the additional



tasks and burdens that come with initiating a research project. The long-term results of this will be that centers and practitioners will be prepared to implement research projects and not be surprised by the stressors that come with implementing a research project. This will lead to equine assisted service centers, programs and practitioners being ready to become involved in research and thereby increase the amount of research on equine assisted services.

**Conclusions:** There is a critical need to empirically demonstrate the effectiveness of Equine Assisted Services across diagnoses, the severity of conditions, ages, genders, and the variety of services such as therapeutic riding, interactive vaulting, therapeutic carriage driving, equine facilitated learning, equine facilitated psychotherapy and hippotherapy (Occupational, Physical, and Speech Therapy). Concurrently researching the impact that providing these services has on the equines is essential and ethically responsible. Without increasing the evidence Equine Assisted Services may lose support to organizations and services that can demonstrate measurable outcomes or the lowest overhead expenses as opposed to the greatest impact. Therefore, providing a tool such as the Research Readiness Checklist will help centers, programs, and practitioners make sure they are prepared for the additional burden that comes with undertaking a research project. This should lead to more organizations that have the capacity to implement research projects and thereby increase the number of research projects investigating the impacts of equine assisted services on participants and the horses.

Keyword: Research, Readiness, Tool

## OPIV-1-1

Topic : **Horse Related** > **Equine Welfare**

### Group-Housing of horses – a potential source of social stress?

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**Background/Aims:** From an equine welfare perspective, group-housing of horses is recommended as it allows them to regularly socialize and thereby fulfil their social needs. This recommendation also applies to horses that are taking a role in equine-assisted interventions. So far, little is known whether agonistic interactions among group-housed horses constitute a source of social stress. Therefore, we aimed at assessing whether agonistic interactions among horses cause a stress response and whether affiliative interactions facilitate a calming effect.

**Methods:** We measured the heart rate of 15 group-housed horses during 596 spontaneously occurring agonistic and 416 short affiliative interactions such as sniffs, touches, and head rubs, and 37 grooming events when ranging freely in their fields. For comparisons, heart rate was also measured during behaviours of similar physical activity, such as standing and locomotion. The horse groups have been established at least a year before data collection commencement and comprised different breeds. The horses under study were used for equine-assisted therapy, riding and vaulting lessons, and hacking.

This study received ethical approval from Anglia Ruskin University and followed ISAE\*\* and ASAB\*\*\* guidelines for conducting research with animals.

**Results:** The most frequent interactions were mild threats which corresponded to a heart rate increase of  $1.56 \pm 1.09$  (median  $\pm$  IQR) beats per minute. Thereby, heart rate did not differ from walking, a behaviour of similar physiological activity level (Wilcoxon signed-rank test:  $n = 14$ ,  $V = 0.241$ ,  $p = 0.241$ ). Only around  $\sim 1\%$  of all agonistic interactions were of high intensity, which facilitated a heart rate increase of  $23.05 \pm 18.32$  (median  $\pm$  IQR) beats per minute. Due to the low number of occurrences, only descriptive statistics are given. During short affiliative interactions, the mean heart rate did not differ from standing, a behaviour of similar physical activity (Wilcoxon signed-rank test:  $n = 14$ ,  $V = 0.211$ ,  $p = 0.286$ ). However, the mean heart rate during grooming was significantly lower ( $\sim 8\%$ ) than during standing (Wilcoxon signed-rank test:  $n = 8$ ,  $V = 26$ ,  $p = 0.046$ ,  $r = -0.53$ ).

**Conclusions:** These findings showed that agonistic interactions mainly were of low intensity in established horse groups and did not induce a significant stress response. High-intensity agonistic interactions were rare. However, as they corresponded to a pronounced increase in heart rate, we recommend horse owners to regularly monitor the behaviour among group-housed horses. Frequent occurrences of high-intensity aggression could have negative welfare implications, and a change in group composition or husbandry routines should be considered. Short affiliative interactions did not affect heart rate; however, the lower heart rate during grooming indicated a calming effect. This finding suggests that allowing horses to engage in mutual grooming may promote relaxation and positive welfare.

\*\* International Society for Applied Ethology

\*\*\* The Association for the Study of Animal Behaviour

Keyword: Social interactions, Heart rate, Socio-physiology

## OPIV-1-2

Topic : **Horse Related** > **Equine Welfare**

### Building Relationships in Equine-Assisted Activities: Overlaps and Differences in Horse and Human Friendship Strategies

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**Background/Aims:** Equine-Assisted Activities and Therapies (EAAT) often emphasize the importance of horse partnership and welfare and often incorporate relationship building skills into therapeutic activities. Many of these activities involve restraint, training, or riding techniques that rely on principles of learning theory as opposed to research in pro-social behaviors in horses. In order to determine the interspecies social characteristics of such partnerships, we need to better understand how horses develop and maintain social bonds, how those strategies overlap with human interactions, and how these processes are and are not utilized in EAAT.

**Methods:** Two separate research projects were used to gain a basic assessment of horse affiliative strategies and the perception of human interactions by horses. The first study involved 200 horses housed in large two large pastures and socially-stable environments. The study involved video footage of horses under low and moderate stress conditions to assess affiliative behaviors between horses and pro-social strategies between chosen companions. The second study assessed the behavioral responses of a small herd of 11 horses to specific interactive strategies of humans in their pasture environment over a course of 8 consecutive visits to determine preference for individuals and interactions.

**Results:** The results of the first study support the idea that chosen proximity, mutual movement, mutual exploration, and mutually respectful communication play an

essential role between favored conspecifics. Behaviors vary depending on context, but the types of communication within individual pairs remains consistent and mutual respect and reciprocation is always part of engagement. In the second study, horses demonstrated fewer stress behaviors during interactions that did not involve physical contact or that were mutually agreed upon by both horse and human.

**Conclusions:** The findings of these studies suggest that horses rely on communication strategies that are developed between two individuals and that each interaction must allow for each participant to voice willingness or objection, whether between two horses or a horse and a human. The findings can provide greater insight into how we interact with horses in EAAT programs if our actions and activities align with our goals of greater equine welfare, partnership, or relationship skill training. Such findings can also serve to provide more context into improving our understanding of equine social behavior in herd environments in order to improve their social environment with other horses.

**Keyword:** Horse–human interaction, Affiliative behaviors, Interspecies relationships

## OPIV-1-3

Topic : **Horse Related** > **Equine Welfare**

### Perception of the client's voice by horses involved in Equine Facilitated Physiotherapy

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**Background/Aims:** The aim of the study was to test the hypothesis that vocalization of the client during the Equine Facilitated Physiotherapy (EFPT) influenced physiology and behavior of the horse.

**Methods:** In total, 4 experienced horses from the EFPT center Caballinus were successively exposed to three different playbacks of a voice of a client during a simulated EFPT unit: the playback with negative emotional valence (negative playback/NP), positive emotional valence (positive playback/PP), and with silence as a control. The client was represented by an experienced rider in order to eliminate the confusing effects associated with the client. Heart rate was measured by Polar Team2 sensors while the physical activity was monitored using the Endomondo LLC mobile application which recorded the total time of the ride, distance [km], and speed [km/h] using GPS. Horse behavior (ears position, neck position and body reaction) was observed during EFPT unit.

**Results:** Horses expressed higher speed when exposed to NP compared to PP ( $4.38 \pm 0.11$  km/h vs.  $3.98 \pm 0.11$  km/h,  $p=0,05$ ; LSMEANS  $\pm$  standard error) and

increased the heart rate ( $64.59 \pm 0.52$  bpm vs.  $58.66 \pm 0.51$  bpm,  $p < 0,0001$ ). The frequency of conflict behavior (ears backwards) also tended to be higher when listening to NP than PP ( $12.24 \pm 0.96$  vs. PP:  $11.19 \pm 0.96$ ,  $p=0.08$ ). On the opposite, positive playback tended to slow down the horse's speed and it significantly reduced the heart rate compared to control ( $3.98 \pm 0.11$  km/h vs.  $4.28 \pm 0.11$  km/h,  $p < 0.05$ ).

**Conclusions:** The results suggest that horses are capable to recognize emotional valence in the voice of the clients, however the voice may be acoustically uncomfortable anyway. The positive valence of human manifestations had obviously calming effects on the horse, while the client's negative emotions induced frustration even in experienced therapy horses. There is a wide range of other behaviors and characteristics of the client that may affect the horse during EFPT. Therefore, we will focus on other factors, such as the physical instability of the client or behavior of the handler in future.

Keyword: Equine facilitated physiotherapy, Stress, Welfare

## OPIV-2-1

Topic : **Disabilities > Post Traumatic Stress Disorder I**

### Horses Healing the Wounded Warrior: A Qualitative Inquiry of Equine-Facilitated Psychotherapy in Treating PTSD for Female Veterans

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**Background/Aims:** Posttraumatic stress disorder (PTSD) is a major concern for military veterans in the United States and current research on women’s experiences in the military and the effects of their postmilitary PTSD are limited. Currently, there are a variety of evidence-based and alternative treatment options for veterans with PTSD, and one alternative treatment option includes equine-facilitated psychotherapy (EFP). EFP is a form of animal-assisted therapy (AAT) that integrates the human-animal bond as part of treatment and recovery. The purpose of this exploratory study was to explore in-depth experiences of the horse-human relationship in EFP with female veterans to elucidate how the horse-human relationship may assist in reducing impacts of PTSD. The research question was, “What is the lived experience of EFP in female veterans with PTSD?”

**Methods:** The research was designed as an exploratory qualitative inquiry study that utilized semi-structured interviews with 10 female veterans.

**Results:** The findings from this study included six theme groupings with a total of thirty-three themes found. The most significant themes common to five or more participants included: Emotional discomfort with the horse, Spiritual experience with the horse, Experience of safety with the horse, Visual contact with the horse, Emotional connection with the horse, Beneficial impact of therapy, Increased



connection with others, Reduced anxiety, Reduced withdrawal, EFP advocacy for others, and Delayed awareness of PTSD.

**Conclusions:** Through exploring the nature of the human–animal bond in EFP, this research revealed invaluable insights into the potential healing power of horses and alternative mental health treatment options and served to honor women’s experiences in the military. In addition, this qualitative study provided an opportunity to gather rich detail and general information as to the effects of EFP for sufferers of PTSD.

Keyword: Female veterans, Posttraumatic stress disorder (PTSD), Equine–facilitated psychotherapy (EFP),

## OPIV-2-2

Topic : **Disabilities > Post Traumatic Stress Disorder I**

### Effects of Equine-Assisted Learning on Firefighters' Psychological Stress: A Pilot Study

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**Background/Aims:** Firefighters are highly vulnerable to the Post Traumatic Stress Disorder (PTSD) since they are frequently exposed to traumatic incidents in their work environment. However, they are weakly applicable to traditional hospital or office-based forms of treatment. In this context, an Equine-Assisted Learning (EAL) program was undertaken for firefighters in South Korea. The aim of this pilot study was to explore the feasibility of field application of the EAL program, to identify its safety and efficacy in psychological terms, and to generate evidence for future confirmative studies for general use of the program.

**Methods:** 60 firefighters participated in an eight-week Equine-Assisted Learning (EAL) program consisting of 16 sessions: six sessions of ground activities and 10 sessions of riding activities. The ground activities were designed to allow firefighters to learn how to deal with horses and to enhance their life skills by developing relationships with horses.

Before starting the program, the Trauma and Psychological First Aid training was provided by a professional in order to effectively deal with possible psychological crises.

The Korean versions of the Posttraumatic Diagnosis Scale (PDS-K), the Center for Epidemiological Studies Depression Scale (K-CESD), and the Difficulties in Emotional regulation Scale (K-DERS) were used for measurements. The study procedure included a pre-test and a post-test for a single group of 60 firefighters.

**Results:** Participants were divided into two groups according to level of posttraumatic stress symptoms (PTSS): the PTSS risk group and the PTSS non-risk group. Results showed that PDS-K ( $p < .001$ ), K-CESD ( $p < .001$ ), and K-DERS ( $p < .001$ ) scores were significantly reduced in the PTSS risk group. Moreover, in the PTSS risk group, there were greater improvements with significant group x time interactions: PDS-K ( $F = 23.576, p = .001^{***}$ ), K-CESD ( $F = 6.757, p = .012^*$ ), and K-DERS ( $F = 6.094, p = .017^*$ ). Significant reduction was also found in all sub-scales of PDS-K: re-experiencing, avoidance/emotional numbing, and hyperarousal.

**Conclusions:** This study showed that EAL is effective in improving firefighters' PTSD, depression, and difficulties in emotional regulation. Also, our results showed greater improvement in psychological stress in the PTSS risk group than in the PTSS non-risk group. These findings suggest that EAL is effective in relieving PTSD and PTSD related symptoms in firefighters who have levels of PTSD that are subsyndromal or more severe.

Lastly, this study as the first EAL pilot study successfully conducted in South Korea verified the feasibility, safety, and psychological efficacy of EAL. This is meaningful in that the results of this study support the general applicability and efficacy of EAL across cultures.

Keyword: Equine-assisted learning, Posttraumatic stress symptoms, Firefighters

## OPIV-2-3

Topic : **Disabilities > Post Traumatic Stress Disorder I**

### The Effects of Equine Assisted Learning on Improving Stress, Health and Coping Among Quarantine Control Workers in South Korea

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**Background/Aims:** Foot-and-Mouth Disease (FMD) and Avian Influenza (AI) frequently occur in South Korea, resulting in high levels of occupational stress among quarantine control workers who are forced to partake in massive killings of livestock. This study explored the usefulness of Equine Assisted Learning (EAL) in improving the psychological and emotional functioning of these workers.

**Methods:** A total of 51 FMD/AI control workers participated in 16 sessions of an EAL program, facilitated by therapeutic riding professionals and trained horses.

**Results:** Results showed significant changes in their level of stress, coping style, and overall quality of life related to health, most notably increased vitality, enhanced emotional and social functioning, greater problem-solving and less social avoidance after EAL participation (pre stress  $M = 17.8$ ,  $SD = 4.41$ , post stress  $M = 14.9$ ,  $SD = 4.2$ ,  $p < .001$ ; pre depression  $M = 44.2$ ,  $SD = 6.9$ , post-depression  $M = 35.8$ ,  $SD = 6.2$ ,  $p < .001$ ).

**Conclusions:** Usefulness of equine assisted activities and the association between greater stress coping ability and improved functioning in various areas of life are consistent with previous research findings. Implications for EAL application are discussed.

Keyword: Equine assisted learning, Stress reduction, Quarantine control workers

## OPV-2-1

Topic : **Disabilities > At Risk Youth, ASD**

### Reconstruction of Children's Perspectives on Horse-Assisted Interventions: Work in Progress

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**Background/Aims:** In this presentation the research progress of a cumulative dissertation from the University of Cologne (Germany) will be summarized. In this project four scientific articles have already been published to prepare the main survey, which will be carried out during the year 2021.

The focus of this PhD-project lies in the reconstruction of children's perspectives on horse-assisted interventions in order to supplement existing results from the research field. The research interest is dedicated to a research desideratum, since the children's perspective has hardly been scientifically considered in this context. In order to understand what is relevant for children about horse-assisted interventions, they themselves are included in the empiric part so that they can explain their own relevance. This opens up a new perspective on existing research results, which offers a deeper understanding of the effects of horse-assisted interventions and also includes the possibility of evaluating the practical implementation.

**Methods:** How children perceive horse-assisted interventions is to be worked out with the help of open guided interviews and grounded theory. The open attitude should prevent the results from being influenced by assumptions. The coding methods from grounded theory are used to evaluate the interviews and a circular process of data collection and analysis is followed. Furthermore, drawings of the children of themselves in the stable are collected and analyzed in order to offer a further means of expression in addition to language.

In published papers, the methodological considerations have proven themselves in a pilot project with three children at-risk. Based on the empirical data, research priorities could be set for the main survey.

**Results:** Until now the main findings from the published empirical articles show the relevance of mastering challenges with the horse for the surveyed children. Through the challenges with the horse and the support from the riding instructor there arise different learning situations which allow the child to experience their own self-efficacy.

**Conclusions:** The findings from the previous work are used for the main study with the aim of specifying and expanding the results that have already been published. The qualitative methods of analyzing children's interviews and drawings will be applied again. Around 20 qualitative interviews and drawings should be conducted with children at-risk from 7–14 years who have been participating in a horse-assisted intervention for at least 2 months. Children from 2–4 institutions will be interviewed. In order to obtain further background information on the respective intervention, the implementing personnel are also asked to fill out a questionnaire.

Keyword: Equine-assisted-intervention, Children's perspective, Grounded theory

## OPV-2-2

Topic : **Disabilities > At Risk Youth, ASD**

### When Children Encountering Animal-Assisted Education – A Case Study in Taiwan

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**Background/Aims:** The phenomenon such as "grandparenting," "single parenting," or "latchkey child" are increasing in Taiwan society. Meanwhile, child-caring or upbringing is no longer by parents only. It is often outsourced to after-school programs provided by child daycare, tutoring centers or other talent classes in the market. However, there are difficulties in obtaining such services for rural communities with relatively few resources or hard to afford for middle-down families. On the other hand, more and more children are described as having "attention deficit hyperactivity disorder(ADHD)", "emotional management difficulties" or "learning disabilities" in the school. These children often lead to low motivation, achievement, confidence, or difficulty in interpersonal relationships.

After seeing the needs of children in the local area (Nanhua community, Hualien county), the Taiwan Child Development Association Equine Assisted Education Center cooperates with the local community to promote the "long-term community empowerment program" (hereinafter referred to as the Long-term Program). Through multiple and rolling revisions of equine/animal-assisted courses, it accompanies local children in their after-school time and hopes to empower them in the long term.

**Methods:** This study uses qualitative methods to conduct in-depth interviews with coaches of equine-assisted courses, primary caregivers(parents) of children and other key participants (e.g., primary school teacher). The main focus is the experience of the "Long-term Program" from 2013 to 2019 and the effects on

children. Furthermore, the researcher entered the field as an observing-participant during the first semester of 2019. Template analysis is adopted in the data analysis strategy.

**Results:** The impacts of Long-term Program on participated children (at least joined for a whole year) include four aspects as below:

- 1.Ability enhances: children's ability to observe both people and animals is improved and expression skills. Some children develop their leadership, showing a sense of empowerment at the interpersonal level.
- 2.The formation of positive self-esteem: children have positive development in their concepts of "achievement", "sense of competence", "autonomy", "self-efficacy", "self-affirmation" and "self-expectation" to enhance children's sense of power at the individual level.
- 3."Character building": Children demonstrate essential core values of personal characters, such as "responsibility", "self-discipline", "respect", "caring for others, animals and environment". The respondents observed the display of characters from courses of the program, school classes, or private family time.
- 4."Enhancement of interpersonal relationship": animal-assisted education plays the function of "social support" and "social catalyst" to reflect and assist children to regulate their self-emotions and moderate social emotions, as well as improve social skills, effective communication, or cooperation in a group. Children likewise increase a sense of belonging to the Equine Assisted Education Centre and their community. These include the sense of empowerment at the interpersonal and community level.

**Conclusions:** As an external resource to provide free services for children and their families, the "Long-term Program" is not only a benefit from animal-assisted education; it is also a community effort to help families, sharing their burden of raising children. It responds to the needs of local families in order to stimulate or furtherance children's development.

Keyword: Animal-assisted education, Children development, Community context



## OPV-2-3

Topic : **Disabilities > At Risk Youth, ASD**

### **Systematic Review and Meta-Analysis of Benefits of Equine-Assisted Interventions for Children with Autism**

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**Background/Aims:** Despite not being considered evidence based treatments and not being included in treatment guidelines, intervention approaches using horses in a therapeutic setting (equine-assisted interventions; EAls) have rapidly gained popularity for children with Autism Spectrum Disorder (ASD), due to their promotion in popular media and their increased availability as part of a shift to self-determination in health care and self-managed funding models and disability insurance schemes.

The aim of this study was to determine benefits and effectiveness of EAls for children with ASD by assessing the existing research literature against a combination of guidelines for evidence-based/ empirically supported treatments, examining study quality and risk of bias, and estimating effect-sizes through meta-analytical procedures.

**Methods:** A narrative review of existing literature and a meta-analysis were conducted following the Preferred Reporting Items for Systematic Review and Metanalysis (PRISMA) guidance, with the final database search being concluded in November 2019. An inclusion based approach considered all possible quantitative studies examining goal oriented, structured therapeutic interventions and activities where horses played a central part for children up to the age of 18 years with a diagnosis of ASD. Studies were reviewed narratively based on intervention, participant and study characteristics and assessed for methodological quality and risk of bias. A selection of studies that captured the most common outcome variables

on well-established outcome measures were further analyzed through random effects meta-analytical procedures.

**Results:** A total of 44 studies from peer-reviewed journals and academic dissertations were included in the narrative review. For outcome domains of ASD symptom severity, social skills and problem behaviour, the emerging evidence suggested that EAls could be considered as probably efficacious treatments. In addition, meta-analytical procedures confirmed that EAls had a medium effect on ASD symptom severity ( $g = 0.413$ , 95% CI [0.153, 0.673]  $p = 0.002$ ) and social skills ( $g = 0.423$ , 95% CI [0.212, 0.634],  $p < 0.001$ ). However, methodological weaknesses like lack of randomisation, inadequate blinding and lack of standardised intervention protocols were identified in this review. Studies also failed to conceptualise and test possible underlying mechanisms of change.

**Conclusions:** Despite results being encouraging and indicating that EAls provide a range of benefits and demonstrated an effect on ASD symptom severity and social skills, the current study further confirmed ongoing areas of methodological difficulties that should be addressed in future research. Future research should also give consideration to how different treatment components relate to therapeutic outcomes and how therapeutic effects could be maximised.

Keyword: Autism, Equine-assisted interventions, Systematic review

## OPVI-1-1

Topic : **Disabilities > Post Traumatic Stress Disorder II**

### Cognitive Behavioral Therapy and Hippotherapy – Possibilities of a Common Path

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**Background/Aims:** The aim of the presentation is to provide basic information about Cognitive Behavioral Therapy (CBT) and to determine conditions that must be met for any form of influence (including hippotherapy) to be considered as psychotherapy. Psychological benefits of hippotherapy are explained on the basis of the Bowlby's Attachment Theory, the Self-Determination Theory of Motivation by Deci and Ryan and the Ellis Model. The results of own research are also used. Subsequently, techniques and mechanisms of CBT which, to some extent, may be present during hippotherapy, are explained. The following issues are discussed: work with non-adaptive thoughts (through cognitive restructuring), behavioral activation, the role of experiences related to pleasure and reward, mindfulness training and emotional regulation. Various mental disorders were referred to, including depression, anxiety disorders, obsessive compulsive disorder.

**Methods:** Literature analysis, analysis of research reports

**Results:** Hippotherapy and other equestrian activities can constitute a source of psychological benefits that can be explained by the mechanisms described in Cognitive Behavioral Therapy.

In Horse Assisted Psychotherapy, it is possible to use CBT techniques such as: work with non-adaptive thoughts, behavioural activation, engaging in activities related to pleasure and reward, mindfulness training and emotional regulation.

**Conclusions:** So what are the possibilities of a common path of hippotherapy and CBT psychotherapy?

First of all, Horse Assisted Cognitive Behavioral Therapy: conducted on the basis of a specific paradigm by a psychotherapist who, because of conceptualization, decides to enrich his work by adding activities with horses.

Secondly, activities conducted by a hippotherapist or a riding instructor in cooperation with a psychotherapist, in accordance with his recommendations.

Thirdly, it would be worth for hippotherapists working on other goals (e.g. related to physical improvement) to have knowledge about mental functions and, based on it, influence the motivation and general well-being of the patient.

All these interventions need reliable research to verify their effectiveness. In addition, they should be used by people who understand the need to adapt the methods of intervention to a particular patient and circumstances. It is also worth noting that an additional possibility of a common path is using the theoretical and empirical background of CBT as a source of knowledge helpful in explaining the phenomena observed in hippotherapy.

Keyword: Psychotherapy, Cognitive behavioral therapy, Emotional disorders

## OPVI-1-2

Topic : **Disabilities > Post Traumatic Stress Disorder II**

### Promoting safety in HAT for Complex Trauma: an Application of Integrative Model of Human Animal Interactions through Case Study

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**Case:** A growing number of researches suggests that Horse Assisted Therapy (HAT) is a promising and evidence-based intervention for the treatment of trauma and stress-related disorders. These so-called alternative or complementary interventions to standard trauma treatments are particularly aimed at patients who do not respond to conventional exposure treatments.

However, in addition to studies showing the effectiveness of HAT in reducing post-traumatic stress symptoms, it remains to be understood and objectified by which therapeutic processes these benefits are gained. As of now, a consensus seems to be emerging that the beneficial effects of HAT in the treatment of trauma stem from its ability to facilitate the development of a sense of security in the patient. This process occurs through the horse-patient interactions in the natural and experiential setting offered by this form of therapy.

Current recommendations for the treatment of trauma include exposure therapies. In this context, the stabilization phase described by Janet has long been considered a prerequisite, even a preparation of the patient for the treatment of traumatic memories. However, studies now show that the stabilization and safety phase would be effective and sufficient enough to achieve a reduction in post-traumatic stress symptoms.

Since researchers now agree that the therapeutic benefits of HAT are mediated by the horse-patient interactions, we suggest that it would be useful to further

investigate the processes by which patient/therapist and horse communicate and interact. The Integrative Model of Human–Animal Interactions (IMHAI), which we built, provides a conceptual framework for the study of interspecies interactions and aims to model the main emotional processes involved in human–animal interactions. This model was developed using theoretical contributions from three disciplines deemed fundamental to the understanding of interspecies interactions: neuroscience, psychology, and ethology, with the goal of providing a transdisciplinary approach on which practitioners and researchers can build and collaborate. IMHAI is based on the work of Jaak Panksepp, founder of Affective Neurosciences, particularly the seven primary emotional systems common to all mammals; and the Stephen Porges’ Polyvagal theory, highlighting the role of the autonomic nervous system in social and defensive behaviors. These two theories have the advantage of being common to both humans and animals and are largely part of existing theoretical frameworks for understanding trauma and its treatment.

The perspectives offered by the application of the IMHAI applied to HAT for the treatment of complex trauma will be discussed through clinical cases. The case reports will present the psychological evolution of patients admitted to the aftercare center for the treatment of concomitant Substance Use Disorder and Post–Traumatic Stress Disorder, with concrete and practical examples of the use of IMHAI in HAT for the treatment of complex trauma.

Keyword: Complex trauma, Primary emotional processes, Safety

## OPVI-1-3

Topic : **Disabilities > Post Traumatic Stress Disorder II**

### Trauma Sensitive Equine Assisted Mindfulness (TS-EAM) for Cancer Patients with Post-Traumatic Stress

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**Background/Aims:** As a trauma sensitive mindfulness instructor, an equine assisted growth facilitator, a cognitive science student and an educator in the field of equine assisted interventions, also being a trauma survivor, I have worked through why mindfulness and experiential therapy and learning with horses did not always work the way they these interventions were supposed to. It intrigued the researcher in me, and I dove into studies of mindfulness, experiential learning and therapy with horses, as well as trauma and dissociation. The result of these studies and my own experiences of trial and error, moving through my own trauma therapy and mindfulness instructor trainings, is a 10-week program we (MiMer Centre) call TS-EAM – Trauma Sensitive Equine Assisted Mindfulness. We have received a small grant from the Kern-Godall Foundation in Norway, to set up a study group and to do a pre-pilot to explore how we can adapt this program to help cancer survivors with

**Methods:** In both traditional mindfulness methods and EAP/L the goal is to help clients become more present. In my studies of TSM (Treleaven, 2018) I found the theoretical framework I needed to explain my own experiences of why this often does not work. What works is instead to break down what presence is and how to get there, into smaller steps. Presence is necessary to be able to work with and integrate trauma, but presence is also what is triggering to a dissociative person, or any traumatized person. Dissociation, as well as trauma induced anxiety, needs to be handled with care and respect. It has often been a lifelong strategy to handle adverse experiences.

We currently work with these steps in our 10-week TS-EAM program (they will continuously be evaluated):

1. Introduction
2. Mindful Gauges
3. Safety
4. Resilience
5. Inner Awareness
6. Self-Compassion
7. Belonging
8. Presence
9. Mindful Attunement/Attachment
10. Integration

In the Norwegian study we have gathered a reference group with cancers survivors, experts on cancer, mindfulness, and equine experiential learning and therapy, to help us build a tailor-made TS-EAM program for cancer patients struggling with post-traumatic stress. The reference group will go through the 10-week program and give us their feedback. This is the first step towards doing the full study we have in mind. We are also preparing a Swedish study using our 10-week TS-EAM program for young girls at risk.

**Results:** Due to Covid the Norwegian study has been somewhat delayed. We will continuously report how our work is progressing, and HETI 2021 is the first time we bring these several years of preparatory work to the public.

**Conclusions:** Building good programs is a slow process. Merging different modalities is a delicate work, 1+1 does not equal 2. Bringing TSM together with EAL/EAP looks very promising. If it gives the results we predict, TS-EAM will be a good intervention to help trauma survivors develop tailor-made mindfulness toolboxes to reach more presence and better quality of life. It can either be offered as a standalone intervention, as a preparation or supplement to trauma therapy.

Keyword: Equine assisted mindfulness, Trauma sensitive/Informed, Cancer



## OPVII-1-1

Topic : **Disabilities > What's New in Children**

# The Horse Course Reduces Domestic Violence & Abuse Incidence by 51% – How? A Close Look at the Method Behind the Evidence

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**Background/Aims:** Domestic violence is rising and the COVID pandemic has only made matters worse.

Recent findings from Bournemouth University show that the work of TheHorseCourse, an equine-assisted charity in Weymouth, UK, with ‘Troubled Families’” resulted in a 51% drop in incidence of domestic violence and abuse (DVA) over a 12 month period whereas the control group showed an increase of 17%. This study showed efficacy with an experimental group of n=268 and a control of n=10569, results were statistically valid, with a significant difference level of  $p < 0.05$ .

The lead academic and the founder and CEO of the charity explore and reflect on materials illustrating how this was achieved by the equine-assisted program, ‘The ReStart’.

**Methods:** A variety of data sources feed into this reflective process:

- Methods will be illustrated by video clips of real participants\* engaging and being coached through the same equine-assisted exercises that were employed with the families in the DVA study referred to above.
- Diagrams and written materials describing the ReStart programme. The ReStart is delivered on 5 consecutive days, 2 hours per day with 1-to-one facilitation of horse interactions which take place primarily on the ground (unridden) using halter and rope, or at liberty. To an onlooker, tasks might look like circus tricks – kicking a giant

ball or mounting a pedestal, but the participants are taught to communicate clearly and effectively with the horses using their focus, energy and intention rather than pulling on ropes or pushing the horses.

The equine-assisted processes embed core skills such as self-calming, assertiveness, focus and planning, which are built rapidly through action-based learning with skilled facilitators and highly trained horses. The ReStart is unusual in that it relies heavily on teaching these skills through rehearsal in a task-based context with the horse, and actively avoids a talk-based approach.

- Anonymised case notes for five representative families in the study.
- Written and/or video reflections from the group of facilitators employed in the study.
- Written and/or video reflections from the families who participated in the study.

\* All video footage and photographs will have appropriate consent, or can be blurred in accordance with conference preferences. All case notes will be fully anonymised.

**Results:** Reflections on the ‘active ingredients’ of the intervention, the journey of change and how it is experienced by the participants.

**Conclusions:** Typically, DVA interventions are talk-based and focus on both psycho-social skills and specific risks and triggers for abuse. This study suggests that an action-based non-DVA-specific intervention could be as or more effective than existing talk-based programmes. This is an important opportunity for future practice both in DVA services and in the Equine Assisted sector.

Keyword: DVA, Domestic violence and abuse, Equine-assisted

## OPVII-1-2

Topic : **Disabilities > What's New in Children**

### Therapeutic Riding (TR) for Children with Different Diagnosis Categories

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**Background/Aims:** The effectiveness of Therapeutic Riding (TR) physically is well known, and more recently effects for psychological issues have begun to be investigated. There is now much evidence for beneficial psychological effects of TR (and other activities involving horses) for those with Autism Spectrum Disorders (ASDs), but there has been less research into outcomes for other special needs. This study builds upon prior research by more specifically investigating the psychological and emotional effects of TR with children from different diagnosis categories.

This study was run to investigate the psychological and emotional effects of TR for children with a variety of special needs. It was anticipated that analyzing results by category of diagnosed disorder would show whether certain disorders, or particular aspects of any disorder, were specifically affected by participation in TR.

**Methods:** The study used a within subjects design of pre-treatment versus post-treatment comparison, with measures at four time points across three courses of TR sessions. A convenience sample of children with diagnosed special needs, enrolled for TR sessions, were recruited via the local TR centre, SARI Therapeutic Riding. Participants were subdivided by diagnosis into three groups: Autism Spectrum Disorder, Developmental Disability, “Other” (e.g., Down syndrome, Fetal Alcohol Spectrum Disorder – FASD).

Participants engaged in three sets of 10, weekly, TR sessions. Data was collected through parental questionnaires and researcher observational checklists. Parents completed an adapted version of the “Camper Growth Index – Parent Survey” (CGI-P; acacamps.org), modified for use with weekly TR sessions, at pre-course and post-course time points (four in all). Parents could add written comments regarding the TR sessions and outcomes at the end of the questionnaires. The researcher completed pre-, and post-course checklists, adapted from the ACA Camper Growth Index – Observational Checklist (CGI-O). All measures were scored on 4-point Likert scales ranging from 1 (strongly disagree) to 4 (strongly agree).

Resulting data was subject to quantitative analysis of parental questionnaire responses and researcher observational checklist scores. This quantitative data was analysed with within- and between-factor ANOVAs. Qualitative data (parental survey comments) was also examined, giving more in-depth information on the participants’ experiences.

**Results:** Due to the low numbers in diagnostic categories other than ASD and the large number of participants with an undisclosed diagnosis, participants were divided into two categories for analysis: ASD and Other. For all participants, improvements in scores on pre- versus post-session measures were found. Significant improvements were seen in positive identity constructs such as self-esteem, however results for other constructs were more variable. Some other domain categories approached significance (Leadership, Positive Values and Physical Skills), but none of these other domain categories showed statistically significant effects. Findings regarding the ASD group were in line with other studies, with significant improvements for the ASD group in self-esteem and in peer relationships.

**Conclusions:** Although further research in this area, with larger participant groups, needs to be done it can be concluded that TR is a beneficial activity for children in all diagnostic categories, with particular social-emotional benefits for those with ASDs.

Keyword: Children, Therapeutic riding (TR), Diagnosis categories

## OPVII-1-3

Topic : **Disabilities** > **What's New in Children**

### Novel Adaptive Riding Intervention for Youth with Anxiety: Fidelity Outcomes

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**Background/Aims:** Rates of anxiety are increasing, and half of children with anxiety do not receive needed treatment (Whitney & Peterson, 2019). Novel treatments are needed to expand the availability of and facilitate engagement in treatment. Equine-assisted services have shown promise in improving children's mental health issues, including anxiety. However, there are currently no manualized, evidence-based, equine-assisted services that have been rigorously studied for youth with anxiety (Latella & Abrams, 2019). The purpose of this study is to examine fidelity of delivery of "Reining in Anxiety", a novel adaptive riding intervention for youth with mild to moderate anxiety.

Reining in Anxiety is a ten-session, manualized intervention that combines evidence-based practice components found to be effective for treating youth anxiety with progressive horsemanship skills (Acri et al., 2019). The intervention was designed to be delivered by Professional Association of Therapeutic Horsemanship International (PATH)-certified therapeutic riding instructors (CTRIs), who are trained in teaching horsemanship and understanding disabilities, but typically do not have any formal mental health training.

**Methods:** A pilot trial of Reining in Anxiety was conducted in a random sample of 41 youth (ages 6 to 17) with mild to moderate anxiety and their parents. Children were assigned to either the intervention group or control group (standard adaptive riding group). Three PATH CTRIs were trained in Reining in Anxiety, and two actually facilitated groups (one instructor was trained as a back-up in case of primary instructor absence). The instructors received a 3-day in-person training from a licensed, master's-level mental health professional who was also PATH-certified (and co-developer of the intervention). Instructors received implementation supports and weekly supervision throughout delivery of the protocol.

Fidelity assessment entailed raters using a yes/no rating of the delivery of a standard checklist of key elements for each session. In the first semester, fidelity checks were conducted on 100% of the sessions. Because the fidelity in the first semester was so high (98.7%), we conducted fidelity checks on 20% of lessons in the remaining semesters.

**Results:** Fidelity of individual sessions ranged from 93.3% to 100%, with a mean rating of 98.7%. Separate analyses of fidelity by instructor showed: Instructor 1 addressed 98.1% of the elements across the 10 sessions (range 88.9%–100%) and Instructor 2 addressed 99.7% of the elements (range 98.0%–100%). For 34% of the sessions for which fidelity was assessed, a second research team member rated the sessions. Inter-rater reliability was excellent,  $k=0.92$ .

**Conclusions:** These fidelity data confirm that the intervention was delivered as intended and attained a very high level of fidelity (98.7%), well beyond the threshold for high fidelity (e.g. > 80%) established in the literature (Garbacz et al., 2014). This pilot study is the first to demonstrate fidelity of delivery by PATH CTRIs of an adaptive riding intervention built upon evidence-based practices for treating youth with anxiety. The successful delivery of this intervention has important implications for expanding access to community-based mental health services beyond traditional mental health settings, potentially helping to address the gap between the need for and use of evidence-based youth mental health services.

Keyword: Adaptive riding, Youth anxiety, Fidelity



# COMPETITIVE POSTER SESSION



P-01

Topic : **Business > Terminology**

## Developing Quality Criteria and Modelling Impacts for Social Pedagogical Equine-Assisted Interventions in Finland

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Natural Resources Institute Finland, Researcher, Finland

**Case:** Social pedagogical equine-assisted activities are among the most established forms of animal-assisted interventions in Finland. The main goals of these interventions are in supporting social growth and well-being. The professional orientation for the practical work arises from human-horse interaction and the elements of social pedagogy: communality, experience and dialogue. Services are offered by a professional in education, social or health care or who has completed additional training in social pedagogy. As the orientation is used to work with different customer groups to meet a wide range of goals, verifying the quality and effectiveness has been challenging. There has been little impact study on the topic in Finland yet.

To respond this challenge, quality criteria and an effectiveness model were defined and published as a handbook. The main quality criteria were defined as follows: adequate professional competence and horse skills of the instructor in relation to the service provided; implementation of social pedagogical orientation in the description of the content of the intervention; defining customer goals for intervention and monitoring their implementation; knowledge of cooperation networks; safety aspects of the operating environment; knowledge of laws and regulations; ethics and well-being of horses.

The introduction of quality criteria strengthens the professional and high-quality implementation of services, which is of paramount importance when providing educational, social and health care services.

In addition, an impact modelling tool was combined with the quality criteria. It allows



each instructor to model the effectiveness of their own service. In this model the impact of the intervention is verified using an impact chain, which is initially a hypothesis but is supplemented when data about effects are accumulated. This accumulating data of impacts can be used in future research.

The handbook serves not only as a source of information on quality management and effectiveness assessment of service providers, but also as a learning material for education in the field and as a tool for co-development between training organizations. The Social Pedagogical Equine-assisted Activities Association utilizes the handbook when awarding a trademark to services that meet the quality criteria. In addition, the handbook is also suitable as a tool for considering the quality and effectiveness of other types of equine-assisted activities and for planning services.

Keyword: Social pedagogical equine-assisted intervention, Quality criteria, Impact modelling

P-02

Topic : **Disabilities > At Risk Youth**

## The Effects of Equine Assisted Learning on Improving Maladjustment Behaviors of Students in Juvenile Reformatory School

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**Background/Aims:** The purpose of this study is to analyze the effects of Equine Assisted Learning (EAL) activities on improving maladjustment behaviors of students accommodated in the juvenile reformatory school under the Korea Ministry of Justice crime prevention policy.

**Methods:** Twelve subjects were selected who presented difficulty or maladjustment behaviors in living in a group facility at J Juvenile Reformatory school, whose main issues pertained to ADHD incongruity behaviors. Equal numbers of study participants were then assigned to either experimental group or control group, of which only the members of the experimental group participated in the equine-assisted activities and therapeutic riding for a total of 12 times (once a week for 12 weeks). To evaluate the effectiveness of the program, psychological changes especially in the domains of level of self-control and impulsivity were examined before and after the program.

**Results:** Results showed that the equine-assisted activities significantly lowered the degree impulsivity and improved self-control (pre impulsivity  $M = 3.65$ ,  $SD = .62$ , post impulsivity  $M = 2.74$ ,  $SD = .67$ ,  $p < .05$ ); pre self-control  $M = 2.42$ ,  $SD = .29$ ; post self-control  $M = 3.33$ ,  $SD = .80$ ,  $p < .05$ ).

**Conclusions:** Findings suggest the usefulness of incorporating equine assisted learning activities in the juvenile reformatory school curriculum to improve maladjustment behaviors and interpersonal skills for better social adaptation ability and decreased recidivism.

Keyword: Equine assisted learning, Maladjustment, Juveniles

P-03

Topic : **Disabilities > At Risk Youth**

## Effects of Using Convergence Horseback Riding Program on the Emotion·Behavior Development, Anxiety, Depression and ADHD in Adolescent

Yun Jae PARK\*

Secretariat, Gyeonggi-Do Equestrian Association for the Disabled, Korea

**Background/Aims:** In order to support the normal development of adolescents in the group of interests who have adolescent mental health problems, it is necessary to study the effect of horseback riding exercise consisting of various programs including physical activity and communion with animals on the teenagers in the group of interests.

**Methods:** This study recruited students in need of the emotional and behavioral characteristics test as interest group from the 'Online Survey of Youth Health Behavior'.

The subjects were randomly divided into 24 horseback riding exercise groups and 24 horseback riding machine exercise groups.

For both the horseback riding exercise group and the horseback riding machine exercise group, a total of 24 programs were conducted twice a week for 12 weeks, and each exercise time was performed for 60 minutes.

**Results:** To secure the homogeneity between the horse riding exercise program and the horse riding machine exercise program for adolescents, the results of comparing the scores of the youth emotional and behavioral development screening scale, anxiety scale, depression scale, and ADHD scale of the two groups before the program were implemented. There was no significant difference. Thus, it was confirmed that they were the same group.

To find out the effect of the horseback riding exercise program on the emotional and behavioral development of adolescents in the target group, we analyzed whether there is a difference in the scores measured repeatedly across the 2 groups and period. Results measured by a two-way analysis on adolescent emotional and behavioral development scores, the group's each effects showed a significant difference at the time of measurement.

To find out the effect of the horseback riding exercise program on the anxiety of the target group, an anxiety score was analyzed. As a result, there was a significant difference at the time of measurement in the scores repeatedly measured across the 2 groups and period. The result ran by binary variance analysis showed each effects between the group and the measurement period.

To find out the effect of the horseback riding exercise program on the depression of the target group whether there is a difference in the scores repeatedly measured across the 2 groups and period, the result by binary variance analysis showed each effects between the group and the measurement period. There was a significant difference in the measurement period.

To find out the effect of the horse riding exercise program on ADHD of the target group whether there is a difference in the scores repeatedly measured across the 2 groups and period, the ADHD score was analyzed. As a result of the two-way variance analysis, each effects showed a significant difference at the time of measurement.

**Conclusions:** Both the horseback riding exercise and the horseback riding machine exercise program conducted in this study had a positive effect on emotional and behavioral development, anxiety, depression, and ADHD, and it is acknowledged that the horseback riding exercise had a more positive effect than the horseback riding machine exercise.

Keyword: Horseback riding program, Emotion, Behavior, Anxiety, Depression, ADHD, Convergence

P-04

Topic : **Disabilities > At Risk Youth**

## Effects of Using Convergence Horseback Riding Program on the Emotion·Behavior Development, Anxiety, Depression and ADHD in Adolescent

Yun Jae PARK\*

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Keyword: Horseback riding program, Emotion, Behavior, Anxiety, Depression, ADHD, Convergence

P-05

Topic : **Disabilities > At Risk Youth**

## Equine Assisted Therapeutic Programming for Youth Excluded from School

Nancy WINTON\*

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**Case:** The equine assisted therapeutic programming (EATP) provided to the client in this case study included: therapeutic riding, H.E.A.R.T equine assisted learning, and education related to horse care. Programming was provided between February and March 2021 and consisted of 7 full day, weekly sessions, for a total of 42 contact hours.

The client was a 12-year-old male currently homeschooled due to difficulties at several schools, including state and specialist schools in England. This client has a diagnosis of Attention Deficit Hyperactivity Disorder (received at age 5), Autism Spectrum Disorder (received at age 11) and calcaneal apophysitis, also known as Sever's disease (which causes joint and muscle pain). Horseback riding was recommended by an Occupational Therapist for sensory and proprioceptive input. This client also experienced the bereavement of a close grandparent in 2018, severe anger outbursts, extreme bullying when attending school, and a severe mental health crisis for 12 months during 2020/2021.

Programming was delivered by the author, Nancy Winton, who holds England's Qualified Teacher Status and a certificate in equine science. She is a PATH International Therapeutic Riding Instructor, a trained facilitator in three models of equine assisted learning, and a Forest School Leader.

The therapeutic riding involved the client spending time grooming a horse before riding. The client learned basic riding skills.

The H.E.A.R.T Equine Assisted Learning model, developed by Wendy Price-Frimin,

is based on the values of:

- Harmony: Choose peace over conflict.
- Empathy: Seek to understand everyone's point of view.
- Accountability: Be responsible for your choices and actions. Allow others theirs.
- Respect: Respect yourself and others.
- Truth: Speak your truth with kindness. Live your life with integrity.

Learning about horse care included health [e.g. farrier care] and stable management [e.g. mucking out, feeding].

Outcomes experienced by the client included a decrease in severe anger outbursts at home, an increase in self-confidence, recognition of self-improvements, and hope for the future.

The client experienced severe anger outbursts at home, where police were called out to the home, during the first 3 weeks of attending the EATP but during weeks 4 through 7 there were no incidents of having to call out police to the home and mum reported that the client was better able to talk with her about when he was not feeling right. The client became better able to recognise that he was not feeling right, but did not have the words to label the feelings. Learning to understand and label different emotions is a recommendation for further intervention.

The client was able to express pride in himself for accomplishing the task of rising trot in 7 weeks, saying he was proud of himself. He also commented on how far he has come in the past year. His mum noticed a marked difference in the way her son carries himself, having improved his posture and standing more upright rather than slouched over. He has plans to study to become a farrier saying that this would bring happiness for him.

Keyword: At risk youth, Equine assisted learning, Social emotional wellbeing



P-07

Topic : **Disabilities > Autism Spectrum Disorder**

## Case study of Equine Therapy Based on Psycho-Motologie for Children with Developmental Disability

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<sup>2</sup> Coach, Steven Horse Riding Club, Korea

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<sup>5</sup> Director, Dodream Psychology Support Center, Korea

**Case:** The aim of this case study is developing equine therapy programs based on psycho motologie for children with developmental disability. Our study team is consisted of experts of various fields and young riders. Specially one of our young member is a very clever boy with autism. The lead researcher is an expert who worked for the human rights of people with developmental disabilities. She is president of Korean-German Society for Motologie. Psycho-Motologie is based on education and therapy methodology used in Germany since 1950s invented by Kiphard. Psycho-Motologie movements have a theoretical basis for understanding the mechanisms of internal development, such as human psychology and cognition, through basic movements. Psycho-motologie consists 3 concepts. First physical experiences that help improve self-concept, second material experiences that help understand substances, and third social experiences that help improve social interactions skills. If psycho-motologie exercise is added to equine therapy, it can help improve the theory and methodology of equine therapy. Our team started the development of this preprogram from November 2019. This preprogram was conducted by Steven horse riding Club. We started from 7th November to 29th November. This program was consisted of 4th times riding. Every session was

composed of 3 hours for 27 special middle school students. The result of the preprogram was successful.

- We proceeded by showing movements before starting each sessions or performing new tasks, they could recognized it and make their own movements.
- Through the process of mounting a horse, riding, then dismounting we observed the rider's movements and supported them to make their own movements with minimal support and encouragement.
- We provided connection with the horse through letting the riders to hold the reins leading to a better understanding and control of the horse movements.
- Games that use various items such as reins, balloons, clothespins, gym balls, and other various games that develop a sense of curiosity and social interactions. All of this interactions are supported so that the rider can make various movements in a fun way through play.
- As a result, all 27 children with disabilities succeeded in riding on their own.
- All of children have severe disabilities, few of them were afraid of animals.
- Children who succeeded in riding themselves expressed their proud and overwhelming mind for a long time through various movements and facial expressions.
- Twelve of their teachers who helped with the program said 'A miracle has happened'.

Our team has been developing and implementing a 12-sessions program for three elementary school students with autistic spectrum disorder from March 2021.

This new program is in correlation with the effectiveness verification. Effectiveness verification will be carried out in five areas of improvement in physical coordination, sensory integration, sociality, communication, and emotions.

Keyword: Psycho motologie, Developmental disability, Equine therapy

P-08

Topic : **Disabilities > Autism Spectrum Disorder**

## Effects of the Participation in the Rehabilitation Horseback Riding Program on Sleep for Individuals with Autism Spectrum Disorder

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**Background/Aims:** Sleep is an important activity that makes up the majority of the life time and has a direct impact on health. Sleep also has a direct impact on the performance of other activities of daily life and contributes to improve the level of performance, especially in the case of cognitive activities and functional movements. In addition, it is a very important part to evaluate and manage sleep in the process of rehabilitation for the people with disability, with a peculiarity to be performed by oneself, which is different from the other activities of daily life. Therefore, this study aimed to investigate the effect of the participation in rehabilitation horseback riding program on the sleep, and to provide the basic data by analyzing the sleep of individuals with autism spectrum disorders.

**Methods:** This study subjects consisted of 10 individuals with autism spectrum disorders residing in a residential care facility for the people with intellectual disabilities. They participated in the 12 weeks rehabilitation horseback riding program regularly. To investigate the effects of participating this program on sleep, subjects' sleep time, wake-up time, total sleep time and wake-up frequency during sleep were measured. Descriptive statistics and Friedman test were conducted to analyze the change the sleep.

**Results:** As a result of analysis, it was found that the sleep time came earlier, the total sleep time increased, and the wake-up frequency during sleep reduced and those results showed statistically significant difference through the participation in rehabilitation horseback riding program.

**Conclusions:** Therefore, the rehabilitation horseback riding program participation was shown to have a positive effect on the subjects' sleep. Since the application of this program can act as a positive factor in the sleep of the participations, it is expected to be used as an in-facility program for the residents with autism spectrum disorders.

Keyword: Autism spectrum disorder, Rehabilitation horseback riding, Sleep

P-09

Topic : **Disabilities > Cerebral Palsy**

## Influence of hippotherapy on motor symptoms in spastic paralysis.

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**Background/Aims:** The main goal of physical rehabilitation is to increase the patient's mobility and the degree of self-care by improving motor functions. Hippotherapy and adaptive riding are widely used in pediatric rehabilitation to correct movement disorders in upper motor neuron syndrome due to the influence of the biomechanical factor of horse stride.

The goal of our study is to assess functional changes in motor symptoms after undergoing a course of hippotherapy.

For this, a group of 10 people of different ages (4–17 years old) with cerebral palsy of varying severity was selected. Voluntary contraction of paired muscle groups was assessed in this group with registration of global EMG and peripheral temperature before and after a course of hippotherapy (22 sessions 3 times a week).

The conclusion about changes in motor symptoms: an increase in muscle contractility, decrease in synkinesis and increase in exercise tolerance was made on the basis of a comparative assessment of electromyography data (generation frequency and amplitude of action potentials) and peripheral temperature.

**Methods:** To study qualitative changes in motor symptoms, a functional test of voluntary contraction of two paired muscle groups with simultaneous registration of interference electromyography and temperature parameters was carried out. With an increase in the strength of muscle contraction, not only the amplitude of electrical vibrations, but also the frequency of generation of action potentials increases.

Simultaneous accounting of these two indicators in the integral EMG allows it to be considered an indicator of muscle tone with a sufficient degree of accuracy.

The test consisted of 10-second "sessions" of alternating muscle contraction and retention of tension, rest and contraction of a parallel muscle group for 5 minutes. In addition to muscle tone and strength of muscle contraction, EMG monitoring of the interaction of paired muscles allows us to determine the presence of pathological synkinesis.

Registration and statistical processing of EMG and peripheral thermometry data was carried out using the BOSLAB BI-122 software and hardware complex (Komsib, Russia).

**Results:** After completing the course, the following changes in motor symptoms were recorded:

An increase in the strength of muscle contraction from 13 to 354%

Strength increase on one side only (2 out of 10 people) 20%

Strength increase on both sides (5 out of 10 people) 50%

Reduction of synkinesis from 3 to 91%

On one side (5 out of 10 people) 50%

On both sides (4 out of 10 people) 40%

Increased exercise tolerance (7 out of 10 people) 70%

Normalization of muscle tone (5 out of 10 people) 50%

**Conclusions:** Hippotherapy is a rehabilitation method that improves the motor function of a patient with spastic paralysis, which is objectively confirmed by the analysis of physiological parameters (EMG and temperature) in the study of voluntary contraction of paired muscles before and after a course of hippotherapy.

EMG research can be used to determine a specific, real goal of the course for each patient in accordance with his physiological parameters and to draw up an individual program.

EMG indicators of the study quantify the effectiveness of the course.

Keyword: Hippotherapy, Cerebral palsy, Electromyography

## P-10

Topic : **Disabilities > Cerebral Palsy**

### Dream of Starting Again with Rehabilitation Horseback Riding

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**Background/Aims:** My case is a brain lesion (cerebral palsy) grade 3, and it can be said that I have both congenital and acquired disorders. Although I was born with a disability. It can be said that this is a case where the body becomes uncomfortable again after surgery. Fortunately, the operation was not unsuccessful, but after the operation in 2018, the rehabilitation continues

Walking before surgery was tiptoe walking. When I was 24 years old, I had surgery to extend the knee muscles, and after performing the surgery, I wore a cast from the top of the toe to the top of the thigh for a month and a half, and the original muscles were weakened even more. The day after I took off the cast, it was difficult to get up, so I dragged my body out.

**Methods:** The date the surgery began January 2, 2018

The first was to use a four-legged walker with wheels to move around 10m in front of the house, because there was no strength in the muscles. It was severe to depend on the cane.

Second, after 8 months after the operation, I had to roam more than 20m, but I had to rely on a wheelchair. Since I was a child, I had experience riding a bicycle, so I was able to use an electric bicycle to get around the city.

Third, after a year and a half after the operation (April 2019), it was possible to drive freely by stepping on a car other than a car for the disabled. I didn't depend on a wheelchair.

Fourth, two years after surgery (2020.2), I encountered rehabilitation horseback riding, and I walked naturally with my two-legged cane, and I am doing water rehabilitation and hospital treatment together.

**Results:** When I was tired of rehabilitation time for more than 4 years, it was rehabilitation horseback riding that gave me a new way.

It is a case where physical and mental treatment can be simultaneously performed by horseback riding. Through horseback riding, the strength of the thigh is strengthened and the effect of posture correction was felt. After riding, I try to walk without stopping for more than 30 minutes immediately to remember this sensation.

**Conclusions:** After surgery, rehabilitation takes a long time, but I know that my quality of life will improve, so I try to continue without giving up. As mentioned above, I spoke as a person who suffered a disability twice, and because of social trauma, I abandon my dream of a librarian, and I am trying to become this disabled horseback riding player and coach who can work with rehabilitation.

Keyword: Equestrian for the disabled, Brain lesion, Handicapped riding coach



## P-11

Topic : **Disabilities > Intellectual Disability**

### Effects of Therapeutic Healing Riding on Problematic Behavior and Sleep Stability of People with Intellectual Disabilities

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**Participants:** 11 people with intellectual disabilities participated in the Therapeutic Healing Riding program twice a week for about two months from July to September 2020. The data from 8 participants were analyzed and the data of 3 participants who did not participated in the overall measurement were excluded in analysis. The design applied to the study was selected according to the conditions under which the factor-wise design for a single group should be applied and the number of cases should be the same for each condition. In addition, during the program participation process, in-depth interviews were conducted on problematic behavior and sleep stability of participants and their parents. The consent to participate in the research was verified and documented three times in total.

**Research design:** The experimental design for the study was Factorial ANOVA Design with a single-group iterative measurement design.

The survey questions measured the participants' interest in Therapeutic Healing Riding, their problematic behavior and sleep stability. The internal consistency reliability of the two-way mixed model yielded Chronbach  $\alpha=.73$  for 1st measurement,  $\alpha=.73$  for 2nd measurement and  $\alpha=.50$  for 3rd measurement.

**Data analysis:** Verification of the research hypothesis was an ANOVA analysis to verify interactions, main effects, and simple main effects. The 2-tailed Levene's test was used to verify the homogeneity of variances of the groups at  $\alpha=.05$ .

## Research result:

(1) Interaction analysis between gender and three trials on the participants' interest in Therapeutic Healing Riding yielded  $F=.388$ ,  $p=.684$ ,  $\text{Eta}^2=.041$ . It was not statistically significant and no interaction was shown, so the main effects of gender and 3 trials were verified. The difference between main effects verification results was  $F=.721$ ,  $p=.500$ ,  $\text{Eta}^2=.074$ . There was no statistically significant difference of gender differences as  $F=1.760$ ,  $p=.201$ ,  $\text{Eta}^2=.089$ .

### (2) Problematic behavior

Analysis of the interaction between gender and three trials on problematic behavior showed that the effect of the interaction was no shown as  $F=.825$ ,  $p=.454$ ,  $\text{Eta}^2=.084$ . The main effects verification showed that the difference between trials was not statistically significant as  $F=.230$ ,  $p=.637$ ,  $\text{Eta}^2=.013$ . There was no statistically significant difference in gender as  $F=.107$ ,  $p=.899$ ,  $\text{Eta}^2=.012$  either.

### (3) Sleep stabilization

Analysis of the interaction between gender and three trials for problematic behavior showed that the interaction effect was not shown as  $F=.530$ ,  $p=.597$ ,  $\text{Eta}^2=.056$  and the difference between trials was not statistically significant as  $F=1.085$ ,  $p=.359$ ,  $\text{Eta}^2=.108$ . The difference in gender was not statistically significant as  $F=.838$ ,  $p=.372$ ,  $\text{Eta}^2=.044$  either.

Despite the quantitative analysis, In-depth interviews with parents showed that participants increasingly liked to participate in Therapeutic Healing Riding activities and expected that time every week. And while the guardians said it was difficult to assess the effectiveness of the program due to the short term of the program, they demonstrated the validity of the Therapeutic Healing Riding activities by stating that the participants were relatively stable in the days they came from the rehabilitation.

Keyword: Intellectual disabilities, Rehabilitation healing horseriding, Sleep stability

P-12

Topic : **Disabilities > Learning Disability**

## Equotherapy and Learning Disabilities

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**Introduction:** This article explores the origins of the Equine-assisted therapy (or Equotherapy) in the south of Brazil, specifically the Equine-assisted therapy Applied to Education program created in May 1999 by the team at Centro Osório de Equoterapia, referencing the works of Fernández, Donald Winnicott and Neide Diefenbach, as well as case studies observed by the author.

**OBJECTIVE:** Understanding how Equine-assisted therapy can function as a resource for children with learning disabilities in underserved communities.

**Method:** The focus group consisted of 30 students, with ages ranging from 6 to 18 years old, with various learning disabilities, from public schools in Porto Alegre. They had weekly sessions with an interdisciplinary team of professionals where they rode horses for 30 minutes at a time and spent the other 30 minutes working in groups of 5 in a multi-purpose pedagogical room. Our team also had systematic contact with their teachers to follow up on their progress.

**Result:** After attending Equine-assisted therapy sessions, children who were stigmatized in their classrooms for not living up to the institution's academic and social standards, went from students who did not feel capable of learning to being capable of teaching their colleagues about their new hobby. Developing a new skill helped them strengthen their self-esteem re-signify the role of "the other" in their own lives.

**Conclusion:** In a welcoming environment that differed from the atmosphere they found in their classrooms, we managed to harbor their enthusiasm for a new hobby while also helping them give new meaning to the act of learning.

Keyword: Learning disabilities, Equotherapy, Equine-assisted therapy

P-13

Topic : **Disabilities > Learning Disability**

## Equine-Assisted Therapy as an Inclusive Workshop at Full-Time Schools

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**Background/Aims:** The goal of this study was to verify the results of the Equine Therapy Assistance Program in Skills Development (PAEDHA), with third-graders in Elementary Education at a full-time school, going beyond its application as a therapeutic purpose, comparing the results of the Experimental Group (EG) to those of the Control Group (CG), in the variables: school performance, speech awareness and cognitive ability of attention. The social justification occurred due to the challenges that the full-time public school had in promoting a variety of activities and that these promote learning and school inclusion.

**Methods:** The research project has been approved by the Ethics Committee at Universidade Fernando Pessoa, in Portugal. Twenty children participated, 40% of whom were female, 60% were male, whose average age ranged between 8 and 9 (Male = 8.40; DP = 0.50). The people were placed into two groups. The EG 50% (N=5) of the participants were female, and 50% (N=5) were male. The CG, on the other hand, was female 30% (N=3), male 70% (N=7). Both groups enrolled in an EF I school in a city in the interior of the state of São Paulo, Brazil. Instruments used were: Attention Test for Cancellation (TAC); Dictation Writing Test (PED); Arithmetic Test (PA) and Phonological Awareness Test by Choice of Figure (PCFF). The workshop with the EG took place twice a week, lasting two hours, totaling 8 sessions, with service protocol based on PAEDHA strategies with a focus on learning. Data analysis took place in SPSS, mean comparisons were performed using the ANOVA test.

**Results:** in TAC, which assesses the attention variable, when divided by gender, there was an increase in the average of both genders in the EG, while in the CG there was a decrease in the average of the participants. In PED, when divided by gender, there was an increase in EG for both genders. In the CG, on the other hand, there was a decrease in the average for the female group and an increase in the male group. In arithmetic, when divided by gender, there was an increase in the average of both genders, whereas in the CG there was a decrease in the average of female participants and an increase in the average of male participants. In the PCFF, when divided by gender, an increase in the average was observed in the EG and CG participants in both genders. Nonetheless, the average increase was higher in the EG than in the CG.

**Conclusions:** PAEDHA can go beyond the therapeutic intervention for Learning Disorders. It can be a program that develops speech awareness skills with people who do not have a disability but are part of an (ETI) full-time school program. It can be used as an inclusive workshop in schools, contributing as one more way to make full-time schools promoters of full development through Equine-Assisted Therapy.

Keyword: PAEDHA, Full-time school, Full-time education

P-14

Topic : **Disabilities > Neurocognitive Disorders**

## An Experience through Healthy Equestrian Interaction. Improvement of Competencies in a Case of Dravet Syndrome.

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**Background/Aims:** In this project, we wanted to observe the improvement in the competence of a child with Dravet Syndrome, and his family, through the game and through a healthy equestrian interaction program. The goal of this project is to achieve knowledge in procedures dealing with Dravet Syndrome and study the improvement of the competence of a family through an EAAT procedure.

**Methods:** Coordinated with the family we set SMART (Specific, Measurable, Achievable, Relevant and Time-bound) goals such as (In order of importance agreed with the family):

- He had to enjoy and like the activity (He had to be motivated in doing it)
- Improve strength, self-esteem, and balance (General posture and back health)
- Improvement in reading and writing
- Order of numbers and mathematical and numerical concepts.

**Materials used:** An interactive video on the horsemanship routines, grooming kit, equestrian equipment, and mounted games material.

**Equines involved:** Two equines, capacitated for EAAT, from the riding school in Bilbao, and coordinated by iPoney Outdoor Spaces.

**Project development:**

Research in Dravet Syndrome characteristics; Interviews with the family helped us define and plan our field proposals. These works allowed a rigorous and creative approach to EAAT procedures.

Furthermore, a digital interactive video presenting the equestrian routines.

Fieldwork:

- 1 – The first connection with equines and space (Enjoy a horse ride)
- 2 – Horse dominoes (Have fun, understand the importance of collaboration)
- 3 – Treasure horse (Know horsemanship routines)
- 4 – Vaulting – Confidence & Balance (Body awareness)
- 5 – Control 1 – Back to the basics (Enjoy a horse ride)
- 6 – Mounted games training (Have fun, discover a horse sport)
- 7 – Arena circuit (Accompany the horse to the ground and mounted)
- 8 – 26/8 (The child and family decided the lesson that they most liked)
- 9 – Memory games (Pending proposal)
- 10 – Twister horse games (Pending proposal)

All sessions were registered following the Planification–Action–Reflexion tool. This tool has helped us, managing competence achievement: sharing our feelings and family impressions, improving our learning process management, and developing creative activities.

Planification – The initial outline of the proposals, objectives, procedures, and materials.

Action – Adapt routines to the personal needs on the field.

Reflection – We brought all of the data and comments and feedback of the family.

**Conclusions:** Out of our observations with the family, we can conclude that TWO out of FOUR SMART objectives have been achieved successfully:

- In general, they have enjoyed all of the proposals. Specifically, Vaulting was highly enjoyed.
- The family confirms an improvement in balance and posture, and that EAAT has been beneficial for the rider

The other two SMART objectives haven't been evaluated completely. The team thinks that these objectives should be worked interdisciplinary throughout all the proposals. Therefore, a redesign of our plan is to be considered. We have observed that programs should be dynamic in order to provide a safe space for families and riders. Facilitators and riders should share knowledge so that all individuals have a balanced opportunity to achieve the desired competencies.

Keyword: Dravet syndrome, Competence development, Equines.



P-15

Topic : **Disabilities > Neurocognitive Disorders**

## Brief Neuropsychological Assessment for Children in Equine Assisted Therapy and Activities

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**Background/Aims:** This study presents the stages of construction of the Brief Neuropsychological Assessment for Children in Equine Assisted Interventions (Bateria Infantil de Avaliação Neuropsicológica para Atividade Equestre – BIANEQ). The battery was designed to evaluate neuropsychological functions in children aged 6 to 12 years old while those are riding on horseback and engaged on equine assisted therapy or activities. The application of BIANEQ takes approximately 35.5 minutes, it comprehend 6 neuropsychological functions as: orientation, memory, language, attention, executive function and praxia distributed in several tasks. Neuropsychological assessment aim to examine the cognitive consequences of brain damage, brain disease, and severe mental illness thought a standardized procedure and interviewing techniques. Although BIANEQ is a standardized battery it has an intrinsic relation with horse environment and equine assisted interventions. In orther to have an adequate way to evaluate children ability to ride, engage in horse interventions and develop cognitive abilities as executive functions, language, memory, attention; the face validity has been done and we presents the phase of expert judges' analysis in this study, well known as the content validity os a test.

**Methods:** The intrajudge reliability was measured within a five point Likert scale (1= very bad; 5= very good) over four domains (specificity, widnes, applicability and score). The agreement index was determined thought Prevalance and Bias Adjusted Kappa–Ordinal Scale (Pabak–OS), as confidence interval we adopted 0.8 as strong agreement between raters.

Further analyses was used to enhance the instrument, so content analyses and a frequency analysis were done to determine changes in BIANEQ.

Participants: six psychologists experts in psychological assessment and measure, five Master in psychology and one PsyD.

**Results:** All the 48 items of the instrument were analyzed, the judges were unanimous and scored as 5 (very good) in applicability (orientation, language, memory), score (oral named and reading words and pseudo words in language), and specificity (memory). However, the worst results were found in witness of the attention construct (mean = 3.8, SD = 0.75). Overall mean of the BIANEQ was 4.79 (SD = 0.52).

**Conclusions:** The contribution of the specialists lead us to insert a new neuropsychological function, praxia, which we didn't realized at the beginning but very important to safe riding and to daily life activities. Other tasks were enhanced as new scores, new items in memory, language, attention, executive functions and mainly orientation.

This brief battery is innovative and allows therapists and educators to evaluate children during equine assisted intervention, in only one class/section. BIANEQ is not a test to apply inside the office, its ecological validity helps to screen which child need further assessment and lead to plan the intervention in specific aims.

Keyword: Equine assisted intervention, Neuropsychological assessment, Psychometrics

P-16

Topic : **Disabilities > Neurocognitive Disorders**

## Hippotherapy and Massage Therapy: A Valuable Co-Treatment

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**Background/Aims:** During hippotherapy, the movement of the horse facilitates neurological coordination and cognitive improvement for the person on the horse. During massage therapy, the sensory stimulation of the body facilitates muscle tone and elasticity as well as psychological relaxation and improvement in mood for the person receiving the massage. In this presentation, a speech-language pathologist with expertise in hippotherapy and a massage therapist with expertise in equinoterapia will discuss how they integrate these two areas within treatment sessions for children with communication disorders.

**Methods:** Application of hippotherapy and massage therapy will be discussed with references to children with communication and swallowing disorders. Different speech-language pathology session activities with the massage therapist on and off the horse will be described.

**Results:** Specifically, we will describe how massage therapy prepares the client to receive the most benefit from equine movement and can be used before, during, and after the treatment session to help move the person toward their treatment goals.

**Conclusions:** The integration of massage therapy with hippotherapy has been successful in helping children with cerebral palsy improve their communication and swallowing abilities.

Keyword: Hippotherapy, Speech-language pathology, Cerebral palsy

P-17

Topic : **Disabilities > Neurocognitive Disorders**

## Neurozootherapy: Transdisciplinary Therapeutic Model in Animal Assisted Interventions for patients with Neurocognitive Disorders

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**Background/Aims:** The multidisciplinary approach is usually used in the field of AAI, obtaining very favourable results, therefore it is proposed to show the approach and the highest effectiveness of the Transdisciplinary Model in the AAI field; because "the whole is more than the sum of its parts".

**Methods:** It relates and converges three disciplines (Psychology, Physiotherapy and Special Education) to enhance the biopsychosocial areas of the lives of the patients through the Animal – Human Bond and the recognition of Animal Welfare and the “Five Freedoms”.

As a systematic methodology, the first step is to introduce the patient with neurocognitive disorder to the AAI world; followed by this, the patient's family is assisted and it's time to show a healthy way to manage the patient's disorders and to improve the family dynamic and structure.

The intervention ends with the re-education of the patient and family, helping brain neuroplasticity throughout the process.

**Results:** Promotes the Independence and selfcare for the development of the patient Human Daily Life Activities, as well as their healthy social relationships and family dynamics.

**Conclusions:** The AAI field give the chance to take advantage of the sensory richness offered by an open space scenario that promotes flexible learning, the modification of family interaction, the importance of respect and care for the environment, stimulating empathy to all living beings.

Keyword: Neurozotherapy, Transdisciplinary, Neurocognitive disorders

P-18

Topic : **Disabilities > Others**

## The Application of Sensory Integration within the Field of Equine Facilitated Therapy

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**Background/Aims:** The purpose of this poster is two fold:

- (1) to raise awareness of sensory integration and how this relates to the behaviour of the horse, the client and the therapist thus impacting on this three way relationship.
- (2) to highlight the sensory based benefits of engaging in equine facilitated therapy.

**Methods:** Introduce sensory systems: equine and human

Introduce the concept of the three way relationship in equine facilitated therapy and its connection with sensory integration.

Explore the sensory based benefits – regulation of arousal, modulation, discrimination and praxis.

**Results:** Raised awareness of sensory integration and its application in this field

Raised awareness of the sensory based benefits to be gained by engaging in equine facilitated therapy

**Conclusions:** Applying sensory integration theory in the field of equine facilitated therapy adds valuable to the therapeutic outcome for the client.

Training in sensory integration is of value to Allied Health Professional practicing in Equine Facilitated Therapy as it allow a deeper understanding of self at the therapist, the client and indeed the horse and the horse environment.

Keyword: Sensory integration, Equine facilitated therapy, Three-way relationship

P-19

Topic : **Disabilities > Others**

## Children practicing the Equotherapy (EAT) X Parents and Caregivers Perception of Burden

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**Background/Aims:** This study is on one hand an investigation on parents and caregivers of children with disabilities about their feelings and perceptions of burden and overload that usually come along with the duties and the stressful situations that they have to deal with while being responsible for their dependent children's wellbeing on a daily basis. On the other hand, this study aims at verifying the probable influences that the children's evolution on the practicing of the Equotherapy (EAT) might induce in their parents and caregivers initial burden or overload perception.

**Methods:** The authors chose the 'Zarit Burden Interview – Standardized Questionnaire' (Scazufca, 2002.) as the instrument of investigation comprising 22 questions about Health, social, family and personal life, financial status, emotional wellbeing, interpersonal relationships and environmental aspects of the lives of 21 subjects that were either parents or caregivers of 21 individuals aged between 4 and 20 years, all participating of the Equotherapy (EAT) therapeutic activities in 2 Centers of Equotherapy in Brazil. The children integrated 2 groups with 11 and 10 individuals respectively, being attended by the 2 local teams of professionals certified by ANDE-BRASIL being both constituted of a Physical Therapist, a Pedagogue, a Psychologist and a professional of Equitation, for 30 minutes per week, along a period of 16 weeks or 4 months. A protocol was assigned to the teams so that the program sequence would respect the natural rhythm of the children on executing the

exercises. Before answering the questions of the questionnaire all subjects voluntarily signed a 'Term of Acceptance'. The questions were made (read) to one parent or caregiver of a child in the Equotherapy program at a time by the Psychologist and these were then registered also by this professional. The first assessment took place on a time previously scheduled with the subjects during the first 2 weeks of the children's Equotherapy practices process. The second assessment took place at the end of the 3rd month and beginning of the 4th and last month of this investigation. All data was then submitted to a comparative analysis through statistical and qualitative treatment.

**Results:** The 't' Student Test was applied to the data to compare the statistical averages obtained and the result has been considered statistically significant ( $P < 0,05$ ). The outcomes of this investigation also demonstrates that the subjects have achieved the lower levels of burden or overload perception by the second assessment occasion in comparison to their answers about their perception of burden at the first assessment moment.

**Conclusions:** The Equotherapy practicing in Brazil, following ANDE-BRASIL guidelines, has been reported through several national scientific studies as an effective method of rehabilitation of individuals with mental or physical disabilities. The outcome of this investigation has brought to light another benefit of the Equotherapy (EAT) method that is directly linked to the wellbeing of parents and caregivers of children that practice this therapy, suggesting that for being able to 'see' their children's positive gains of abilities through Equotherapy practice may reduce their fears about their future.

Keyword: Equotherapy, Zarit Burden interview, Burden perception



P-20

Topic : **Disabilities > Others**

## Application of Hippotherapeutic Practice "Finding the Sixth Sense" in Riders` Diagnostics

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**Background/Aims:** Proving the possibility of using hippotherapeutic practice "Finding the sixth sense" as the diagnostic method, aimed at the identification of phobias, related to horse riding, structural disorders of pelvis and spinal cord, sport horse riders' vestibular disorders. Spatial disorientation, inadequate perceptual sense, balance disorder, panic attacks, fear attacks, loss of consciousness during blindfolded horse riding with music can be caused by the structural pelvis and spinal cord's dysfunctions, autonomic nervous system's disorders, vestibular disorders, phobias, related to horse riding.

**Methods:** A blindfolded rider rides at a walk on a horse, accompanied by two belayers, the horse are controlled by a leader. At the same time, assistants with different musical instruments are creating sound effects, moving around the arena space. The rider is deprived of the visual analyzer, the auditory and the vestibular analyzer are partially disoriented, so the rider's brain needs to maximize the use of deep proprioceptive sensitivity to maintain balance and orientation in space. It causes faster development of the vestibular apparatus and proprioceptive sensitivity. To find out the reason of the different sensations in riders a special study (with the use of additional tests and a questionnaire) was conducted, in which 45 women engaged in horse riding at the amateur level took part

**Additional tests:**

- The Romberg test on the ST-150 stability platform
- Test for the autonomic nervous system, measuring the pulse while sitting and standing
- Trendelenburg test for determining the functioning of the pelvic stabilizer muscles
- Vest test for determining the block in the sacroiliac joints.
- Standing and sitting flexion test for determining the block in the CPSU
- Test "Rhombus Michaelis"
- Functional manual-muscle testing of the deep pelvic muscles
- Palpatory examination of the pelvic floor muscles

**Results:**

1) The rider experiences unusual sensations, such as: riding in a small circle in one direction only, riding backwards or downhill.

This is always accompanied by some somatic dysfunctions of the pelvis, scoliotic postures, or pathological attitudes of head. – 65% of the participants.

2) The rider experiences dizziness, loss of consciousness, changes in the perception of the speed of movement – it indicates an imbalance of the vestibular device, in some cases with disorders of the ANS. – 15% of the participants.

3) The rider experiences fear, anxiety, a panic attack, – as a rule, this indicates hidden phobias associated with riding. – 5% of the participants.

4) The rider doesn't experience anything unusual. It might be due to hyper control or with a good fit on the horse, working with the horse through the pelvis. – About 10%.

All aforementioned disorders can also be combined in one rider.

**Conclusions:** Plenty of riders experience difficulties while working with horses, blaming the animal and not pointing out their own psychical, mental and psychological issues. The “Finding the sixth sense” method helps to point out the issue, related to work with horse, in yourself. After the diagnostics with usage this method riders can seek help from a specific doctor, such as manual therapist, psychotherapist, et cetera.

Keyword: Rider`s health, Diagnostics, Proprioceptive sensitivity

P-21

Topic : **Disabilities > Others**

## COVID 19: Equine-Assisted Psychological Help for Health Professionals during the Covid-19 Emergency. The Case of the Niguarda Hospital in Milan, Italy

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**Background/Aims:** The spreading of SARS-CoV-2 triggered an unprecedented health and humanitarian emergency for anyone who experienced it.

The Niguarda Hospital was involved in the management of the emergency and provided Covid-19 patients with medical care and hospital staff with psychological support as early as the spring of 2020.

Assessments carried out on the psychological impact of the pandemic on healthcare professionals namely called for dedicated and multifaceted interventions in a timely manner.

Niguarda’s Clinical Psychology Service department developed a project on equine facilitated psychological support, an initiative facilitated by the hospital’s in-house Equine-assisted Therapy Centre. The day-by-day activities of the Centre are usually dedicated to the patients of the Department of Neuropsychiatry of Childhood and Adolescence, nevertheless, since during the ensuing nationwide lockdown these activities could only be provided online, part of the Centre’ resources were made available to the hospital staff.

Scientific evidence has shown that equine facilitated therapy is helpful for in the treatment of posttraumatic stress disorder as well as the management of mourning and pain. Moreover, the relationship with horses improves perceived self-esteem and increases the ability to cope with states of anxiety.

**Aims:**

Objective of the project was to provide healthcare professionals, who were working in appalling conditions and among spreading fears, with guided and positive experiences in a curated open-air environment. The task was to help them face emotional and psychological fatigue with a view to preventing collateral damage.

The ecological and relational environment available on site played a crucial role in the project. It helped manage fatigue and anxiety and provided healthcare professionals with time to re-connect with themselves and recuperate through a genuine relation with the animals.

**Methods:** The project involved healthcare professionals from the Niguarda hospital and was carried out between March and June 2020 by a psychotherapist with the help of four assistants to the horses. Up to five meetings, either individually or in groups, were scheduled:

- The first meeting was relational: “choosing one’s horse”
- The following meetings focused on “direct experiences with the animal, grooming and establishing a relation with the horse”.

The psychotherapist produced daily reports of the meetings. Healthcare professionals were asked to complete a four-point Likert questionnaire at the end of the process.

**Results:** 96 professionals took part in the project (60 members nursing staff, 16 medical doctors, 13 healthcare assistants, 7 technicians). The proposed process was completed by 80% of the participants, for a total of 436 access.

The analysis of the reports pointed to the following benefits most frequently observed:

- Improved mood and emotional engagement
- Self-activation and responsiveness boosted by communication abilities of the horse
- A stronger and more positive perception of self.

Results are being analysed and a report will be delivered soon.

**Conclusions:** The project proved to be meaningful for healthcare professionals who chose to approach and rely on horses for the sake of recuperating personal strengths – both physical and emotional – in a welcoming and protected environment, an endeavour that would help them continue to cope with the emergency.

Keyword: COVID 19, Equine facilitated psychological support, Health care professionals

P-22

Topic : **Disabilities > Others**

## Effect of Equine Facilitated Learning on the of Graphomotor Skills

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**Background/Aims:** This work aimed to reveal Equine Facilitated Learning (EFL) effect on the development of fine motor and graphomotor skills in children with combined disability. It is a proof of concept study showing the change of graphomotor skills in children with a combined disability before and after EFL intervention. We expected improved fine motor and graphomotor skills resulting from gross motor skills development achieved in the EFL program.

Skillful movements are not genetically determined but develop by learning. They require flawless coordination with postural and locomotor systems. The acquired ability is fixed in long-term memory; however, it requires training for the whole life. Abilities developed at a young age show a greater capacity for long-term fixation than those acquired later in life.

**Methods:** We hypothesized that in children with combined disability, regular EFL intervention stimulating gross motor skills development would improve fine motor skills, including the graphomotor ones. We assessed the writing technique, pen grip correctness, hand relaxation level and performance in selected graphical elements in the hand-writing. The last ones are used as pre-writing exercises in preschool and early school education, and they are intended to ease later writing of alphabetic characters.

We recruited 8 children of age 4 to 14 years. Two of them were participants of a one-week intensive EFL course, while the rest were participants of regular lessons completing 35 lessons. Every child was assessed individually with stringent

adherence to ethical standards. The study lasted for 12 months, and the tests were repeated every 3 months before and after the EFL class.

**Results:** We observed that EFL has a strong potential for developing graphomotor skills in children with combined disability. Our results also revealed differences between regular exercises and intensive course. Regular EFL showed larger and longer-lasting results than the intensive but short-term one.

**Conclusions:** Hence, based on our observations, we conclude that EFL has a beneficial effect on gross and fine motor skills, including graphomotor skills. This finding supports the close interconnection of the motor systems. However, this study was purely observational in a very small sample, so our results require confirmation by more extensive studies.

Keyword: Graphomotor skills, Fine motor skills, Movement disability

P-23

Topic : **Disabilities > Others**

## A Study on the Recognition of Rehabilitation Therapist about Rehabilitation Riding

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**Background/Aims:** As a means of treatment for people with disabilities, there is a growing interest in horse riding. Horse riding improves physical conditions such as muscles, joints, and cardiopulmonary function, alleviates tension, and encourages confidence through large animals such as horses. The various therapeutic effects of therapeutic horse riding have been recognized by many medical professionals, including the American Occupational Therapy and Physical Therapy Association. On the other hand, in Korea, there is not yet a scientific basis for the therapeutic effects of specific diseases or clinical treatments. The purpose of this study was to investigate the possibility of rehabilitation related professional worker 's therapeutic horse riding.

**Methods:** This study targets rehabilitation professionals, including occupational therapists, physical therapists, speech therapists, and other personnel related to rehabilitation in domestic clinical rehabilitation. A questionnaire response was conducted. A total of 80 questionnaires were collected for two months and 72 questionnaires were analyzed after excluding 8 questions with poor responses.

**Results:** Recognition and use experience of therapeutic horse riding were generally low, but doctors who wanted to use it when the expectation of effectiveness and therapeutic horse riding education were assumed were relatively high.

**Conclusions:** Based on these results, it can be confirmed that the therapeutic horse riding will be recognized as a clinical treatment method in the future.

Keyword: Rehabilitation, Recognition, Therapeutic horse riding

P-24

Topic : **Disabilities > Others**

## Positive Discipline, Horses and Self-Efficiency: a Non-Strict Behavioral Approach

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**Background/Aims:** The goal of this study was to assess the effects of an intervention with a positive discipline approach, self-efficacy, and equine therapy activities with a group of caregivers. For this purpose, the Equine Therapy Assistance Program in Skills Development (PAEDHA) method was applied. The social justification of this study has come from the practice made by professionals in a Equine-assisted Therapy Center, where children showed some behavior issues.

**Methods:** the research project has been sent to the Ethics Committee at Universidade São Francisco (USF) and has been approved under CAAE:17152019.0.0000.5514. **Participants:** the sample of this study had 30 individuals from both genders, being 93,3% female (N=28) and 6,7% male (N=8), aged between 29 and 65 years old (M=40,6, DP=8,2), living in a countryside city of São Paulo state. The Perceived General Self-Efficacy Scale (EAGP; Schwarzer; Jerusalem, 1995); after the applicability of the tool, six two-and-a-half-hour meetings were carried out, bearing the following topics: perception and triune brain. Self-efficacy. Positive discipline, morality and assertiveness. Activities with free horses, therapeutic conduction, working equitation and long reining. As it is a quantitative study, the data analysis – pre- and post-intervention, have been carried out at Rstudio; a Shapiro test was executed, which showed non-normality of data, thus leading to non-parametric tests – Friedman Test and Kendall W in order to check the meaning of the differences in averages on assessments and reassessments.



**Results:** data have shown an increase in the average (Assessment = 30.46; Reassessment = 32.23), although it was not statistically meaningful  $p > 0.05$ . The research contributed to the applicability of positive discipline with a group of parents and caregivers, having an increase in the average and improvement in quality related to caring of their children.

**Conclusions:** although there were no significant changes on the averages, there were behavior changes in the caregivers' treatment with their children. It is recommended that, in future sessions, there is a larger number of sessions and that a control-sample be used.

Keyword: Equine-assisted therapy, Positive discipline, Belief in ability

P-25

Topic : **Disabilities > Others**

## Therapeutic Vaulting and Psychomotor Skills in Equine Therapy: Qualitative and Comparative Analysis of the Isolated Use of the Barrel, of the Horse, and the Use of Both the Horse and the Barrel together.

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**Background/Aims:** The aim of this study was to build a qualitative analysis of the psychomotor skills in therapeutic vaulting, thus being able to compare the isolated use of the barrel, of the horse and the use of both the barrel and the horse together.

**Methods:** this project was approved by Universidade São Francisco research ethics committee (CAAE:17152019.0.0000.5514). Thirty children and teenagers aged 5 to 15 have taken part in this study, most of them boys (83,3%). They were placed in 3 different groups: 10 participants in the barrel group (B), 10 in the horse group (H) and 10 in the horse and barrel group (BH). Each group participated in monthly 2-hour sessions for a year. The strategies, dynamics and the environment were prepared by our interdisciplinary team, based on the Equine Therapy Assistance Program in Skills Development (PAEDHA). Such gatherings have taken place at Instituto Passo a Passo (Step by Step Institute – free translation), in the city of Itatiba, in the state of São Paulo. Most of the participants (40% of the sample) presented diagnosed intellectual disability; 16,7% presented Attention Deficit Hyperactivity Disorder (ADHD), and 10% presented Autism Spectrum Disorder. The instrument used to build the analysis was a qualitative questionnaire designed by the team. It was applied to the children's parents and guardians in the beginning and at the end of the intervention, as well as representative drawings made by the kids. Such

drawings demonstrated an enlargement of the children's perceptions regarding their body parts and the environment.

**Results:** The results of the questionnaire appointed that the BH group presented more relevant changes related to skill development, including balance, body awareness, space-time notion and gross coordination. All these outcomes witnessed a bigger improvement in the BH group, when compared to the B and H groups. Moreover, surprisingly, the B group displayed superiority when compared to the H group. We supposed that the children in the H group were less encouraged to use their psychomotor skills, once the intervention occurred only with the participants on horseback. On the other hand, in the H and BH groups, the activities might have involved psychomotor skills in a wider way. Since apart from the joint use of the horse and the barrel in the BH group, the B group also used other equipment – such as the trampoline – making the strategy more playful and dynamic.

**Conclusions:** these findings suggest that therapeutic vaulting might be a strategy that stimulates psychomotor skills despite the better results in the group who used both the horse and the barrel. It is possible that, facing the lack of availability of a horse, the isolated use of the barrel might be a valid approach.

Keyword: PAEDHA, Therapeutic vaulting, Psychomotricity

P-26

Topic : **Disabilities > Post Traumatic Stress Disorder**

## Horses Heal PTSD: Walking New Paths

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**Background/Aims:** Post Traumatic Stress Disorder (PTSD) is a complex condition to treat and heal and is often misunderstood and difficult to manage. Medical experts are increasingly aware that PTSD requires more than traditional psychotherapy and medicine to obtain enduring positive results. To promote healing, individuals with PTSD need a combination of psychological treatments, pharmaceuticals, and emotional therapy. Through decades of work and research, Dr. Shkedi's aim has been to find the most effective way to use Equine Assisted Activities and Therapy (EAA/T) to treat those suffering from PTSD.

**Methods:** Through weekly one-hour sessions (and sometimes more often) that include groundwork and riding, in partnership with the horse, she is able to reach the core of a PTSD sufferer's problems. Dr. Shkedi's methods shift energetic patterns that keep destructive emotions, physical symptoms, and life-depleting habits and negative thoughts entrenched. When in the presence of the remarkable, unparalleled horse, healing occurs on all levels, restoring the mind, strengthening the body, and repairing the soul.

**Results:** Her findings have shown that there are no quick fixes for PTSD. The only way to produce lasting results is to take a long-term holistic therapeutic approach that lasts for a minimum of two years. When quick fixes that last only 5-6 weeks are attempted, these techniques act as "mercy ships", providing assessment and therapeutic activities that may achieve a quick sense of calm for a few weeks, but

do little or have no effect upon the long-term management of PTSD and the horrific memories of its cause.

**Conclusions:** Utilizing the findings from her decades of work in clinical practice, it is increasingly evident that if given time horses with whom we have had a relationship from ancient times, effective EAA/T provides holistic energetic healing that addresses the human mind, body, and soul as an integrated unit, which is known to be more successful than treating any of these levels separately. Her success is evident by the numbers of people with PTSD who have healed sufficiently so that they are able to re-establish and rebuild their lives with their families, at work, and in the greater social sphere.

Keyword: PTSD, EAA/T, Healing, Therapeutic, Post Traumatic Stress Disorder, Horse

P-27

Topic : **Horse Related > Equine Education and Training**

## Social Interaction Changes in People with Intellectual Disabilities Using Equine-Assisted Intervention in Korea

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**Background/Aims:** Participation in equine-assisted intervention (EAI) is effective in inducing participants' social interaction skills in a relaxed state, experiencing positive reaction, and provide an opportunity that can lead to apply for others. In addition, these activities use the subtle reactions of horse to guide people to properly learn about initiating and continuing social interactions. Therefore, this study aims to provide basic information about the social interaction changes in people with intellectual disabilities through the application of equine-assisted intervention (EAI) in Korea.

**Methods:** The subjects were 12 people with intellectual disabilities residing in a residential care facility in Korea. EAI was applied and consisted of communal activities and horseback riding. The intervention was conducted for 60 minutes each session, two sessions a week for 12 weeks. To determine the psychological aspects of the social interaction changes after the study cohort participated in the EAI, their social interaction anxiety, social phobia, and social avoidance and distress were measured. Their social interaction anxiety was measured using the Korean-Social Interaction Anxiety Scale (K-SIAS), and their social phobia was measured using the Korean-Social Phobia Scale (K-SPS). To measure their social avoidance and distress, the Korean-Social Avoidance and Distress scale (K-SADS) was used.

**Results:** The social interaction anxiety, social phobia, and social avoidance and distress results showed a continuous decrease after the application of EAI.

**Conclusions:** Thus, the application of EAI, including communal activities and horseback riding, should be considered for people with intellectual disabilities in order to decrease their social interaction anxieties, phobias, and social avoidance and distress.

Keyword: Equine-assisted intervention, Intellectual disabilities, Social interaction

P-28

Topic : **Horse Related** > **Equine Welfare**

## The Fun and Frustrations of Building an Equine Team for EAL in an Equine Welfare Charity

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**Background/Aims:** The Mare and Foal Sanctuary is the largest equine welfare charity in the South West peninsula of the UK. We provide alternative education and training through equine assisted learning, therapeutic riding and outdoor learning in nature with our rescued horses and ponies. Over the past three years we have been building our team of rescued equines to support our EAL work.

This is an honest account of our experience of building our Equine Team, including the fun and frustrations!

We had lots of rescued horses and ponies, but many were considered to be unsuitable for EAL work. Those that had been rehabilitated and retrained for riding were already on loan to home carers. Many other rescued equines were young and needed more time to mature. Some internal resistance to rescued horses being ridden as part of EAL sessions also emerged.

**Methods:** To overcome these frustrations, we worked together across the sanctuary to ensure there is a clear ethical, equine centred pathway which supports each rescued equine's journey to potential rehoming in the future. All rescued equines are carefully assessed for their suitability and are monitored during their time working in EAL by our education team, which includes a specialist Equine Support Lead and our Equine behaviourist.

Just like our human professional team, our rescued equine team are multidisciplinary



and specialise in different activities, for example:

- No contact just observation / presence
- Ground based / in hand work
- Ridden work

Our activities:

- Focus on equine behaviour and welfare and follow least intrusive minimally aversive principles.
- Support the development of human–equine bond through mutually healthy and respectful interactions and relationships between humans and rescued horses.
- Take into consideration the equines’ past experiences and previous trauma. Recognising each rescued equine’s unique personality, history, nervous system responses and strengths.
- Foster mutual trust through attunement, responsiveness and positive reinforcement regardless of human handler.

**Results:** We have developed an ethical equine centred, trauma informed approach, which recognises all equines as sentient beings with physical, psychological, social and spiritual needs. Work in EAL supports the rescued equine’s rehabilitation and training pathway with the aim of them being rehomed successfully in the future. This includes horses which have been part of the equine team for EAL activities.

As an equine welfare charity, we have a wide range of rescued horses and ponies which provide real life examples of diversity, inclusion and equality. Our human participants relate to the background stories and reasons for our rescued equines being in sanctuary.

**Conclusions:** As an equine welfare charity we have been able to work through the very valid concerns and questions from our sanctuary care teams to successfully establish a specialist education team which includes rescued equines. This process has enabled us to develop an ethical equine centred approach, from which we can contribute our practice based learning to the HETI community.

Keyword: Ethical, Equine–centred, Rescued

P-29

Topic : **Horse Related** > **Others**

## Jungian Psychology in Contemporaneity: Contribution of the Relationship between Humans and Horses to the Psyche

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**Background/Aims:** The main goal of this research is to talk about the modern man who, distant from nature, ignores psychic functions, his instincts and unconscious – that are essential to the development of the psyche –, living under forged condition of one-sidedness of the conscious. The relationship between humans and horses, then, looks for a way of coming together with nature and, thus, offers experiences, time and space to the necessary reframing of the symbols that benefit the communication with psychic elements, in order to generate change and self-knowledge. The objective of this work is to increase the field of study of the relationship between humans and horses in their social, historical, cultural, therapeutic and symbolic aspects; as to understand what their contributions to the psyche are, based on the Analytical Psychology of Carl Gustav Jung. The problematization addresses a main issue: in a world fueled by a mechanistic model, ruled by an institutional, scientific and virtual living – which contributes to the one-sidedness of the conscious–, what is the meaning of the relationship between humans and horses to the psyche? In modern-day society, where the negative impact of urban growth and contemporary lifestyle have estranged the man from each and every spirituality and inner connection, the connection with a horse makes rescuing the contact with nature and their own interior easier

**Methods:** This investigation was elaborated based on several books that comment on the origin, usage, evolution, and characteristics of horses, as well as their connection with humans, in order to comprehend its meaning to the modern man.

This research has a qualitative–exploratory character, based on bibliographic references, as well as research on search websites.

**Results:** The result of this investigation leads to the irrefutable importance of animals, considered, nowadays, to be one of the links to the awakening of ecological awareness and humanitarian attitude.

**Conclusions:** In ancient wars, in folkloric legends, in mythology, sport, leisure or – recently – in the therapeutic field, horses have become great allies in interior journey, as they help reveal content of physical, mental, spiritual and emotional aspects, by promoting a mirroring of our real condition in the exchange moment of that relationship.

The horses stand out, as they become allies in the human inner journey, because they reveal content of physical, mental, spiritual and emotional aspects which contribute to the development of the psyche, transforming the individual conscious and expanding their own emotional universe.

Another important point that makes the horse one of the few animals with exclusive therapeutic qualities is its large size. For being a half a ton animal, the relationship with the horse “forces” the human being to act without using strength, which conduces him to search for strategies to deal with the most diverse and unexpected situations. That way, the human being uses his internal resources in a more balanced, sensitive, and intelligent way, processing his decisions and communication through centering his interior energy and understanding his own mind.

Keyword: Psychology, Psyche, Horses

P-30

Topic : **Horse Related > Others**

## Accuracy of Horse-Riding Energy Consumption according to Accelerometer Wearing Location

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**Background/Aims:** This study is to verify the accuracy of energy consumption per wearing location (waist, wrist, ankle) of uniaxial accelerometer (GT1M) compared with respiratory gas analysis system during horse-riding exercise (walk, trot, canter).

**Methods:** The study subjects were conveniently sampled from 11 males in their 20's from S-Class who have over 3 years of experience in horse-riding and are licensed as leisure sports instructors(horse-riding), and the following conclusion was drawn. At the walk, there was no significant difference of standard energy consumption among waist, wrist, and ankle. But, at the trot and canter, only wrist showed no significant difference between GT1M and respiratory gas analysis system.

**Results:** At results, the accuracy was relatively high for wrist-wearing when predicting horse-riding activity energy consumption using accelerometer.

**Conclusions:** Therefore, the wearing location must be considered when predicting therapeutic horse-riding activity energy consumption with accelerometer on therapeutic riding site.

Keyword: Horse-riding, Energy consumption, Uniaxial accelerometer, Wearing location

P-31

Topic : **Special Program > Virtual Reality(Horse)**

## A Case Control Cohort Study – TheHorseCourse Reducing the Incidence of Domestic Violence and Child in Need Status

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**Background/Aims:** This paper will present the findings from a study which analysed data from the Troubled Families program in one area in Southern England. Four groups of participants data were analysed and compared including:

\*data for families where at least one member has attended and completed TheHorseCourse program n=268,

\*the data for families who are registered with the Troubled Families program in England and no further support was being offered n=10569;

\*the data for families who are registered with the Troubled Families program in England receiving key worker support n=2120

\*the data for families who are registered with the Troubled Families program in England receiving key worker support and have received further intervention based support, Troubled Families Plus (no attendance at TheHorseCourse) n=1119.

**Methods:** For the Child in Need and Domestic Violence data, a mixed-measures ANCOVA was used to identify differing effects of intervention group, and gender, as well as covariance with age. The analysis is undertaken before the participants attended TheHorseCourse and one year later, and for the other two groups over a one year period where they were registered with the troubled families program. The total sample for all three groups for the Domestic Violence analysis was 13947 (including all family members) and for the Child in Need sample 8477 (all under the age of 18 years).

**Results:** Each dependent variable was initially investigated separately, therefore separate mixed-measures ANCOVAs were run for both Domestic Violence (DV) and Child in Need (CiN). As such, group and gender were included as independent variables, whilst age was included as a covariate. The dependent variable was a binary measure of Domestic Violence at pre and post-test, or of Child in Need status at pre and post-test. Box's test of equality of covariance was significant.

**Conclusions:** In conclusion the ability to analyse across cohorts in relation to this intervention has yielded interesting results suggesting that there may be some correlation between a family member attending THC and reductions in future domestic violence in that family and the removal of (Child in Need) CiN status in the groups under study. Indeed, in our analysis the rate of DV was reduced by 51% in the cohort where at least 1 family member attended THC in the year following their attendance. This was a significantly higher reduction in DV than in our comparison groups. Although randomised studies are still needed to further explore the issue of causality. Of further interest is that as this charity is normally referred those for whom other talk based or education based options are not working this study would suggest that even in this situation THC may be having a positive impact in comparison with other types of support offered through the troubled families program.

Keyword: Equine assisted intervention, Domestic violence, Case control cohort study



# NON-COMPETITIVE POSTER SESSION



P-32

## Field Practice Experience of Prospective Therapeutic Horse Riding Leaders

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The study analyzes what field practice experienced by prospective therapeutic riding instructors has meant to them, identifies how they have influenced the choice of therapeutic riding instructors leadership for their jobs, and understands how they should be prepared to become future field leaders.

For this study, eight preliminary therapeutic riding instructors who had been on-site training within the last two years were selected as research participants to collect data through non-participatory observation and in-depth interviews.

The paradigm of the prospective therapeutic riding instructor's field practice was the exploration and preparation of work to become a therapeutic riding leader, expectations and fears of entering the field, various cultures, job identification and identity, and personal goals and challenges. This result is expected to provide guidelines for prospective therapeutic riding instructors who will perform their in the field to play an important role in cultivating capabilities that can help them realistically and directly help them advance into the field.



P-33

## The Caring Types of Parents with the Disabled Participate in Therapeutic Riding

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<sup>2</sup> Sorabol College

The purpose of this paper is to define the characteristics of parents who care for their Therapeutic Riding Participant.

In order to analyze the caring types of parents, Q-Method was applied. For this study, 7 parents among 5 families, and 39 Q-samples were formed. The period of participation experience in Therapeutic Riding was more than 6months.

The result was extracted from 5 types.

- Type 1 is the systematic training support type.
- Type 2 is the child-absolute supportive type.
- Type 3 is the media orientation type
- Type 4 is the therapist counseling support type.
- Type 5 is the environment control type.

From these results, we could know each types had different aspects that they especially focused on. This suggests that they marked such type of caring because their children were disabled, and not only do they consider the environment of disabled children, but they also take care of them according to their own parenting arrangements.

**Keyword:** Therapeutic riding, Parent, Caring type, Q-method

P-34

## My Memorable Participant in our Therapeutic Horsemanship Program

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One of the memorable participants during our therapeutic horsemanship program is a 12 years-old girl with cerebral palsy who participated for 6 months during the year of 2018. She was a girl with a bright and healthy spirit who liked to participate in concerts of singers. She was suffering from severe physical disabilities, however, her cognitive function was not impaired. She used wheelchair for ambulation and needed to enhance proper trunk position by strengthening core muscles.

When riding for the first time, she was scared of horses, but became enjoy riding with the help of volunteers, and actively participated in therapeutic horsemanship. During the therapeutic horsemanship program, I asked her to raise her body up from forward or sideway tilting position and asked to try standing up and sitting down by using her leg power on the horseback. Her trunk stability and strength was improved little by little. Although we have difficulties in maintaining hippotherapy class due to COVID-19, she is still taking lessons whenever possible and enjoy it a lot.

P-35

## The Sociality of Hot-blooded Horses is Related with the Blood Oxytocin Level

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Oxytocin and vasopressin were associated with social behaviors including social interaction and affiliative behavior in animals. Additionally, the social aggression behavior was affected by the vasopressin. Also, serotonin was determined the association with aggression behaviors. The objectives of this study were 1) to evaluate oxytocin, vasopressin, and serotonin concentration in the plasma of horses at different breeds, sex, and ages, and 2) to determine if the neurotransmitter is associated with horse behaviors. This study was performed at Sangju International Equestrian Center. Blood samples were collected from 24 horses, including 6 Thoroughbreds (11–18 yr), 6 warmbloods (15–26 yr), 6 ponies (8–17 yr), and 6 Quarter horses (2–12 yr). The group of horses was consisted of 13 mares and 10 geldings and 1 stallion. The levels of oxytocin, vasopressin, and serotonin were measured by ELISA, RIA, and HPLC, respectively. The characteristics of each horse were evaluated by riding instructors and horse trainers. The effect of breeds, sex, or ages on the level of each neurotransmitter was assessed by One-way-ANOVA with LSD post-hoc analysis. Linear regression was performed to determine if the level of neurotransmitters is related to sociality of horses. As results, the levels of oxytocin and vasopressin were not variable with breed, sex, or age of horses. However, the serotonin level varied depending on the breed and age of horses. Interestingly, oxytocin level was correlated with the sociality of hot-blooded horses. However, vasopressin and serotonin level had no correlation with sociality of horses. In conclusion, the sociality of hot-blooded horses is related with the blood oxytocin level.

Keyword: Horses, Neurotransmitter, Oxytocin, Vasopressin, Serotonin, Sociality

P-36

## The Expression of Androstenone Receptor (OR7D4) in Vomeronasal Organ and Olfactory Epithelium of Horses

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Androstenone is the first mammalian steroidal pheromone to be identified. Pheromones are chemicals that animals use to communicate within a species. Pheromone detections are related to vomeronasal organ and olfactory epithelium in mammals. OR7D4 is an odorant receptor that responds to androstenone. Several studies indicated that spray with androstenone changes behaviors of the boar and dogs. However, the expression of OR7D4 in vomeronasal organ and olfactory epithelium was not reported in mammals except human. Thus, the main objectives of this study were to investigate the expression of OR7D4 in vomeronasal organ and olfactory epithelium of horses. Tissue samples were collected from the vomeronasal organ and nasal cavity of six Thoroughbred horses. The presence of OR7D4 gene was investigated with reverse transcription polymerase chain reaction. The expression of OR7D4 was determined using western blot and immunofluorescence. As a result, the bands for OR7D4 were observed at approximately 462 bp. The protein band of OR7D4 of vomeronasal organ and olfactory epithelium were detected at 38 kDa. Immunofluorescence result showed that the cilia and cytoplasm of olfactory receptor cells of vomeronasal organ and nasal cavity tissues were immunolabeled with OR7D4 antibody. The intensity of OR7D4 protein bands in the tissues were not significantly different in between mares and geldings. In conclusion, Thoroughbred horses are capable of androstenone perception through OR7D4 expressed in vomeronasal organ and olfactory epithelium.

**Keyword:** OR7D4, Androstenone, Horses, Vomeronasal organ, Olfactory epithelium

P-37

## Androstenone Induces Horse to be more Compliant within Human-horse Interaction

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The olfactory signals play important role within communication in the animal world including horses. Pheromones are volatile, or non-volatile chemicals that trigger social responses among animals. Therefore, pheromone treatment could be used to modify horse behavior to improve human-horse relationship. Androstenone (5 $\alpha$ -androst-16-en-3-one) is a steroidal pheromone found in the saliva of boars that elicits a response in different species. However, its role in horse behaviors remains to be elucidated. Thus, the objective of this study was to investigate the effect of androstenone on horse behavior. The trainability tests (lowering head and moving hindfeet) and calmness tests (standing still with or without stimulator) were performed with, or without applying androstenone diluted with jojoba oil. Treatment with 10  $\mu$ g/mL of androstenone applied 30 min prior to the test significantly decreased time to lower their head compared with control. The results of calmness tests had no significant differences compared with control group. In the mediate pressure test for the trainability assessment, group of horses treated with 10  $\mu$ g/mL of androstenone moved hindfeet in significantly shorter time ( $p < 0.05$ ) compared with control group. However, there was no significant difference in the time to move hindfeet using direct pressure. In conclusion, androstenone appears to induce horses to be more acceptable, indicating that androstenone can be utilized as a tool to relieve horses during general management and training.

**Keyword:** Horses, Pheromone, Androstenone, Behavior

P-38

## Relationship between Oxytocin and Serotonin and the Fearfulness, Dominance, and Trainability of Horses

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Oxytocin (OXT) and serotonin (5-HT) are essential neurotransmitters associated with the behavior of animals. Recently, we found that the plasma concentration of OXT is positively correlated with horse docility and friendliness toward humans. However, the relationships between the neurotransmitters and other temperaments such as fearfulness, dominance, and trainability are unknown. This study aimed to identify whether the plasma concentration of OXT or 5-HT is correlated with fearfulness, dominance, and trainability of horses. Blood samples of 34 horses were collected at the Horse Industry Complex Center of Jeonju Kijeon College. The concentration of OXT and 5-HT was measured in the plasma samples using enzyme-linked immunosorbent assays. The fearfulness, dominance, and trainability of horses were scored by three professors who were very familiar with the horses. One-way analysis of variance with the least significant difference post-hoc analysis was used to compare the scores for fearfulness and dominance among groups. The trainability of horses was compared using the student t-test. The 5-HT was negatively correlated with dominance, but it had no relation with fearfulness. The OXT appeared to be negatively correlated with fearfulness and dominance in horses. Furthermore, OXT was positively correlated with the trainability of horses. Additionally, 5-HT appeared to enhance trainability. In conclusion, the concentration of OXT or 5-HT in horse blood plasma can be used as a biomarker to monitor the fearfulness, dominance, or trainability of horses.

Keyword: Horses, Oxytocin, Serotonin, Fearfulness, Dominance, Trainability

P-39

## Introduction of Qualifications System and Development Plans at Korean Equine Industry

Tae Woon JUNG, Soon Gill LIM, Ji Young KWON, Sun Ju SOHN

The purpose of this study was to explore issues in the process of obtaining equestrian instructor qualifications and to plan strategies to improve the current qualification system. Methodologically, we conducted a thorough review on qualification systems run by various Korean government departments, analyzed applicant qualifications and exam contents, and identified problems and areas that needed improvement through professional round tables. Based on our analysis, the main findings are as follows.

First, the qualification exam included a rather excessively high riding skills compared to the levels of the general amateur equestrian population. In order for the general public to be more familiar with the horse industry and to attract a large number of the population, we suggest that the organizing committee lower the standards of the riding skills test and also introduce a qualification program for non-riding facilitators.

Second, the development of an on-line education platform is necessary so that applicants can have access to the basics to prepare for the test and to become a competent instructor.

Third, it is advisable that the government supported professional training system and the riding ability certification program be affiliated with the government equestrian qualification systems. This may allow applicants to overcome current barriers to the national qualification exams and to also challenge them to acquire a certain level of riding skills whilst having opportunities to apply for the test multiple times during the year.

Fourth, to strengthen the education system of the horse industry professional manpower training institution, it is necessary to support the diversity of independent education and create and support a system that can provide a more advanced and professional curriculum, such as establishment of a new graduate program.

Our findings have implications for both policy and practice in that the horse industry can sustain only through cooperative efforts with institutions that educate, supply, and mobilize professional human resources. These strategies will to produce and supply qualified instructors who are the key personnel for the horse industry and further attract more talented individuals into the entire industry.



P-41

## Researching of an Experienced Therapeutic Horse Riding Instructor and a Disabled Rider's Learning Experience

Tae Jong KIM

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The purpose of this research is to explore educational experiences with regard to "Therapeutic riding classes with a horse assisted therapeutic riding instructor and disabled people." The narrative-life story method, one of the qualitative methods, was used in this research. The researcher selected Dr. A in a horse assisted sports rehabilitation center, J college and disabled riders who learned therapeutic horse riding in order to overcome physical obstacles, by way of selective data collection methods. The materials used in this research were collected through unstructured questionnaires from participants through an average of four interviews, and also through newspapers, media articles, and collected statistics. The results are as follows. Firstly, the therapeutic horse riding instructor taught riding skills to disabled riders, building up their physical abilities, and they also developed a new life outlook during the horseback riding classes. Secondly, the instructor's own learning and teaching experiences were used to enable the disabled riders to continue horseback riding as an athletic pursuit, and to reduce frustration and better their lifestyle and attitude. Thirdly, the therapeutic horse riding instructor's continued teaching and dedication to the disabled riders played a meaningful role in his life. Together with the mentioned beneficiary, the disabled riders developed a positive attitude through an emotional connection with horses, and learned a calming lifestyle within their lifelong journey of personal growth.

P-42

## Influence of Horse and Rider on Stress during Horse-Riding Lesson Program

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The present study aims to confirm the influence of a horse-riding lesson program (HRLP) on the stress level of horses and riders by respectively analyzing their salivary cortisol concentration. Twenty-four healthy horses and 23 riders participated in this study. The horses were randomly classified into two groups for the horse riding lesson program:

Class 1 (for the beginner lesson) and Class 2 (for the intermediate lesson). The Class 1 group consisted of 12 horses and 12 riders, while the Class 2 group consisted of 12 horses and 11 riders. Salivettes cotton wool swabs were used for saliva collection and the saliva analyses were conducted using a two-way analysis of variance for repeated measures with SAS version 8. As for the results, the average salivary cortisol concentration of all horses before HRLP significantly increased compared to the baseline while it decreased after the HRLP. The results of the salivary cortisol concentration of the riders were similar to the horses' results. However, there was no difference during the HRLP between Class 1 and Class 2 in the horse or rider groups. The results suggest that the HRLP did not influence the stress level of the horses or riders.

Thus, this study provides the necessary information and guidelines for future studies on stress in horses during riding and gives insight into better horse welfare and management options.

Keyword: Animal Welfare, Horse Riding, Salivary Cortisol, Stress, Rider, Riding-lesson

P-43

## The Effects of Therapeutic Horseback Riding on Equilibrium for Children with Disabilities

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This study was performed on 26 disabled adolescent participants (16 males, 10 females) with the objective of testing changes in equilibrium after engagement in horseback riding. Participants of total 26 persons were divided into three groups as follows: 6 children with cerebral palsy(CP), 14 children with intellectual disability(ID) and 6 children with autism(AT). Participants engaged in therapeutic horseback riding(TR) two times per week for 30 minutes per session. The 26 participants demonstrated a considerable increase in equilibrium ability, with an average increase in equilibrium time of  $44.22 \pm 50.70$  sec after TR. Equilibrium also increased according to disability group: CP( $p < 0.05$ ), ID( $p < 0.001$ ), and AT( $p < 0.05$ ). TR should be considered development of a horseback riding program for the improvement of equilibrium in the disabled.

P-44

## Experience of Therapeutic Horsemanship at Kijeon College II

Ok-Deuk KANG

Sungduk University, Korea

The present study aims to confirm the influence of a horse-riding lesson program (HRLP) on the stress level of horses and riders by respectively analyzing their salivary cortisol concentration. Twenty-four healthy horses and 23 riders participated in this study. The horses were randomly classified into two groups for the horse riding lesson program: Class 1 (for the beginner lesson) and Class 2 (for the intermediate lesson). The Class 1 group consisted of 12 horses and 12 riders, while the Class 2 group consisted of 12 horses and 11 riders. Salivettes cotton wool swabs were used for saliva collection and the saliva analyses were conducted using a two-way analysis of variance for repeated measures with SAS version 8. As for the results, the average salivary cortisol concentration of all horses before HRLP significantly increased compared to the baseline while it decreased after the HRLP. The results of the salivary cortisol concentration of the riders were similar to the horses' results. However, there was no difference during the HRLP between Class 1 and Class 2 in the horse or rider groups. The results suggest that the HRLP did not influence the stress level of the horses or riders. Thus, this study provides the necessary information and guidelines for future studies on stress in horses during riding and gives insight into better horse welfare and management options.

Keyword: Animal Welfare, Horse Riding, Salivary Cortisol, Stress, Rider, Riding-lesson

P-45

## Effects of Therapeutic Horse-riding Program on the Walking Ability of Students with Intellectual Disabilities

Ok-Deuk KANG

Animal Biotechnology, Jeju National University, Jeju, Korea

The purpose of this study was to determine if an 8-week therapeutic riding (TR) program was effective in improving the walking ability of students with intellectual disabilities. Thirteen students diagnosed with intellectual disabilities participated in the TR program. TR sessions were conducted twice a week (30 min per session), with a total of 16 rides taking place over an 8-week period. A gait measurement analyzer was used to measure progress based on a turn test (6-m walking and turning test), walk test (10-m walking), and timed up and go (TUG) test. Measurements were made three times: before horse-riding (P0), after 4 weeks (8 rides) of horse-riding (P1), and after 8 weeks (16 rides) of horse-riding (P2). Data analysis was conducted using SPSS software (ver. 22.0). Descriptive statistics were generated on the general characteristics of the subjects, and the Kolmogorov-Smirnov test was used to verify the normality of the data. Because of the lack of normality, the data were analyzed using a nonparametric method and the significance level was set to 0.05. Measurements of the duration of the forward gait cycle (s) in the turn test and the forward gait speed (m/s) in the walk test indicated improved walking ability after the TR program ( $p < 0.001$ ); the stride length (% height) also increased significantly ( $p < 0.05$ ). The walk test revealed a significant effect of the program on the duration of the forward gait cycle ( $p < 0.05$ ), while there were significant improvements on the left and right of the elaborated strides ( $p < 0.001$ ). No significant improvement in TUG test performance was observed after the TR program. In this study, an 8-week TR program had positive results on gait. Therefore, further research is merited, where TR programs are likely to improve the walking ability of individuals with intellectual disabilities

P-46

## Effects of Therapeutic Horse-riding Program on the Walking Ability of Students with Intellectual Disabilities

Ok-Deuk KANG

Sungduk University, Korea

**Background/Aims:** This study aimed to analyze the on heart rate, blood lactate concentration, packed cell volume (PCV) and hemoglobin (Hb) response after conducting exercise in endurance horses.

**Methods:** A total of 20 healthy 3-9-years-old Jeju crossbreed mares ( $5.95 \pm 2.24$  year) of age and  $312.65 \pm 13.59$  kg of weight) currently participating the endurance competition were used. The field tests selected for the experiment was gallop (approximately 8.3 m/s) along the selected 2.5 km course (a natural forest trail, not artificial road; a closed loop course). The horses were divided into three groups according to their age; 3-4 years of age (G1,  $3.29 \pm 0.49$  year), 6-7 years of age (G2,  $6.42 \pm 0.53$ ), and 8-9 years of age (G3,  $8.50 \pm 0.55$ ). The measurements times for the heart rate, blood lactate concentration, PCV, and Hb analysis were conducted before exercise (T0), shortly after exercise (T1), 15 min after exercise (T2), and 30 min after exercise (T3), respectively. Data was analyzed using an analysis of covariance (ANCOVA) for repeated measures with times and groups.

**Results:** The results of the comparison depending on the passage of rest time after exercise suggest that the heart rate and blood lactate concentration of three groups at T2 significantly decreased compared to T1. PCV of the G2 and G3 groups were significantly decreased at T2 compared to T1. Hb values at G2 and G3 groups were significantly decreased at T2 as compared to T1. However, heart rate, blood lactate concentration, PCV and Hb level at T1 showed no difference in the comparison of horses from different age groups with the exception of G3 group in terms of heart rate.

The physiologic and hematological responses of horses during recovery time after 2,500 m exercise with gallop were no significant difference among the groups. These data are useful as a response evaluation method for training of endurance horses.

Keyword: Age of horses, Animal welfare, Exercise test, Endurance, Physical response

P-47

## Therapeutic Horseback Riding is a Miracle Gratitude for My Life

Yu Jin CHO

Janggi High School, Korea

I couldn't speak properly until the second grade of elementary school and because of that, I was bullied at school. One day, I participated in the therapeutic horseback riding program and met a horse named 'Ji Hwi-bong'. The words that I always greeted in my heart came out of my mouth one day. "Poo?" Horses could die if they don't poop when their stomach hurts and I was so worried in my heart that I was able to speak out of my mouth without knowing the word.

Since then, I have always spoken to the Ji Hwi-bong and he was always there for me to listen to my clumsy stories. The horse Ji Hwi-bong whom I liked so much has become a friend, teacher who taught me, and doctor who healed me. After I meet Ji Hwi-bong, my body and sensory functions have improved so much that I don't have to continue treatment such as speech therapy, Sensory integration therapy, art therapy, music therapy, etc.

In the meantime, I had a lot of lack of balance, equilibrium, and muscle strength so I got trained with the horse, which became a great friend for my rehabilitation treatment, and became a jumping athlete. Since then, I have been able to participate in the 45th, 46th, 47th national juveniles competitions consecutively throughout the three years of junior high school, and especially in the 46th competitions, I participated in dressage. Also, even in competitions with ordinary students, I won several awards over ordinary students.

Even now, I think it's a gift of my life that I can't believe how much I have been able to accomplish these miracles, with an intellectual disability level 3 and sensory integration disorder.



P-48

## Connected with the World through Horse Riding

Junghun UM

Jangchun High School, Korea

I seem to have been an extraordinarily tricky kid since I was a kid. It is sensitive to sound and seems to have had a lot of time alone, whether it is a daycare center or playground. After entering elementary school, I had the experience of riding a horse around the school grounds for an extracurricular activity on a sunny spring day. For some reason, I wanted to try that experience. At that moment, my heart fluttered without knowing it. The class couldn't be held anymore due to insufficient student participation and neighbors' protest, but I always felt the heart beating in my heart.

One day when communication with friends was lacking and feelings of isolation in school life, my mom recommended I experience therapeutic horseback riding in a horse racing park. I couldn't forget the moment when I felt the connection with the animals on horseback for the first time. Thump-thump, I could hear my heartbeats. I also felt that Horse and I become friends. My personality, which was a bit sensitive and anxious, felt like I was looking for a sense of stability little by little. I remember that the day I performed wonderfully at the LetsRunPark therapeutic horse riding competition is truly the best moment of my life. The days of elementary school, where I had occasional horseback riding experiences, passed, and after entering junior high school, my innate disposition caused me to become increasingly stressed in communicating with my friends.

Whenever I get stressed, the thought of wanting to learn horseback riding became so desperate. Thankfully, my mother generously gave me financial support, so I got a chance to ride a horse again at the Founding Horse Riding Ground near Seoul. I was really happy, and I remember the moment vividly. I met my friend, Dal-gi. Every

weekend I start walking with Dal-gi, who is my horse friend, and end up with a canter. Spending time with Dal-gi was the happiest time. It seems that I shared a feeling of desire to be recognized by someone and do well with Dal-gi. I could feel that Dal-gi always gives me confidence and complimenting me. With the introduction of my aunt Eugene, who wanted me to learn horseback riding systematically, I met Chief Instructor Park Gi-jun (currently the director of Bibong Horse riding Course) at Anseong Farm Land in Anseong, Gyeonggi-do. Eugene and Director Park Ki-jun are the best adults in my life. Since then I have been able to focus on my school work through horseback riding. I wanted to be a more active and more positive boy. I also gained confidence that I could change little by little.

P-51

## My Experience on Hippotherapy with Mizz

Seo Bin LEE

Department of Horse industry, Sungwoon University,

Yeongcheon, Gyeongbuk, Korea

I am going to talk about a thankful and kind horse named ‘Mizz’ from our school and a child whom I met during the therapeutic horsemanship (hippotherapy) education program at SungWoon University. Most of the horses served for hippotherapy are usually gentle in nature and adapt well to the variable environment, so they are not easily fly off the handle. The horse named Mizz has a lot of experience in hippotherapy so that she can stay still even a rider scream on horseback or make a loud shout next to her. Even at the first-time a rider feel comfortable over the horseback of Mizz, and she is always work hard during hippotherapy program. I always thank to Mizz when I see improvement of recipient of hippotherapy program.

We had a hippotherapy program for children with autism spectrum disorder during the 1st semester of 2019 and 2020. When I met first with a 12 years-old child with autism, named ‘soo-hyun’, she didn't like touching or riding horses at all. She kept crowing and closed her mind. However, as the hippotherapy program progressed, she became to like Mizz, called the name of the horse, touched the horse, and finally she became possible to ride the horse alone. I think that the therapeutic horsemanship helps making communication between horse and human and it has positive effects for children who have difficulty in communicating with the outside world. I feel proud of myself that I can do something meaningful as a hippotherapy instructor teaching at the therapeutic horsemanship program.

P-52

## Experience of Therapeutic Horsemanship at Kijeon College II

Hoyoung JIN, Seoyoung JEONG

Department of Horse Industry and Sports Rehabilitation,

Jeonju Kijeon College, Jeonju, Korea

Therapeutic horsemanship is a field that gives me happiness while teaching people with disabilities. When disabled students make the smile of success after horse riding, it gives me strength and makes me to desire working harder.

To develop the field of therapeutic horsemanship, there should be more therapeutic horse riding centers and therapeutic horse training centers in Korea. There are only roadster training centers and racehorse training centers in the most district of Korea. In addition, there is lack of horse riding assistants and horse production ranch for therapeutic horse riding.

In therapeutic horsemanship, the role of horse riding leader is important. The leader should have skills to make the riders enjoy riding the horses and make them want to continue taking lessons. Each therapeutic riding class or course in the college make student to obtain more knowledge and skills to be more perfect to help the disabled people who are the recipients of the therapeutic horsemanship.

P-53

## Experience of Therapeutic Horsemanship at Kijeon College I

Yeonji SON, Eunjin JANG

Department of Horse Industry and Sports Rehabilitation

Jeonju Kijeon College, Jeonju, Korea

Even I have been riding horses for 6years, I first learned about therapeutic horsemanship at the Jeonju Kijeon College. At first, I was worried that 'Can I do well to guide people with disabilities to ride a living animal who can behave unexpectedly?' I tried hard to learn the skills for therapeutic horsemanship and to adjust myself on it. Now I feel that the therapeutic horsemanship is the 'Healing horsemanship' which both the body and the mind become healthy by interacting with living animals.

There are only a few places in Korea that specialized in therapeutic horse riding such as the Samsung Horse riding Course and the Korea Riding Association. I hope that there will be more arenas that specialized for therapeutic horsemanship in this country. In my opinion, therapeutic horsemanship in Korea is too much focused on riding skills. Rather than focusing on riding skills, children should start with a horse friendly program first. They should become familiar with horses, learn about horses, gain a sense of accomplishment, and then start step by step from easy riding skills. I hope that Korea become a leading place in the field of therapeutic horsemanship in a near future.

P-54

## Our Experience on Effects of Therapeutic Horsemanship

Seoyoung JEONG, Eunjin JANG, Sihyun BAEK, Intae JEON, Juenbom PARK,

Yujin KIM

Department of Horse Industry and Sports Rehabilitation

Jeonju Kijeon College, Jeonju, Korea

As the students of the Department of Horse Industry and Sports Rehabilitation, Jeonju Kijeon College, we experienced therapeutic horsemanship for the disabled last year. At the first time, we thought that the therapeutic horsemanship would only help the physical function of the recipients. However, now we realized that the horse riding can also help psychological aspect of the disabled persons. Once we educated the paraplegic disabled students. After the horse riding program, not only their leg strengths, but also their gait patterns and posture were improved. In addition, the students got more self-confidence through the therapeutic horsemanship program, so that they could take on new challenges.

We met many disabled students during the therapeutic horsemanship program. We were really rewarding when the students became healthy and sociable after the program. We felt that therapeutic horsemanship has a lot of physical and mental effects. We could learn that the therapeutic horsemanship and communicating with horses could be very helpful to disabled children, therefore, we hope that they get more opportunities to receive the therapeutic horsemanship program. Therapeutic horsemanship could be also helpful to internet addicted students. We hope that, in future, not only disabled children, but also disabled adults, geriatric peoples, and all other people with physical and mental difficulties could make contact with horses and get better by experiencing therapeutic horse riding program.

P-57

## Developing Processes for Tracking Goal Attainment and Outcomes

Amy TRIPSON ROCK

Ride On Center for Kids, USA

Effective reporting for skills and objectives is an ongoing challenge for many therapeutic riding centers. ROCK, Ride On Center for Kids, is working to develop a comprehensive system for skill development, goal setting, outcome measures and even program safety and efficiency. Through developing a skills list that will automate through the system to facilitate the appropriate matching of horse, rider, instructor and volunteers, ROCK will better be able to facilitate teams which we believe will increase the level of services offered and therefore positive lesson outcomes. Our skills list will interact with instructor goals which will help to track outcomes and skill progression. This process will allow us to look at a semester, a year, or a participant's progression over a period of years. It will help to provide quantifiable progress, growth, and guide future progression. With this process we can generate charts/graphs as well as outcomes per individual, instructor, or lesson group. Additionally, as we grow and expand our program it will provide a framework to better create classes and match participants across similar levels and skill progressions therefore increasing socialization through group classes. The skills list generated will feed into session goals which will all fall under our six pillars of (cognitive, communication, daily activities, emotional, physical, responsibility/self) which will help ROCK to better communicate with grantors, parents/caregivers and the public about our percentages on goal achievement which will bring awareness to the effectiveness of therapeutic riding.

P-61

## Equine Assisted Interventions Online Course

Clare THOMAS-PINO

University of Maine System and Husson University, USA

The Equine Assisted Interventions course (PDS 527) offered online through USM's Professional Development Center provides an introduction to the spectrum of Equine Assisted Services (EAS), focusing upon the mental health therapy, wellbeing, and educational aspects, clearly differentiating between therapy, therapeutic, and educational aspects, as well as roles and limitations for practitioners with different backgrounds and licensure.

Topics include history, theories, research, terminology, safety and ethics, as well as understanding the practice and differentiation between several forms of EAS. Significant emphasis is placed on the importance of the human-equine bond and awareness of equine behavior for clients, practitioners, and all those working with horses. The course emphasizes the role of the horse as co-facilitator and partner, working with the counselor or educator to facilitate treatment or educational goals. Students are supported as they evaluate and critique their specific areas of interest within the field of EAS.

This course is offered for either CEU's or Graduate Credit, and is offered fully online and asynchronous. The course consists of lectures, accompanying videos and reading, discussion forums, and an ongoing journal. Those taking the course for graduate credit also complete a research paper on an area of their choice related to the EAS.



If you would like to learn more about the courses please contact the professor Clare Thomas-Pino at [Clare.thomas@maine.edu](mailto:Clare.thomas@maine.edu) or Julie Marsh (Interim Manager of Professional Development Center and Educator Preparation) [julie.marsh@maine.edu](mailto:julie.marsh@maine.edu)

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## COVID-19 Preparation Plan: The Therapeutic Riding Center of Sung Woon University

Ho Ja KIM

Professor, Department of Horse industry, Sungwoon University,

Yeongcheon, Gyeongbuk, Korea

The Therapeutic Riding Center of the Sungwoon University is running riding programs over the year. More than 1,180 therapeutic riding sessions were conducted through this program. Regarding the pandemic COVID-19 issues, we try to strictly follow the quarantine guidelines.

For the social distancing, we first made dispersion of class days between university student class and therapeutic riding class. Second, we separated spaces between participants of the therapeutic riding programs. Also, we tried to keep volunteer assignment schedule so that we could minimize unexpected exposure by the volunteers. Health check-up for visitors includes recording temperature and checking questionnaire of Covid-19.

We also follow the prevention and social distancing guideline from YeongCheon Office of Education, the prevention and social distancing guideline from Health Center, and the school's prevention and social distancing guidelines.

P-75

## Innovative Horsemanship Education Program of Jeonju Kijeon College

Young Jae PARK, Seoung Ho LEE, Dong Won LEE

Horse Industry Complex Center, Jeonju Kijeon College, Jeonju, Korea

Jeonju Kijeon College is the college of Korea which is established to nurture specialized technology experts in various fields. One of the most proud programs of this college is the Horse Industry Complex Center and its Innovative Horsemanship Education Program.

The Horse Industry Complex Center was established in 2012. The center has indoor and outdoor horse riding courses, and used for general horse riding, therapeutic horse riding, and youth horse riding etc. This program is aimed to nurture the horse industry and therapeutic horsemanship experts. We provide the optimal field training environment to the students, so that they can grow as the experts to contribute to the development of horse industry and local communities.

The Innovative Horsemanship Education Program of this center include not only the horse riding education, but also farmhouse education, development of riding equipment, operation of various competitions, leather craft, 3D printings, and drone educations, etc. which provide sufficient opportunities and experiences to all students.

P-76

## Introduction to the Horseman High School of Korea

Jun Ho CHOI, Cheong Hwa WOO

Department of Horse Industry, Horseman High School, Namwon, Korea

The aim of establishing the Horseman High School at Namwon, Korea is to be the best Meister High School that will lead the development of the horse industry in Korea and to nurture the Young Meisters with good personality and global capabilities in this field.

The Horseman High School started in 1969 and designated as the first horse management specialized high school of Korea in 2001. In 2012, we changed horse livestock department to horse industry department, and broaden the field including not only educating horse livestock, but also educating equestrian and horseman experts. We are doing our best to nurture the future horse industry Young Meister through various commissioned education and field experiences.

The aim of the Horse Industry Department is to produce the experts in horse industry by educating horse riding, therapeutic horsemanship, production and raising horses, and animal health cares. The future careers of the students will be the race horse track rider, the life equestrian instructor, the horseman manager, the horse trainer, the therapeutic equestrian instructor, and the horse production manager etc.

P-77

## Introduction to the BalAn Bioscience High School

Seong Ha KIM, Jeong Il CHOI, Tae Yeong HWANG

BalAn Bioscience High School, Hwaseong, Gyeonggi-do, Korea

The BalAn Bioscience High School started as the BalAn Agriculture High School in 1954, and steadily expanded the departments to reach the present day. We aim to nurture the future leaders who will lead the bio-industry in Korea. We have various departments related to bio-industry including the Department of Animal Industry.

In the Department of Leiser-Animal Industry, we nurture talented students who can be experts in the field of leisure animal industry by acquiring specialized knowledge and skills such as horse management, horse riding, and pet management. Students can get certificates after the course work including the livestock technician, the horseman manger, the life sports instructor (equestrian), the pet handler and trainer, etc. After graduation, students can admit to the college of related fields or they can find jobs in the Korean Horse Association (KHA), the horse riding clubs, the horse ranches and the animal hospitals, etc.

P-78

## Introduction of Gyeongbuk Natural Science High School

Seungik BAEK, Jiyoung LEE

Gyeongbuk Natural Science High School, Sang-ju, Gyeongbuk, Korea

Gyeongbuk Natural Science High School (Yongun High School) is trying to cultivate outstanding talents who will lead the 6th industry in the future through holistic education for nature and animals. In the Department of Horse Care, we foster talented students who can work in the horse industry by acquiring the skills to interact with and manage horses. We train practical horse industry technical manpower through an education method which is closely connected with actual field works.

In the Department of Horse Industry, we nurture talented students who can give cognitive, physical, emotional, and social support to those who are suffering from their disabilities using equine-assisted activities. We aim to cultivate holistic human resources who know how to love both animals and people. The future career of students may include the horse trainer, the therapeutic equestrian instructor, the general equestrian instructor, and the life sports instructor etc. We also have the Departments of Pet Welfare and Pet Beauty that teach grooming pets for their hygiene and health for animals living with humans.

P-79

## Non Profit Organisation and Non Governmental Organisation

Claudia MOTA

Instituto Passo a Passo, Brazil

This informational poster presents our institution (Non profit organisation and non governmental organisation) that offers FREE equine assisted therapy to 60 families in Itatiba, a municipality in the state of São Paulo in Brazil.

We maintain it free by multiplying knowledge through courses for therapists and educators. The corporate world is also very present in our trainings. We promote a more human and conscious corporate world. We offer Equine Therapy Assistance Program in Skills Development in Addiction and we are in process to bring equine therapy into schools.

We present as well the opportunity to discover this rich beautiful country as a tourist and a volunteer by living, learning and working in our centre of human evolution.

Our slogan is: contributing to human evolution through the movements of the horse and of nature.

The English grammar is being corrected at the moment by our professional translating team. Once receiving the guideline, the English will be PERFECT! Our photos will be of high quality too.

P-80

## Rebranding from CPTRH to ACPEA

Joanna PARSONS

CPTRH, United Kingdom

This poster explains the evolution and development of Chartered Physiotherapists in Therapeutic Riding and Hippotherapy (CPTRH) to Association of Chartered Physiotherapists in Equine Activities (ACPEA) over the last 18 months.

Historically CPTRH is a professional network of physiotherapists who are based within the United Kingdom. CPTRH as a professional network was formed 52 years ago and continues to have a membership of approximately 100 members. We are responsible for all post graduate training of Hippotherapists in the United Kingdom. CPTRH provides ongoing learning opportunities, support, development and promotion of research, as well as creating networking opportunities for all physiotherapists who have gained a qualification in Hippotherapy and those involved in Therapeutic Riding. CPTRH holds a register of all practicing Hippotherapists. CPTRH continues to have close links with the Riding for the Disabled Association (RDA), Horses in Education and Therapy International (HETI), and the European Equine Facilitated Therapy Network (EEFTN).

In recent years we have become increasingly aware of the need to broaden our remit, continuing to do all of the above, but to expand in order to meet the needs of our developing membership and including all physiotherapists who are working in the context of Equine Activities. Thus, we have refocussed our mission statement, redefined our terminology, developed training courses and broadened our scope, so we can be more inclusive to all physiotherapists and allied health professionals interested in using the equine as a partner for physiotherapy in the treatment of



children and adults. This has also required a new name, which is now Association of Chartered Physiotherapists in Equine Activities (ACPEA).

Our new mission statement is as follows:

“We are a professional body which is proactive in empowering its members by facilitating learning and development opportunities, supporting innovation and sharing best practice. We provide high quality evidence based physiotherapy, using the equine in treatment and intervention for people affected by illness, injury or disability”.

We offer a range of membership types this including full membership, which is reserved for Chartered Physiotherapists who are registered with the health care professionals council (HCPC); associate membership, which is available to all allied health professionals or non-chartered physiotherapists as well as retired physiotherapists and oversea physiotherapists; student membership is available for Physiotherapy, Occupational Therapy and Speech and Language Therapy students.

Our new website is due for launch at our AGM in June 2021. The website will be a hub of information, guidance and signposting for all our members. We are excited about how this will increase our engagement with our current membership, with the aim of also attracting new members and to provide and meet the requirements for our members in order to support them in their practice.

We feel that ACPEA recognises the work that many physiotherapists are doing within the context of equine activities, as well as supporting the role of the multidisciplinary team within our current practice and the need for collaborative working for all physiotherapists and AHP’s who are working in the field of Equine Activities.

P-85

## Effects of "Let's Develop Networks and Create Opportunities for Hippotherapy" Project on Right to Health Through Hippotherapy

Cafer YILDIRIM

Eskiehir Osmangazi University, Turkey

**Background/Aims:** Our project is aim to create network for Sustainable Hippotherapy system. The Project duration is 46-month and accepted by the European Union Delegation to Turkey linked with European Commission under the scope of "Right to Health". The project consists of 14 business packages to be carried out in cooperation with national and international partners.

**Methods:** According to our studies, each country has different governmental and non-governmental procedures and supporting system. So, we created a pilot model based on local network studies was created in the first stage. An official protocol has been signed between the institutions that will be the basic building block of a sustainable mechanism for this model (university, health directorate, education directorate, veterinary association, forest directorate). After the protocol signed with Eskişehir directorates of the relevant ministries, 8 clients between the ages of 4 and 7 with autism, cerebral palsy and down syndrome were given hippotherapy as the first Ministry of Health approved case studies in Turkey. The results were reported to the Ministry of Health. Afterwards, with the approval of the Clinical Works Ethics Committee of the Faculty of Medicine, the transition of hippotherapy to research and applications in supporting and complementary treatment care became official in our country.

**Results:** The results show that there is an overall improvement of 5% to 15% in the motor and cognitive functions of the clients. With these official research reports, the Ministry of Health has been asked to recognize the hippotherapy as a complementary health service within the framework of access to the right to health, and include in relevant legal legislation. Hippotherapy network meetings and centers are organized in 8 different regions of the country with 16 Hippotherapy center on the implementation of the local model in the process. Thanks to the cooperation, information sharing and research infrastructure of the network created, meetings will be held with legislators and legal arrangements will be requested to ensure that hippotherapy practices are funded by general health insurance. In addition, a legislation is prepared to include basic subjects such as the application areas, practitioners and target audience of hippotherapy and the approval of beneficiaries and volunteers by the Turkish Grand National Assembly throughout the country campaign process is followed. Within the scope of the project, our scientific studies are planned and implemented to investigate the therapeutic effects of hippotherapy in various handicapped groups included children, adolescent, adults and geriatric populations with a broader perspective. As part of scientific studies, in addition, the production of informative materials such as books and documentaries on hippotherapy will be supported within the scope of the project.

**Conclusions:** The Project will contribute to HETI's mission to collaborate worldwide on hippotherapy and activities through Turkish and European network aims to establish and scientific researches. This will be an important process in the formation of innovative ideas and projects aimed at strengthening global network.

Keyword: Hippotherapy, Turkey, Network, Health

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## HANDHIPPO

KUYPERS

HETI Federation

The Belgian association of therapists specialized in Hippotherapy is a national nonprofit association registered since 1975.

**Philosophy:** The therapy is given by therapists with a diploma recognized by the Belgians Ministry of Health: doctor in medicine, physiotherapist, occupational therapist, speech therapist, clinician psychologist and osteopath. Each therapist will use the horse in his own specificity relevant of his practice.

### Purposes:

- Connect the therapy with the horse between the different professions.
- Clarify for the general public the different manners to work with the horse.

### Activities:

- Focus the special needs of the client to the right person.
- Advise the students on what courses to follow to specialize in working with the horse.
- Propose scientific activities: symposiums, seminars.
- Organize festivities for clients: exhibitions...

### HANDHIPPO:

- Was involved in collaboration with France, Luxemburg and Switzerland in making: “the chart of the therapist with the horse.”

- Is active member of:

HETI (Federation of Horse in Education and Therapy International)

FITRAM (Federation internationale de Thérapie et de Relation d’Aide par la Médiation)

GIETAC (group of scientific research over the therapy with the horse)

In 2002, HANDHIPPO were recognized and gratified for his well-founded usefulness, during the exhibition made by the EUROPEAN PET NIGHT.

Website: [users.skynet.be/handhippo](http://users.skynet.be/handhippo)