Equine to Equilibrium:

A Heart-Centered Approach

by TWYLA LEHMANN, RN, BN, HNB-BC

"I've often said there's nothing better for the inside of a man than the outside of a horse." – *Ronald Reagan*

The bond between human and horse spans millennia and has been revered as sacred, even magical, as commonly depicted in folklore and children's stories. New research aims to capture measurable data related to this heart-centered bond. With recent advancements in understanding heart rate measurement, this article explores the existing literature on the physiological "heart bonds" between humans and horses. Specifically, it highlights research from the past 20 years on Equine-Assisted Services (EAS) focusing on heart rate indicators, and suggests potential areas of research for the future. Having experienced these strong and sacred healing bonds, I was intrigued by what the research might reveal.

THE HEART OF THE MATTER: HRV & VLF

Interestingly, equines have lower heart rates compared to humans. Horses have an average heart rate from 28 to 40 bpm, whereas humans have a resting heartbeat of around 80 bpm. When in proximity to horses, the human heart rate slows down. This is often anecdotally experienced as a sense of calm around horses (Baldwin & McCraty, 2014).

Heart rate variability (HRV) refers to the variation in time intervals between heartbeats and the heart's ability to adjust to different stimuli. High HRV indicates that the heart is healthy, with the ability to regulate the parasympathetic and sympathetic nervous systems (Meaux, 2019). Low HRV correlates with poor heart health or the inefficiency of the heart to respond to stimuli, which predicts cardiovascular diseases. Studies have shown increased HRV in older adults during interactions with horses, suggesting greater tolerance to stress and adverse events (Pham, 2015).

Horses exhibit a distinct Very Low Frequency (VLF) component in their HRV. Very Low Frequency (VLF) is an intrinsic rhythm of the heart associated with good health in humans and is characteristic of horses at rest. This frequency range corresponds to slow oscillations in HRV (.003-.04 Hz, rhythms with periods between 25 and 300 seconds) (Baldwin et al., 2023; McCraty, 2015). Experiments in humans suggest VLF is an intrinsic rhythm that is fundamental to physical and psychological health and wellbeing. Low occurrence of VLF may correlate to inflammation and PTSD in humans. Equines in a relaxed state seem to have high VLF power (strength of the VLF oscillation) in their HRV frequency spectrum (Baldwin et al., 2023). Increased VLF power in humans during interactions with horses has been linked to positive emotional states and stress reduction. One study found large increases in both the horse and human VLF rhythms during interactions with each other that did not occur with humans alone (Baldwin & McCraty, 2014).

In further studies, VLF was not a specific marker (Gehrke et al., 2011), and in a follow-up study the data was unmeasurable due to artifact (Gehrke et al., 2016). Despite some data loss, the study concluded that HRV analysis showed increased HRV and sympathetic tone during client-horse interaction, resembling that of well-trained athletes (Gehrke et al., 2016).

Also, there has been demonstration of LF/VLF bands coherency (Baldwin & McCraty, 2014), which further demonstrates the essential flexibility of the nervous system to respond to threat, stress, and stimulation, and brings the system back into homeostasis.

SYNCHRONIZATION & COHERENCE

During interactions, horses and humans can synchronize their HRV patterns, indicating physiological and emotional connection in both LF and VLF bands (HeartMath Institute, 2022). Professor Ellen Gehrke, PhD and colleagues, conducted ECG studies showing that HRV is sensitive to emotional states: anxiety results in incoherent patterns, while states such as appreciation lead to coherent patterns (Gehrke et al., 2011, 2016). During coherent states the heart and brain work together in a more organized fashion. Conversely, anxious states make it harder to access other resources in the brain (cognitive function or parasympathetic activation). When the heart and brain are incongruent, a person may exhibit sympathetic/survival mechanisms, resulting in disorganized thinking, decreased decision-making ability, and so forth.

Dr. Gehrke's study found that sending appreciation to horses in a specific equine-assisted learning process created a coherent human heart rate pattern that often synchronized with their equine partner (Gehrke et al., 2011; HeartMath Institute, 2022).

POTENTIAL BENEFITS

Horses can mirror a person's unconscious feelings, bringing to the surface hidden, suppressed, or dissociated emotions in a safe, authentic, non-judgmental space. They have a keen sense of awareness and astute prey alertness, followed by a natural inherent process to regulate their nervous system, often viewed by the human as dramatic physiological 'let-downs' (i.e., shaking their bodies, yawning, releasing the jaw). This can activate mirroring in the unconscious human brain to also 'let-down' and allow the nervous system to regulate, providing a pathway to find inner calm, heal from trauma, cultivate self-awareness, and release stuck or blocked energy.

Seven neural circuits of the limbic system have been tested and verified by neuroscientist and psychobiologist Dr. Jaak Panksepp. Six of these mirror cognitive domains found in both the equine and human, providing a catalyst for experiential learning that can surpass office-type talk therapy in certain clients (Shambo et al., 2013).

These principles have been applied to a wide range of treatment and populations: at risk youth (Meaux, 2019), mother-child dyads with insecure attachments (Beets et al., 2015), medical students (Chakales et al., 2020), complex trauma, PTSD, (Gehrke, 2018), dysfunctional behavior patterns, (Johansen et al., 2016), suicide prevention (Muela, 2021), trauma-informed care, and physiological effects on the elderly (HHRF, 2021; Pham, 2015), to name a few.

AREAS FOR FUTURE STUDY

EAS categories are broad and complex; more research is needed to create relevance in the sphere of choice in the individual's healthcare options. Two major themes arose in my review of the research. First, EAS often involved small sample sizes due to the nature, complexity, and specificity of the intervention. Secondly, it was noticed that one's adherence and length of program correlated to positive results of treatment. Future studies could explore the impact of having an equine/animal

Healing with Horses

I can attest to the life-saving power of animals, particularly equines, and their ability to mend the soul. I grew up in a volatile family environment; horses were my secure place, my escape, my everything. Their authentic, non-judgmental, heart-warming presence gave me a safe space to release my emotions, ask my philosophical questions, and to just be and feel. They were my witness. They were the ground I couldn't feel under my feet. They helped me transmute my pain and suffering into empathy, love, and kindness. They helped me develop resilience in a world of confusion and pain, and for that, I owe them my life. Learn more at www.thelanterntl.com

partner on a person's adherence to a treatment program. Long-term studies comparing other treatment modalities and a control group are recommended.

SAFE SPACES FOR HEALING

Holistic nurses are uniquely positioned to integrate this research into patient care. Standard 5B in the *Holistic Nursing: Scope and Standards of Practice* speaks to providing a safe environment for healing to occur (ANA & AHNA, 2019). The equine naturally does this through its sensitivity, present state of awareness, and inherent ability to regulate its own nervous system. Partnering with our equine friends creates a safe and authentic space where human-animal "heart bonds" are formed to allow for natural healing to transpire.

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