The Effectiveness of Equine Guided Leadership Education to Develop Emotional Intelligence in Expert Nurses: A Pilot Research Study

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Background

Inter-Collegiate Collaboration

Since 2009 the Center for Leadership Development, in the University of Kentucky's College of Agriculture, has been pursuing opportunities to conduct research that would document the effectiveness of Equine Guided Leadership Education in developing leadership competencies. In August of 2011 the Center for Leadership Development (CFLD) approached nursing specialists in the Trauma/Acute Care Surgical Service Line and the Neuroscience Surgical Service Line at University of Kentucky Chandler Hospital (UKCH) to determine if there was interest in collaborating on a pilot study that explores the effectiveness of working with horses to develop emotional intelligence in nurses.

It was agreed to collaborate in pioneering research that would benefit the emerging field of Equine Assisted Learning (EAL) and contribute to the fields of leadership studies and nursing development. Over the next few months our team of researchers worked together to design a pilot study that was approved by the University of Kentucky's medical Internal Review Board and the Institutional Animal Care and Use Committee in October 2011. In March of 2012 the study was launched and the data collection was completed in November of 2012.

Pioneering Research

There are several healthcare institutions across the United States that utilize Equine Assisted Learning activities as part of their training and development for both nurses and medical students. In 2001 Dr. Alan Hamilton, horseman and professor of Neurosurgery at University of Arizona, developed a program utilizing horses to address the difficulty in teaching non-verbal skills to medical students. Since 2005, medical students at Stanford University have participated in a program called Medicine and Horsemanship™, which is designed and facilitated under the direction of doctor-patient communication expert Beverley Kane, MD. Dr. Kane currently consults with medical and nursing schools across the country in developing EAL programs for their students and personnel (Kane, 2004). Other institutions using this type of experiential learning are Massachusetts General Hospital in its Nursing School, University of Southern Florida Health Sciences within its Leadership Institute and Washington State University Nursing School to teach its Effective Communication Training among others. An extensive literature search on this topic suggests that this pilot would be one of the first academic studies to do research on the topic of developing emotional intelligence in nurses via participation in an Equine Guided Leadership Education experience.

Why Horses?

In the wild horses are animals of prey and though humans are omnivores and have domesticated the horse there still exists an instinctive predator/prey dynamic between humans and horses. Horses communicate non-verbally and rely on immediate feedback from their environment to survive. It is this communication dynamic between horses and humans which provides a rich learning environment- one full of relational problem solving that allows people to learn emotional sensitivity, self and social awareness, self-management and effective communication skills and strategies. Research conducted on non-verbal communication between nurses and their elderly patients found that non-verbal interactions play a vital role in nurse-patient perceptions (Caris-Verhallen, 1999). Similar non-verbal interactions, based on *awareness of* and *effective use of* nonverbal skills and heightened perception and sensitivity, are not only magnified when working with horses but foundational for establishing a working relationship with them. Therefore, it is the researchers' supposition that learning transfer, defined as learning which occurs in one context having an impact on performance in another context (Perkins,1992), would occur more readily with participation in a facilitated equine guided experience.

Horses are also very large animals and working with them successfully requires one to become very present and aware – much like the horses themselves. A recent pilot study by Walsh and Blakeney (2013) suggests that working with horses increases nurses abilities to become present.

A large body of anecdotal evidence suggests that collaborating with the horse can be an excellent example of learning leadership competency, including emotional intelligence, *in* and *through* action. In effect, horses don't lie. Due to their natural prey instincts they respond honestly to how a person is showing up on both a physical and emotional level and provide in-the-moment feedback. Because horses give feedback on every action we make and every emotion we hold, working with them forces us to engage in first, second and third level feedback or "action inquiry" (Torbert, 2004).

William Torbert, professor of management and former director of the Ph.D. Program in Organizational Transformation at the Carroll School of Management at Boston College, has written extensively on what he calls action inquiry - the process of questioning in relationship with action. He states that "experiential learning involves becoming aware of the qualities, patterns and consequences of one's own experience as one experiences it" (1972, p.7). By increasing curiosity (inquiry) and awareness about the comfort level of the horse, and getting honest in-the-moment feedback from them we can choose to act in ways that make collaboration happen easily and more frequently. Consistent and

conscious actions, in this case non-predatory actions on a leader's part, builds trust among the followers (the horse/ "patient"), as well as allow people to become conscious of how their emotions and body language affect those around them and therefore learn how to manage them effectively in the moment.

Kathleen Walsh, RN, Phd. and Barbara Blakeney, MS, RN, FNAP, (2013) in a recent pilot study that looked at the effectiveness of EAL to develop nurse presence, found that nurses who experienced a one day workshop with the horses "reported being empowered through EAL to develop themselves through self-awareness, building confidence, and advanced verbal and nonverbal communications skills" (p.6) and concluded that "EAL can be a meaningful venue for nurses to self-discover their ability to be present" (p.1). This observation by Walsh and Blakeney relates back to Torbert's action inquiry and to emotional intelligence theory as it pertains to increasing present moment awareness of self and the environment such that nurses can make better decisions and take more effective actions.

Significance

The Equine Assisted Learning Field

Over the past two decades there has been explosive growth worldwide in the emerging Equine Assisted Learning (EAL) industry. Equine Assisted Learning activities include experiential learning methods in which facilitated horse/human interactions result in learning and development of the participants. In the United States alone there are more than 700 centers that provide some type of equine assisted learning program, and four internationally recognized associations in the United States alone that teach, support and certify their members in collaborating with horses for healing and human growth and learning purposes (Hallberg, 2008). Most research in the area of horse/human interactions has been focused on the efficacy of working with horses for therapeutic results, as with hippotherapy (working with horses to improve physical balance and mobility) (Shurtleff, Standeven, Engsberg 2009; Silkwood-Sherer, Warmbier, 2007; Sterba, 2007), mental health applications (Esbjorn, 2006; Schultz, Remick-Barlo, Robbins, 2007; Nirdrine, Owen-Smith, Faulkner, 2002) and with children with autism (Gabriels et al, 2012). However, very little academic research has been conducted and published that explores the effectiveness of working with horses to improve emotional intelligence and other leadership competencies. For EAL and other equine assisted activities to gain credibility as legitimate learning and development methods for humans more academic research studies like this one need to be conducted.

Study Impact on the Field of Leadership Studies

Emotional Intelligence (EQ), defined by researchers Salovey and Mayer (1990), is "the ability to monitor one's own and others' feelings and emotions, to discriminate among them and to use this information to guide one's thinking and actions" (p. 189). Researchers Bradberry and Greaves, founders of TalentSmart and authors, providers and trainers of the EQ assessments utilized in this pilot study, define emotional intelligence more broadly and align with Goleman's competency based model of EQ as "the ability to use awareness of emotions to manage behavior and relationships with others" (2011, p.3). In their book *Primal Leadership: Learning To Lead with Emotional Intelligence*, Goleman, Boyatzis, and McKee (2002) speak to the importance of creating high performance teams and profitable organizations through the development of emotional intelligence (EQ) competencies: *Self Awareness*- including emotional self-awareness, accurate self -assessment, self- confidence, and *Social Awareness* - including empathy, organizational awareness, and service.

This research pilot adds to our general understanding and knowledge about how emotional intelligence competencies are effectively developed but also how learning about ourselves as leaders via interspecies relationships deepens our understanding about the role of somatic intelligence as it relates to both emotional intelligence development and non-verbal communication. Somatics, from the Greek, refers to

the body in its wholeness and defines it as "of, relating to, or affecting the body" (Woolf, 1979, p.1099). "Generally, it also implies a philosophy of mind and body unity" (The Free Dictionary, 2006, para. 5). Somatic intelligence and the "embodiment of leadership" is a new area of study in the world of leadership studies as confirmed by a recent call for papers from the International Leadership Association for its peer reviewed publication on *The Embodiment of Leadership: A Volume in the ILA Building Leadership Bridges Series* (forthcoming in 2013). Richard Strozzi-Heckler, master somatic coach and founder of the Strossi Institute, Center for Embodied Leadership and Mastery, firmly believes that the "body [is] indistinguishable from the self" and that "it is essential to include the body if one wants to build the skills of exemplary leadership" (2003, p.19). Horses establish leadership roles within the hierarchical social structure of the herd. Each horse's role is communicated via somatic sensibilities which includes both very subtle and blatant body language. To a lesser extent humans also define their leadership status and roles in society by the use of non-verbal cues. Therefore, having horses become the facilitators in learning both emotional and somatic intelligence could assist in developing effective leaders.

Relevance to Nursing Practice

With employee turnover taking its toll on the various nursing service lines at University of Kentucky Chandler Hospital (UKCH), the importance of investing in developing expert nurses into confident mentors of the next generation of nurses cannot be understated. At the time of this study and to date there has been no institutionalized programming focused on the continued development of emotional intelligence and leadership skills for the expert nurse demographic at UKCH.

The call for transformational leadership in nursing by the Institute of Medicine recognizes the emerging role nurses will play as leaders in healthcare (Institute of Medicine, 2011). A core value and organizational goal of the American Organization of Nurse Executives (AONE) is leadership (The American Organization of Nurse Executives, 2011). A key strategy is to focus on transformational leadership competencies and identify, mentor, and coach emerging nurse leaders. Competency development and performance is an ongoing and dynamic process as depicted in Benner's Theory of Novice to Expert (1982). Dracup and Bryan-Brown (2004) discuss that it is time to go beyond Benner's expert level and focus on developing expert nurses to become preceptors, or in other words, mentors to the novice, advanced beginner, competent, and proficient nurses. The influx of newly graduated nurses will most likely put demands on current clinical nurse experts and require that they step up into a mentor role for this next generation of nurses. This pilot study targets these aims of mentoring and training future nurse leaders.

Over the last decade there has been growing interest and research conducted on the impact of developing the emotional intelligence (EQ) competencies of nurses and other health professionals (Freshwater & Stickley, 2004, Vitello-Cicciu, 2002, Kamikawa, 2010; Munro, 2010). Researchers are assessing the current level of emotional intelligence development in nurses to demonstrate a correlation between those with higher EQ and their job performance, and satisfaction, suggesting that emotional intelligence may be a useful concept for exploring innovations that target improved clinical staff performance and retention (Codier, Kamikawa, Kooker and Shoultz, 2009). However, most studies are **not** looking at *the ways in which nurses actually develop or enhance their EQ*. Therefore, integrating a model of "transformatory learning" of emotional intelligence competencies into nursing education curriculum not only enables students to learn, but also facilitates the process of transformation in that learning (Freshwater, 2002). Anecdotal evidence as well as recently completed research projects from experts in the field of equine assisted learning (Kane, 2004, Walsh & Blakeney, 2013 and Notschaele, 2011) find that working through various guided exercises with horses provides participants unique and individual "transformatory" learning encounters that Freshwater & Stickley (2004) speak about.

Purpose

The purpose of this pilot study was to identify, through the use of before and after emotional intelligence assessments and qualitative surveys, the effectiveness of Equine Guided Leadership Education (EGLE) in developing emotional intelligence competencies in expert nurses, where expert is defined as having been in his or her current role for five years or more. The research objectives were as follows:

1. To determine the feasibility and effectiveness of EGLE to develop emotional intelligence/ leadership competencies.
2. To test for differences in perceived emotional intelligence competency over six months between the intervention and control groups.

The findings lay the groundwork for subsequent studies of larger and more diverse populations of expert nurses using a more rigorous longitudinal design.

Hypothesis

The hypothesis going into this research pilot was that participation in an Equine Guided Leadership Education (EGLE) workshop would be effective at developing the emotional intelligence competencies being measured by the assessment instrument and the qualitative surveys, and therefore have the potential of influencing positive patient outcomes and developing professional nursing teams.

Method

Research Design

Qualitative data in the form of pre and post online emotional intelligence assessment scores and qualitative surveys were utilized in this quasi-experimental design that included an intervention group that participated in an Equine Guided Leadership Education workshop and a control group that did not. The Emotional Intelligence Appraisal™: The Me Edition by Travis Bradberry and Jean Greaves (2009), founders of TalentSmart®, the leading provider of emotional intelligence tests, products, training and consulting, was used to measure the change in EQ pre and post intervention for both groups. This assessment is an online statistically valid instrument that measures and reports an overall EQ score, scores in the two main EQ competency areas-Personal Competence and Social Competence, as well as scores in each of the four sub-competencies (See Figure 1).

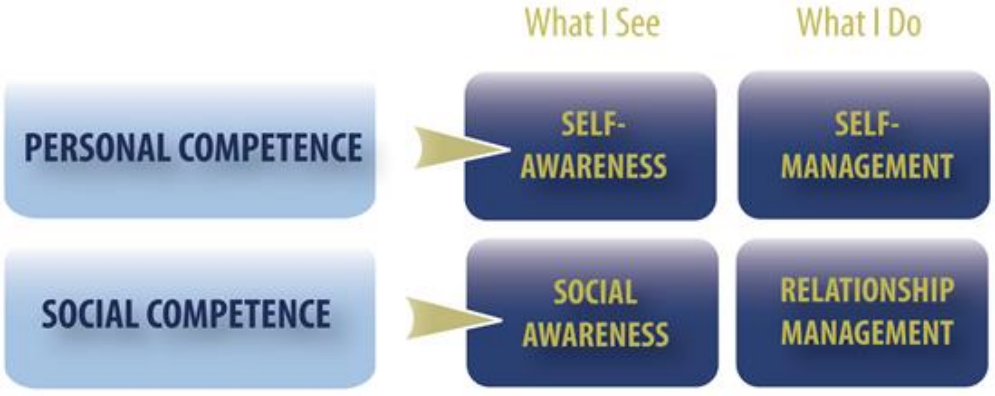

Figure 1.
(Image used with permission of TalentSmart®)

A brief description of the four sub-competencies are as follows:

Self-Awareness: A person's ability to accurately perceive his or her own emotions and remain aware of them as they happen.

Self-Management: A person's ability to use awareness of his or her own emotions to stay flexible and positively direct their behavior.

Social Awareness: A person's ability to accurately pick up emotions in others and understands what other people are thinking and feeling even if they don't feel the same way.

Relationship Management: A person's ability to use awareness of his or her own emotions and the emotions of others to manage interactions successfully using clear communication and effectively handling conflict (Bradberry, Greaves, 2011, p. 5).

This online EQ assessment was chosen for its simplicity to use and gather individual EQ competency scores, its statistical validity (Bradberry, Greaves, 2011), the confidential nature of the assessment, the ability to re-assess participants six months later, and its cost. Use of this assessment allowed the researchers to administer the assessment and retain each participant's EQ report and strategies, which are normally sent directly to those who take the online assessment. The reasoning behind the withholding of this information from the participants was to minimize the variables that might contribute to any change in their pre and post EQ scores. In so doing the researchers were attempting to isolate the horse experience as the main variable that could explain any changes in pre and post scores of the intervention group.

The workshop qualitative surveys that were administered to the intervention group immediately after their EGLE workshop intervention and then again three months later were written by the principal investigator and analyzed for content themes and examples of applied learning of emotional intelligence competencies in the intervention group. A mixed-methods approach was utilized to analyze the findings of both the assessment scores and the qualitative survey findings.

Procedure

A voluntary sample of 21 expert nurses was recruited via a targeted email recruitment letter to the intervention or control group; assignment was determined by the unit service line. An expert nurse is defined as having been in his or her current position for a minimum of five years. It was determined that expert nurses from the Trauma/Acute Care Surgical Service Line (n=11) would participate in the intervention consisting of a carefully designed one day EGLE workshop, while expert nurses from the Neuroscience Surgery Service Line (n=10) would act as the control group. These service lines were chosen because of their similarities in job duties, size of the units and because these units were physically separate from each other within the hospital such that contact between the research groups was kept at a minimum.

After signed letters of consent were collected from all participants, both groups completed the online Emotional Intelligence Appraisal: The Me Edition by TalentSmart® as the pre-intervention measurement. The intervention group attended a one day EGLE workshop. Qualitative survey data was also collected and analyzed from the intervention group immediately after the EGLE workshop experience and three months post workshop. At six months post-intervention, both groups were re-assessed using the same online EQ assessment by TalentSmart®. None of the nurses participated in any additional training program that focused on emotional intelligence in the six month time period between

the pre and post assessments. (See Figure 2.) All research participants were given access to their pre and post EQ scores, reports and strategies to improve their EQ upon completion of the final assessment. Participant confidentiality was maintained by substituting names with online access codes for the pre and post online EQ assessment scores data analysis, and there were no identifiers on the written qualitative surveys for those in the intervention group.

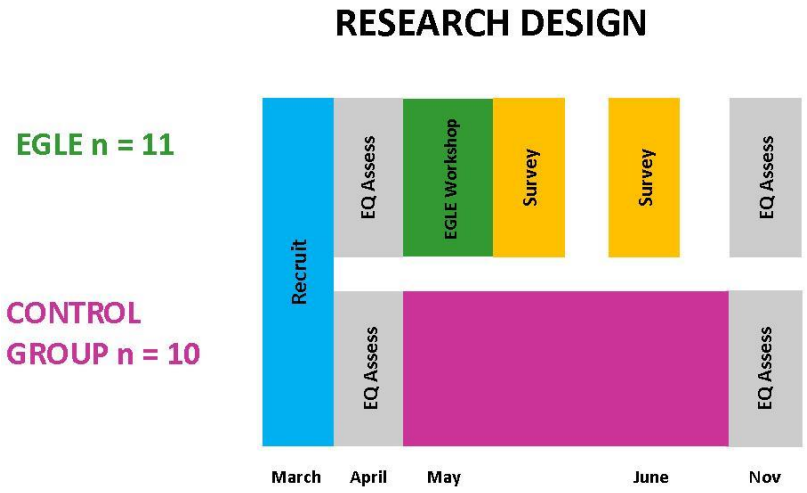

Figure 2.

Intervention with the Horses and Workshop Design

The intervention group attended a one day EGLE workshop at a local horsemanship center. The workshop was conducted by two certified Equine Experiential Education facilitators, including research co-investigator Lissa Pohl, as well as two horse handling assistants. Participants engaged in a series of five different exercises with horses designed to address challenges within their units utilizing emotional intelligence competencies. These individual and group exercises required no previous experience handling or riding horses. All learning exercises were conducted from the ground and included the following types of horse/human engagements: direct observation of horses, haltering, leading horses, taking the vital signs (respiration and heart rates) of a horse, as well as working with horses at liberty (no physical contact with ropes) in an arena or round pen. Each activity with the horses was debriefed as a group and action steps for dealing with certain work challenges were determined.

Each exercise was designed to target the development of different EQ competencies as well as to build participant confidence in working with the horses as the day progressed. General descriptions of each exercise and the EQ competencies they addressed are as follows:

Welcome, Introductions and Emotional Intelligence Overview: Facilitators gave participants a handout which introduced them to the TalentSmart® EQ model and competency descriptions (Refer to Figure 1.). For most of the nurses this was the first time they were even aware of what the research pilot was attempting to accomplish and most had never heard of emotional intelligence and its importance in the workplace.

You Said What With Your Body? The Importance of Non-Verbal Communication: This was a demonstration of how horses react to different kinds of body language whereby one facilitator walks into a small herd of horses and uses very aggressive gesturing and emotional cues. The horses scatter around and are visibly upset. The facilitator then calms their movements and their emotional energy down

and soon the horses respond in the same manner. An overview of the Predator /Prey dynamic was discussed in connection to body language. Participants debriefed their observations and identified the connections between body language, their team dynamic at the hospital and patient care. The EQ competencies that underlay this exercise are self-awareness – my moods and body language are picked up by others; self-management – if I change my body language and emotional energy I can have a direct effect on the situation; social awareness – other beings' responses to me impact the entire organization.

Primum non nocere- "First, do no harm", the "Hippocratic oath" - Safety Check: All participants were shown how to approach, walk around, and touch a horse in a safe manner much like they would approach and work with a new patient. Targeted EQ competencies include: self-awareness self-management and social awareness.

Sphere of Influence Exercise: This is an active walking exercise without horses where participants pair up together with one person as the leader and one as the follower. Without speaking to each other the pair then walks side by side around the arena until, through their non-verbal communication, there is a feeling of working together as one entity. The objective is to learn how to influence and communicate with another person via body language without words. The EQ skills of self and social awareness as well as self and relationship management come into play here.

Leadership is Attractive: In a large arena a two teams of participants attempted to get a horse to join their team and follow them around willingly without any means of contact (food, ropes, touching etc.). Each team had time to plan how they were going to achieve this goal. Verbal communication amongst each other was not allowed. This exercise was an extension of the *Sphere of Influence* exercise further emphasizing the EQ competencies of social awareness and relationship management.

Patient Care Corral (Adapted from Beverley Kane, 2007): After dividing the large group into groups of three participants each group was instructed to accomplish the task of taking the vital signs (heart rate and respiratory rate) of four horses. Each group of nurses was given a stethoscope and one of three roles, the new nurse, the nurse mentor, and the healthcare tech person who held the horse. These roles were rotated as were the horses. The EQ competencies of self-management and relationship management within a chain of command were explored and emphasized.

OK with horse handler Carrie Bowling and nurse researchers Janine Lindgreen and Carol Noriega practicing the *Patient Care Corral* exercise during the workshop development phase.

Domino with research investigator Lissa Pohl, Carol Noriega, Carrie Bowling and Janine Lindgreen developing relevant workplace metaphors for the *Revolving Door* exercise.

The Revolving Door - Intra-departmental Communication (An adaptation of *Leadership Transitions* from the Facilitating E3 Corporate Training, 2009): In the round pen with one or two loose horses the participants chose a real time challenge they were experiencing in their unit and were asked to devise a plan on how to address this challenge by applying new body language skills, utilizing feedback from the horses and working together. The two teams were split into two departments and their task was to see that the 'patient' traveled safely and effectively through their department to the next department. Each team had time to strategize and then work with the other team to execute their plan. Not only were the EQ competencies of self and social awareness and self and relationship management brought into play but also effective communication, visioning, planning. Problem solving and team building were utilized.

Workshop Debrief: Participants filled out the short qualitative survey about their experiences with the horses and discussed the day's insights. They left the workshop with action items that the group indicated could improve their effectiveness at work.

Results

Online EQ Assessments

The pre-assessment EQ scores for both groups, across all the dimensions, ranged from 55.5 to 97 (on a scale of 100). The average pre-assessment scores for both groups were in the low 70's. (See Table 1). Such scores, according to TalentSmart®, suggest that these dimensions could use some improvement. A comparison of the EQ pre-assessment scores of the intervention group and the control group revealed that there was no significant difference between the two groups to start with.

The comparative analysis of the pre and post scores found that changes in individual overall EQ scores ranged from a -6 to +19 for the intervention group and from -7 to +7 in the control group (that is some participants scores increased by 7 points and some scores declined by 7 points). The mean change score for each group in each EQ competency area was derived by averaging the individual change scores in each area. The *Overall EQ* change score for the intervention group was higher at +4.1 points, than for the control group at -0.9 points. (See Figure 2). At post intervention, while the control group remained relatively the same on mean scores across all dimensions, there was a consistent increase in scores for the intervention group across all dimensions. Most notably was the significant difference of overall post score on *Relationship Management* (Control group mean score 69.2 vs. intervention group mean score 78.6 and a change score of -2.4 vs 8.2 respectively). The intervention group also scored significantly higher on the change score of *Social Competency* (-.07 vs 6.3). One must keep in mind the low sample size of this pilot

study. However, it does suggest a pattern of improvement due to the intervention with the horses. (See Table 1. And Figure 3).

			Before Intervention			After Intervention			Difference Score		
Scale	Group	N	Mean	Std. Dev.	t	Mean	Std. Dev.	t	Mean	Std. Dev.	t
Overall EQ Score	Control	10	72.3	6.3		71.4	4.6		-0.9	5.1	
	Intervention	11	71.6	8.2	0.21	75.7	8.5	-1.47	4.1	7.0	-1.88
Personal Competency	Control	10	72.7	7.3		71.8	5.8		-0.9	7.3	
	Intervention	11	72.5	8.2	0.06	75.0	9.1	-0.97	2.5	9.5	-0.93
Self Awareness	Control	10	76.6	9.3		72.2	8.6		-4.4	11.8	
	Intervention	11	74.1	9.7	0.60	74.4	10.8	-0.51	0.3	11.4	-0.92
Self Management	Control	10	68.8	6.8		71.0	4.4		2.2	4.8	
	Intervention	11	71.0	8.6	-0.65	75.2	8.7	-1.41	4.2	8.4	-0.67
Social Competency	Control	10	72.0	7.1		71.3	5.0		-0.7	5.5	
	Intervention	11	70.3	8.6	0.50	76.5	8.3	-1.78	6.3	6.9	-2.57
Social Awareness	Control	10	72.4	7.1		72.9	5.1		0.5	5.7	
	Intervention	11	70.1	10.6	0.59	73.9	9.4	-0.31	3.8	8.8	-1.04
Relationship Management	Control	10	71.6	8.6		69.2	7.0		-2.4	8.1	
	Intervention	11	70.5	7.5	0.32	78.6	8.7	-2.75	8.2	7.3	-3.14

Table 1.

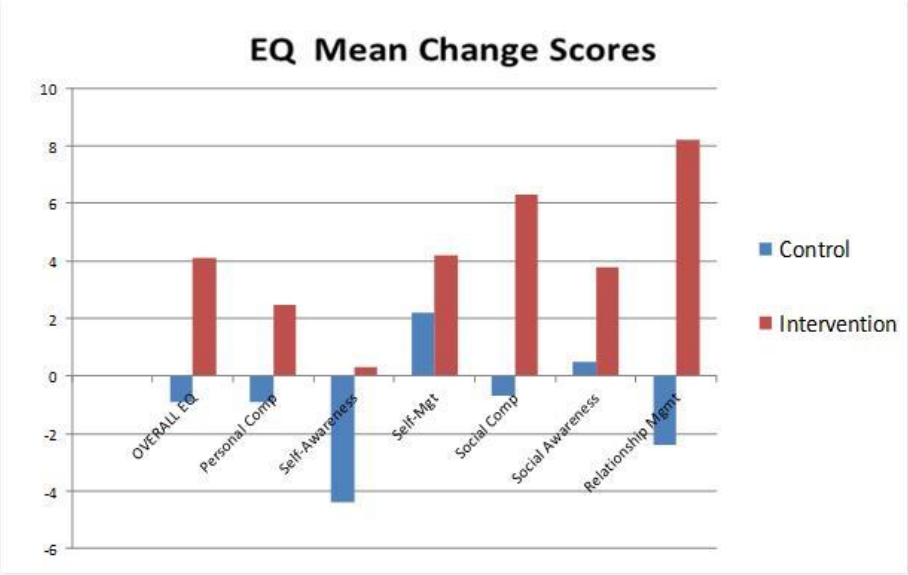

Figure 3.

Qualitative Surveys

Immediately after the workshop the intervention group filled out qualitative surveys. A thematic content analysis of these surveys was conducted using The TalentSmart® EQ competency model (refer to Figure 1.) to code the following themes: *self-awareness; social awareness; self-management; relationship management*. Other themes, not directly based on the competency model were also coded; *non-verbal communication/body language; influencing others;* and *application to the workplace.* For each survey question the total number of references made for each theme was tallied, as well as an overall total of the themes for all of the questions. The total number of respondents, out of 11 participants, who mentioned each theme was also noted (See Figures 4-9). These results indicate that working with the horses was

effective in heightening self-awareness (44 references, 11out of 11 participants), increasing the awareness of the importance of non-verbal communication/ body language (31 references, 11 out of 11), social awareness (22 references 10 out of 11), and to a lesser degree, influencing others (8 references, 5 out of 11), self-management (13 references, 8 out of 11), relationship management (2 references, 2 out of 11) and application to work (6 references, 5 out of 11 participants).

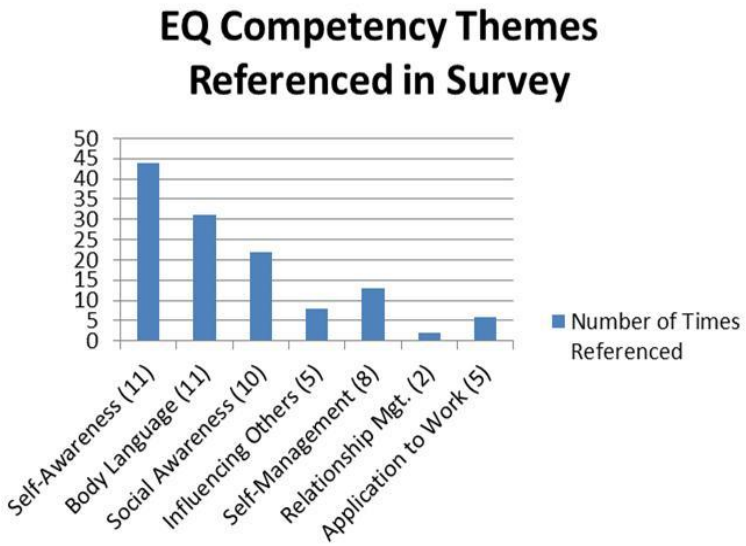

Figure 4. Total EQ Themes Referenced

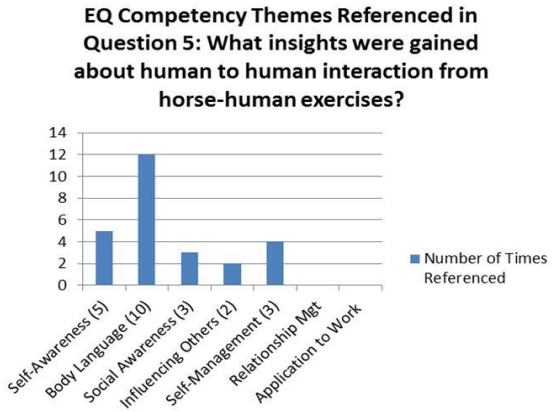

Figure 5. EQ Themes Referenced in Question 5

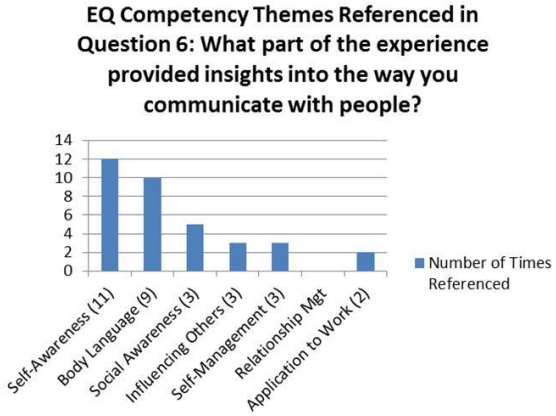

Figure 6. EQ Themes Referenced in Question 6

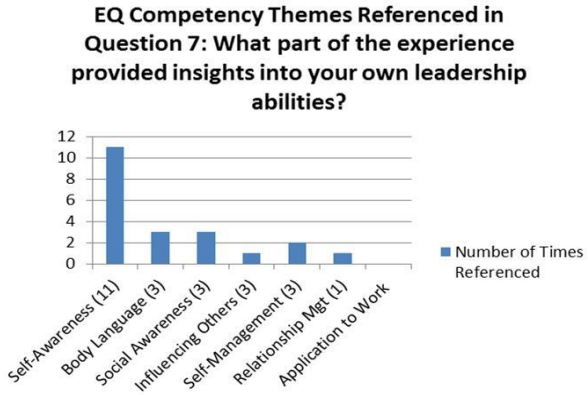

Figure 7. EQ Themes Referenced in Question 7

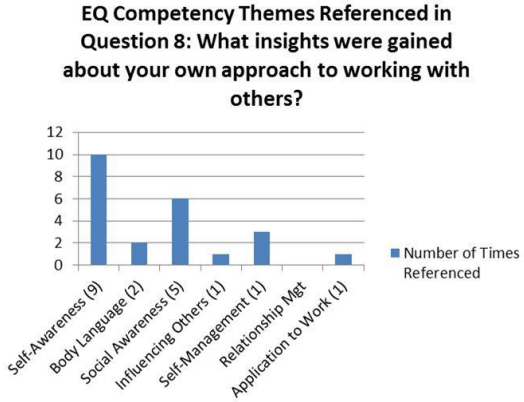

Figure 8. EQ Themes Referenced in Question 8

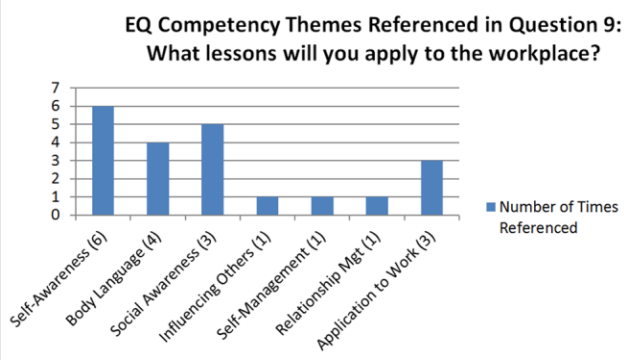

Figure 9. EQ Themes Referenced in Question 9

Eight out of the 11 participants from the intervention group responded to the follow-up survey that was distributed three months later. This survey included six Likert scale questions that addressed the EQ competencies of self-awareness and social awareness, as well as the notion of feedback from the horses and applications to work. A majority of the eight respondents replied that they *agreed* or *strongly agreed* to the following statements:

- Working with the horses was effective at developing my self-awareness
- Working with the horses was effective at developing my awareness of others
- The feedback that the horses gave me enabled me to grow personally and professionally
- It was easier to take feedback about myself from the horse(s) than from other people
- I am better at noticing and using non-verbal communication in the workplace since the workshop
- Since the workshop I have made changes in how I engage others at work (peers, patients and administrators)

This follow-up survey also included an open ended question asking participants to describe how they have applied what they learned from their encounter with the horses to the workplace. Many of these responses included the themes mentioned in the initial qualitative survey. However, what was most striking about their responses was the transforming nature of their applied behavior. Examples of these responses from different nurses are found in Table 2.

Have you had an opportunity to apply some of the insights and skills that you learned from the horses in the workplace? If so, please give a detailed description of each skill or insight that you applied as well as the situation(s) in which you applied those skills.		
Nurse A	Nurse B	Nurse C
"I am a shy person and often stay very cold so to protect myself from (create a barrier between) others and the cold, I fold my arms in front of me. It was brought to my attention that the thing I did to protect (and comfort) myself gave the impression to others that I was stand offish, bored, or some other negative feeling. I am more aware of that now and try to refrain from doing that, especially around my patients and their families."	"By giving positive feedback and encouraging others with positive reinforcement, I have been able to influence my co-workers when I've been in a charge nurse role to become more efficient with their daily tasks for the better of the "herd" or group!"	"I have used the techniques personally with my patient's family who are in crisis. One instance I recall – an irate family member (mother) was verbally abusive/ insulting regarding the nursing care of her drug addicted son. In the past I would have tried to reason with her. I almost had to bite my tongue – but I stood strong and quiet and assertive- and let her run out of steam. Then the insults turned to fear and tears – true emotions. This was hard to do for me – but it works."

Table 2.

Discussion

The pre and post TalentSmart® online assessment data that was collected generally supports the researchers' hypothesis that participation in an Equine Guided Leadership Education (EGLE) workshop is effective at developing emotional intelligence competencies in expert nurses. Attempts by the researchers to control intervening variables were made by: 1) Selecting expert nurses with at least five years in their current roles, thereby minimizing possible turnover during the six month research window; 2) Minimizing differences between the control group and intervention group by choosing hospital units that have similar stress levels, work hours, and required expertise; 3) Choosing units within the hospital that were physically separated by a floor so as to limit contact between nurses in the control and intervention groups; 4) Making sure that neither the control nor the intervention participants received any additional leadership or emotional intelligence training (except for the nurses in the treatment group working with the horses) in that six month period, and; 5) Keeping all participants blinded to the results of their assessments until after they completed the post-assessment six months later. Since the data analysis of the pre EQ assessment indicated there was no significant difference between the EQ scores of the control and intervention groups to start with (see Table 1), and because only the treatment group received any leadership development or emotional intelligence training within that six month period, any observed differences between the pre and post EQ scores of the control and intervention groups might be more likely attributed to the intervention with the horses. That said, the small number of participants in both the intervention (n=11) and control (n=10) groups makes it difficult to conclude definitively that the one day workshop with horses is the reason for higher EQ scores for the nurses in the intervention group. The qualitative surveys, which were analyzed for EQ competency themes, also support the researchers' hypothesis and are perhaps more consequential than the TalentSmart® EQ scores. Theming participant responses into the four EQ competency areas allowed the researchers to more accurately pinpoint which EQ competencies were best learned by the nurses during the horse workshop experience (*self-awareness* and *social awareness*, refer to Figure 4). The surveys also identified other important leadership themes including the importance of body language, influencing others and how the nurses applied these new skills and knowledge in the workplace.

The ability to accurately perceive non-verbal signals and body language is closely related to increased emotional intelligence (Cherry, 2013). Recent neurobiological research is showing that there are connections in our brains that are involved with both emotion and the way we behave through the use of facial expressions and body language (Gelder, 2006). According to Salovey & Meyer (1990), non-verbal perception of emotion - the ability to read facial expressions and body language - "insure[s] smoother interpersonal cooperation" (p. 193). This is one reason why the researches included non-verbal/body language as one of the themes when coding the responses of the participants. Another reason for it to be included as a theme is because the emphasis made by the nurses in this study on the importance of non-verbal communication is consistent with EAL findings from previous anecdotal and research studies (Kane, 2007, Notschaele, 2011, Walsh & Blakeney, 2013). Therefore, by leveraging the horse's innate sensibility and awareness of body language as the primary means of communication in the herd, along with their honest and immediate reaction to human emotions and body language, this pilot was able to create a rich learning environment wherein the nurses could better understand and practice their own abilities in this area.

Interestingly the researchers noticed an inverse relationship between the significant increase on the mean change scores for *relationship management* on the EQ assessment of the intervention group (Figure 2.) and the number of times they mentioned it in their survey responses (only 2 times) (Figure 4). This can perhaps be explained by the timing of the first qualitative survey (immediately post workshop) and the

timing of the post EQ assessment (6 months after the workshop). The nurses might not have been able to see how *relationship management* was applicable in the workplace until they were able to get back into the workplace and make the connections.

Another area of interest to the researchers is the notion of learning transfer. "Transfer of learning occurs when learning in one context or with one set of materials impacts on performance in another context or with other related materials" (Perkins, 1992, p.2). The legitimacy of any equine assisted learning modality depends on the successful transfer of learning from the horse arena to a participant's personal and professional life. The quality of the responses by the treatment nurses who filled out the second qualitative survey three months after the workshop (See Table 2) indicate that learning transfer, as it relates to emotional intelligence, did occur for those who did respond to this second survey.

Limitations of the Study

Researchers were unable to validate the second part of this pilot's hypotheses, that EGLE has 'the potential of influencing positive patient outcomes and developing professional nursing teams.' This was due to research costs, time constraints and limits in the ability to collect the following quantitative data from the hospital: patient satisfaction surveys that compare the treatment group nurses with those of the control group; nurse retention reports between the two units; and individual nurse's satisfaction surveys. Without this data the researchers could not effectively measure and compare patient outcomes or team development in either research group. Gathering this type of data in future studies would assist researchers in making the case that collaborating with horses to learn EQ competencies results in both learning transfer, increased organizational effectiveness and return on investment (ROI).

Limitations in using a self-assessment for EQ are always evident in that results can be skewed by one or more individuals answering in ways that are favorable to obtaining an artificially high score, or by catching a nurse on a bad day when he or she are asked to take the assessment. In Kruger and Dunning's (1999) paper titled *Unskilled and Unaware of It: How Difficulties in Recognizing One's Own Incompetence Lead to Inflated Self-Assessments* they "argue that the skills that engender competence in a particular domain are often the very same skills necessary to evaluate competence in that domain—one's own or anyone else's" (p. 1121) and therefore self-evaluations are often misleading. The use of a 360 profile which would include feedback from each nurse's supervisor, peers and those they manage, would give a much more accurate and objective depiction of any changes in behavior over a six month or more time difference. However, the cost of administering this sort of profile, the time it takes to collect the feedback data, as well as the fact that the chances are high of not having the same people contribute to each nurse's feedback profile six months or more after the initial feedback intake, make this option much more difficult to design and conduct a successful research study.

Other limitations of this study included the logistical challenges of scheduling nurses to take the before and after online EQ assessments as well as getting the 11 nurses in the treatment group scheduled off duty for an entire day out at the equestrian facility. The size and scope of this research pilot was also limited by the amount of funding that was received to cover the costs of the assessments, the equestrian facility, as well as the extra equine facilitators and horse handlers.

Conclusions

As a feasibility study, this inter-collegiate collaboration, with its research design, methods used and the participation of the expert nurses, was determined successful. Using the online Emotional Intelligence Appraisal: The Me Edition by TalentSmart®, pre and post workshop, allowed for simple, cost effective,

and confidential comparisons of the two group's EQ scores, and the qualitative surveys revealed more specifically which EQ competencies this type of training intervention actually affected.

However, the small participant numbers in this study makes it difficult to conclude with any statistical accuracy that working with horses to teach emotional intelligence competencies is effective. However, these initial results are encouraging and lay the groundwork for subsequent studies of larger and more diverse populations of expert nurses using a more rigorous longitudinal design.

References:

Benner, P. (1982). Novice to expert. *American Journal of Nursing*, 82(3), 402-407.

Bradberry, J., Greaves, T. (2009). Emotional Intelligence Appraisal™ Technical Manual. Retrieved March, 12th, 2013, http://www.talentsmart.com/products/.

Caris-Verhallen, W. M.C.M., Kerkstra, A. and Bensing, J. M. (1999), Non-verbal behaviour in nurse–elderly patient communication. Journal of Advanced Nursing, 29: 808–818. doi: 10.1046/j.1365-2648.1999.00965.x

Cherry, K. (2013). What is emotional intelligence? Definitions, history, and measures of emotional intelligence. *About.com Psychology*. Retrieved on May,7, 2013 from http://psychology.about.com/od/personalitydevelopment/a/emotionalintell.htm

Codier, E., Kamihawa, C., Kooker, B., Shoultz, J. (2009). Emotional intelligence, performance, and retention in clinical staff nurses. *Nursing Administration Quarterly*, 33(4), 310-316.

Dracup, K., Bryan-Brown, C. (2004). From novice to expert to mentor: Shaping the future. *American Journal of Critical Care*, 13, 448-450.

Equine Experiential Association (2009). *Facilitating E3Corporate Training*, p. 66-67

Esbjorn, R. (2006).When horses heal: A qualitative inquiry into Equine Facilitated Psychotherapy. *Dissertation-Abstracts-International*:*Section-B.- The-Sciences-and-Engineering*. 67(4-B), 2222.

Freshwater, D, ed. (2002). *Therapeutic Nursing: Improving patient care through self-awareness and reflection*. London: Sage Publishing.

Freshwater. D., Stickley, T. (2004). The heart of the art: emotional intelligence in nurse education, *Nursing Inquiry*, 11(2), 91-98.

Gabriels, R., Agnew, J., Holt, K., Shoffner, A., Zhaoxing, P., Ruzzano, S., Clayton, G., Mesibov, G. (2012). Pilot study measuring the effects of therapeutic horseback riding on school-age children and adolescents with autism spectrum disorders. *Research in Autism Spectrum Disorders* , 6(2), 578–588.

Gelder, B. (2006). Towards the neurobiology of emotional body language. *Nature Reviews Neuroscience*, 7, 242-249. doi:10.1038/nrn1872

Goleman, D. Boyatzis, R., McKee, A. (2002). *Primal leadership: Learning to lead with emotional intelligence.* Boston, MA.: Harvard Business School Press.

Institute of Medicine. (2011). *The Future of Nursing: Leading Change, Advancing Health.* Washington DC: National Academy Press.

The International Leadership Association (forthcoming 2013). The Embodiment of Leadership: A Volume in the ILA Building Leadership Bridges Series

Kane, B. (2007). *The manual of medicine and horsemanship: Transforming the doctor-patient relationship with equine-assisted learning*. Bloomington, In.: AuthorHouse.

Kruger, J., Dunning, D. (1999). Unskilled and Unaware of It: How Difficulties in Recognizing One's Own Incompetence Lead to Inflated Self-Assessments. *Journal of Personality and Social Psychology*, 77(6), 1121-1134.

Munro, J. (2011). Nurse manager emotional intelligence as predictor to registered nurse job satisfaction and RN perceptions of the practice environment and the relationship to patient, nursing and hospital outcomes. *University of Southern Florida Graduate School Theses and Dissertations*. Retrieved September 14th, 2011 from http://scholarcommons.usf.edu/etd/3259

Nirdrine, M., Owen-Smith, P., Faulkner, P. (2002). Equine facilitated psychotherapy: Applications for therapeutic validity. *Issues in Mental Health Nursing*, 23(6), 587-603.

Notschaele, I. (2011). *Increasing consciousness of non-verbal communication with Equine-Assisted Leadership Training (EALT): An exploratory study*. Unpublished thesis, University of Twente, Holland.

Perkins, D., Salomon, G. (1992). Transfer of Learning. *International Encyclopedia of Education, Second Edition*, Oxford, England: Pergamon Press

Salovey, P., Mayer, J. (1990). Emotional Intelligence. *Imagination, Cognition and Personality*, 9, 185-211.

Schultz,P., Remick-Barlow,A., Robbins,L. (2007) Equine-assisted psychotherapy: A mental health promotion/intervention modality for children who have experienced intra-family violence. *Health and Social Care in the Community*. 15(3), 265-271.

Shurtleff, T, Standeven, J., Engsberg, J. (2009). Changes in dynamic trunk/head stability and functional reach after hippotherapy. *Archives of Physical Medicine and Rehabilitation***,** 90 (7), 1185-1195.

Silkwood-Sherer, D., Warmbier, H. (2007). Effects of hippotherapy on postural stability, in persons with multiple sclerosis: a pilot study. *Journal of Neurologic Physical Therapy*, 31(2), 77-84

Sterba., J. (2007). Does horseback riding therapy or therapist-directed hippotherapy rehabilitate children with cerebral palsy? *Developmental Medicine & Child Neurology*, 49(1), 68-73.

Strozzi-Heckler, R. (2003). *Being human at work: bringing somatic intelligence into your professional life*. Berkeley, CA : North Atlantic Books.

The American Organization of Nurse Executives. *2011-2013 Strategic Plan.* Retrieved October 28, 2011. www.aone.org/membership/about/docs/Final.20112013AONEStratPlan.doc

Torbert, W. R. (1972). *Learning from experience: towards consciousness.* New York: Columbia University Press.

Torbert, B. (2004). *Action Inquiry: the secret of timely and transforming leadership*. San Francisco: Berrett-Koehler Publishers, Inc.

Vitello-Cicciu, J. (2002). Exploring Emotional Intelligence: Implications for Nursing Leaders. *Journal of Nursing Administration*. 32(4), 203-210.

Walsh, K., Blakeney, B. (2013). Nurse presence enhanced through equus. *Journal of Holistic Nursing*, Retrieved Jan. 28th 2013, www.jhn.sagepub.com/content/early/2013/01/22/0898010112474721