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The Helping Horse: How Equine Assisted Learning Contributes to the Wellbeing of First Nations Youth in Treatment for Volatile Substance Misuse

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Abstract

There has been recent interest in Canada exploring the benefits of equine assisted interventions in the treatment of First Nations youth who misuse volatile substances. Using the richness of an exploratory case study involving the White Buffalo Youth Inhalant Treatment Centre and the Cartier Equine Learning Center, our community-based study examined the question of how an Equine Assisted Learning (EAL) program contributes to the wellbeing of First Nations female youth who misuse volatile substances. Both programs are grounded in a holistic bio-psycho-social-spiritual framework of healing. Our study shares how the EAL horses, facilitators and program content contributed to youths' wellbeing in each area of the healing framework (bio-psycho-social-spiritual), with emphasis on the cultural significance of the horse and its helping role. The horse is a helper in the girls' journeys toward improved wellbeing—the horse helps through its very nature as a highly instinctive animal, it helps the facilitators do their jobs, and it also helps put the treatment program activities into practice. In addition, the role of First Nations culture in the girls' lives was enhanced through their encounters with the horses. The findings

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support the limited literature on equine assisted interventions and add important insights to the youth addictions treatment literature. Key implications to consider for EAL and volatile substance misuse policy, practice and research are identified.

A dearth of scholarship exists that examines the relationship between humans and horses, and how these bonds may contribute to human wellbeing (Chalmers, 2014). Horses have also received relatively limited scholarly attention in the literature, despite increased interest in incorporating them into human health and welfare services (Bachi, 2013a). Animal assisted intervention studies have mainly focused on understanding small companion animals within the context of therapy and therapeutic relationships between animals and humans (Nimer & Lundahl, 2007). The horse has unique characteristics that are related to its cultural role in some Indigenous populations (Dell, Chalmers, Dell, Sauve, & MacKinnon, 2008; Lawrence, 1983, 1998) and also its status as a flight animal, which enables it to respond instinctively to human behaviour and intent through its heightened sensitivity to its surrounding environment (Feh, 2005; Goodwin, 2002; McDonnell, 2003). As such, human interactions with horses can be a distinct avenue for exploring social relationships and human wellbeing (Gonzalez & Sutton, 2011; Kersten & Thomas, 1997). This paper shares the key findings of our study, which asked how an Equine Assisted Learning (EAL) program contributes to the wellbeing of First Nations youth who misuse volatile substances. We found that the horse is a helper in the youths' journeys toward improved wellbeing—the horse helps through its very nature as a highly instinctive animal, it helps the facilitators do their jobs, and it also helps put the treatment program activities into practice. In addition, the role of First Nations culture in the girls' lives was enhanced through their encounters with the horses.

Equine Assisted Learning

In the past decade, equines have been included in a range of therapeutic human service contexts, including counselling and learning programs within corrections (Bachi, 2013a; Deaton, 2005), mental health facilities (Bizub, Joy, & Davidson, 2003), social services (Burgon, 2003), women's and youth addiction treatment (Pollack, 2009) and with high-risk youth and veterans who have experienced emotional and behavioural trauma (Basile, 1997; Burgon, 2011; Duncan, Critchley, & Marland, 2013; Foley, 2007; Jarrell, 2009; Carlsson, Ranta, & Traeen, 2014; Schultz, 2005). Much of the research focuses on therapeutic riding programs with hybrids that include both riding and non-riding activities. These approaches are mainly informed by outcomes and theories from the broader human-animal bond knowledge base (Kruger & Serpell, 2006) and descriptive literature (Brooks, 2006; Chardonnens, 2009; Frewin & Gardiner, 2005; Kakacek & Otten, 2008).

Equine Assisted Learning (EAL), a non-riding program, is a relatively new field within the area of equine assisted interventions and draws primarily on the tenets of experiential or 'hands-on' learning. While resonating with some of the core values (MacKinnon, 2007) found within other equine guided interventions (e.g., equine assisted psychotherapy, therapeutic riding), in general EAL is an educational program that is facilitated within a group format and focuses on ground activities. In EAL participants engage in structured,

facilitator-led sessions with constant feedback related to the participants' experiences. The horse is generally considered the teacher and a human facilitator is there to help guide the participants on a journey of learning and understanding. The group sessions provide opportunities for participants to become engaged in situations that require interaction with the horse and group members, and to reflect on these experiences. The overall intent is to create opportunities for participant self-development and to internalize this awareness within the sessions and generalize it to other life situations (Equine Assisted Growth and Learning Association, 2010).

Volatile Substance Misuse

Research indicates that volatile substances are often the first mood-altering substance used by children and youth because they are readily available, inexpensive and easily concealed (Dell, Gust, & MacLean, 2011a). Volatile substances are a large and diverse group of chemical compounds located in hundreds of households and industrial products, including paint thinner, glue, gasoline and correctional fluid (Dell & Beauchamp, 2006). Volatile substance misuse (VSM) is the deliberate inhalation of fumes or vapours given off from a substance for its intoxicating and mind altering effect (National Drug Abuse Information Centre, 1998). The health effects of inhaling can be acute, and include frostbite and burns (Albright, Lebovitz, Lipson, & Luft, 1999), brain and nerve cell damage (Basu, Jhirwal, Singh, Kumar, & Mattoo, 2004) and sudden heart failure (Ballard, 1998). The social effects are equally destructive and include poor academic performance (Basu et al., 2004), spiritual harm (Honouring Our Strengths: Indigenous Culture as Intervention in Addictions Treatment, 2014), and problem behaviour, such as delinquency (Best et al., 2004).

Epidemiological and other international research indicates that there are higher rates of VSM among youth experiencing disenfranchised life conditions (Dell et al., 2011b). This has been documented among street youth, inner city youth, and some First Nations and Inuit youth living in select rural and remote areas of Canada (Bone, Dell, Koskie, Kushniruk, & Shorting, 2011). VSM has been linked to high rates of poverty, boredom, loss of self-respect, unemployment, family breakdown and poor social and economic structures (Dell et al., 2003). In Canada, these conditions are connected to the historic impact of the colonization of First Nations people, systemic racism and discrimination, residential schooling and multi-generational losses of land, language and culture. Canada's First Nations people comprise approximately 2.6 percent of the country's population (Métis 1.4 percent & Inuit 0.2 percent) (Statistics Canada, 2011).

Since a widely-played media clip in 1993 of Innu youth in Davis Inlet, Labrador getting high by sniffing gasoline, there has been on-going interest in effective ways to treat this health issue. In 1996, a major response to VSM was undertaken on the part of First Nations people and Health Canada's First Nations and Inuit Health Branch; eight residential youth solvent treatment centres were established. Canada is now considered an international leader in providing residential treatment to First Nations youth who misuse volatile substances (Dell, Hopkins, & Dell, 2005).

The Canadian Experience

The White Buffalo Youth Inhalant Treatment Centre (White Buffalo) is one of the established VSM centres. It is a six-month residential program for female, First Nations adolescents who misuse volatile substances. It is located on the Sturgeon Lake First Nation, near Price Albert, Saskatchewan. The program is based on the concept of living therapy, which integrates four corner-stones of treatment that parallel teachings of the First Nations' medicine wheel—spiritual, emotional, mental, and physical. The majority of youth who enter the program have extensive histories of multiple forms of abuse (Youth Solvent Addiction Committee, 2008). A foundational concept of the White Buffalo program is nurturing the inner spirit, which is practiced through traditional First Nations teachings and holistic healing (e.g., fasting, prayer). Alongside this, through structured programming, White Buffalo attempts to realign the youths' association with and reliance on their greater community. With belief that EAL compliments its approach, White Buffalo expanded its treatment to include the Cartier Equine Learning Center EAL program in the past decade.

Located north of Prince Albert, Saskatchewan, the Cartier Equine Learning Center has been a leader in establishing industry standards in the area of EAL certification and program development in Canada (Saskatchewan Horse Federation). This program offers its participants a structured curriculum that incorporates a variety of 'building block' lessons and learning opportunities. The program is a learner-centred educational experience with horses that focuses on the animal's non-verbal communication as a teaching modality for cognitive and behavioural change. A fundamental guiding philosophy of the program is understanding that "[b]y their intuitive nature and innate sensitivity, horses can provide facilitators with a window into the participant's personality creating opportunities for immediate outcomes and feedback" (MacKinnon, 2007, p.4). The Center has developed an 'EAL Formula' that is considerably different from other equine guided programs, and is designed to produce consistent, desired and predictable outcomes when all six components of its formula are present. The components are: relationship, curriculum, formula (experiential learning focus), horse, facilitation and partnerships. Each exercise is custom designed to maximize progressive learning potential and focuses on developing individual skills as participants work through interactive challenges.[1]

Our current study is informed by three peer-reviewed articles in which various members of our team examined EAL in the treatment of VSM among First Nations youth for the first time in Canada. The first, a 2008 article titled 'Horse as Healer: An Examination of Equine Assisted Learning in the Healing of First Nations Youth from Solvent Abuse' assessed the theoretical intersections between the White Buffalo and Cartier programs (Dell, Chalmers, Dell, Sauve, & MacKinnon, 2008). This work illustrated that the culture-based model of resiliency underlying White Buffalo's program, which accounts for an individual's inner spirit and relations with their collective community, is complementary to Cartier's EAL program. Both support a holistic bio-psycho-social-spiritual framework of healing. This understanding contributed to a 2011 study that examined the benefit of EAL to First Nations youths' healing from VSM at the Nimkee NupiGawagan Healing Centre in Muncey, Ontario

[1]The program is now offered in Alberta.

(Dell et al., 2011). Similar to White Buffalo, this VSM program adheres to a culture-based model of resiliency. The resulting publication, titled 'Creating Healing Spaces: The Experiences of First Nations and Inuit Youth with Equine-Assisted Learning' found that the youths' healing was aided through the availability of a culturally-relevant space, comprised of spiritual exchange (i.e., between the youth, horses and sometimes EAL facilitators), complementary communication (i.e., relaying upon intuition with the horses and sometimes transferring this to humans) and authentic occurrence (i.e., overcoming barriers to understanding imposed by Western ways of knowing).

Extending this work, the third publication was released in 2011 and is a scoping review of 13 EAL studies (Chalmers & Dell, 2011). It concluded that western epistemologies or ways of knowing guided the limited existing research through post-positivism (which suggests that a shifting truth can be located outwardly) and constructivism (which claims that knowledge is co-created by those experiencing it) and to the exclusion of Aboriginal epistemology (which asserts that knowledge is ever-present and internal to the self and external in relation to others). Knowledge in this sense is understood to be a way of life and is grounded in a history of cultural practices and traditional understanding. Recognizing this, the western-derived participatory paradigm was identified as a potential bridge to guide future EAL research, and specifically with First Nations. As a method for constructing knowledge, the participatory paradigm is emancipatory in its focus on bringing about change through action, initiated by community identification, direction and owning of the research process (Davis & Reid, 1999).

Taking this cumulative understanding into account, the overarching question originally set out for the current study was if and how the Cartier Equine Learning Center EAL program contributed to the wellbeing of First Nations youth who misuse solvents. With congruence already established between the bio-psycho-social-spiritual framework of healing applied by the White Buffalo Youth Inhalant Treatment Centre and Cartier's program, it was determined that in theory the EAL program does contribute to youths' wellbeing. The validity of the cultural foundation of the White Buffalo program was not questioned; to do so would be a colonizing act. Specifically examined in this paper then is the remaining question of – *how do youth experience wellbeing based on their participation in the EAL program?*

The Present Study

A community-based research approach was adopted in this study for several reasons. Foremost, it emphasizes relationship building throughout the research process with all stakeholders to ensure the study is relevant to each (Martial, Macaulay, & Freeman, 2003; Scott, 1992; Smith, 1999). This focus supports the prioritization of First Nations knowledge in the research (Smith, 1999) and self-determination by ensuring jurisdiction over the data at all times and directing the research to serve First Nations interests (Schnarch, 2004). This is imperative given the history of research with Indigenous communities is fraught with disrespect and the appropriation of power, which is reflective of the history of colonization of First Nations people in Canada (Smith, 1999). As a method for constructing knowledge, this approach also parallels principles found within the participatory paradigm.

The make-up of our community-based team facilitated our approach to the research such that it was “by, for and in balance with” the research population and not “on” it (Kirby, Greaves, & Reid, 2006, p. 32). Our study is a collaborative effort of front line workers, community leaders, Elders, researchers, decision makers, the White Buffalo Youth Inhalant Treatment Centre, the Cartier Equine Learning Center, the Youth Solvent Addiction Committee (YSAC), the National Native Addictions Partnership Foundation (NNAPF), the Canadian Centre on Substance Abuse (CCSA), and researchers at the Universities of Calgary, Saskatchewan and Regina. YSAC provides theoretical direction to Canada’s solvent abuse treatment centres based upon a culture-based model of resiliency, NNAPF guides the First Nations and Inuit Addictions System in Canada towards holistic, culturally-relevant and seamless community-driven addiction services, and CCSA is Canada’s nongovernmental addictions agency. Our team’s research practices are in adherence with the Tri-Council Policy Statement on research involving the First Nations, Inuit and Métis people of Canada (Canadian Institutes of Health Research, Natural Sciences and Engineering Research Council of Canada, and Social Sciences and Humanities Research Council of Canada, 2010). Consent was received from all participants, including parents/guardians for the youth, as part of the information package when they entered the White Buffalo treatment facility; everyone was offered the opportunity to decline participation with no repercussions. Ethics approval for the study was granted by the Universities of Saskatchewan, Calgary and Regina Behavioural and Animal Research Ethics Boards.

With this study situated in a holistic bio-psycho-social-spiritual framework of healing, as applied by White Buffalo and compatible with Cartier’s EAL program, the beginning point for understanding wellbeing was this framework alongside the peer-reviewed literature (including our team’s studies referenced above and where possible the equine-specific literature), and the experiential and cultural expertise of our diverse team members. Taking this all into account, it was established that *biological* healing refers generally to physical health and the physiological requirements to have a healthy body. This can include, for example, food, water, fresh air, exercise and connection to and respect for the land. In this study we focused on three measures of biological healing, defined as physical wellbeing and identified through (a) physical status, (b) importance of physical touch with the horse, and (c) acknowledging the role of the land in healthy being. *Psychological* healing refers generally to mental status. This can include mood/feelings, cognition, perception, thoughts, self, intellect, emotion, judgment and identity. In this study we applied the most common understanding of psychological healing located in the equine literature, characterized it more inclusively as mental wellbeing and identified it through (a) perceptions of self. *Social* healing generally refers to an individual’s relationships or associations with friends, family, community and the universe. We focused on social healing for First Nations in this study, defining it as community involvement and relations with others, and it was identified through (a) quantity and quality of interactions with fellow participants and staff in the residential treatment program and family members. And last, *spiritual* healing refers to an individual’s inner system of beliefs (e.g., purpose, meaning, value, higher power) and their essence, being or inner spirit. We focused on two measures of spiritual healing, defined as development of an equine-human relationship (trust) and spiritual bond, and it was identified

through (a) development of respect and trust with horses, (b) spiritual bond to horses, and (c) increased spiritual functioning (see Figure 1).

Key to this understanding of wellbeing is that the health of an individual is comprised of their subjective and relational interactions within four inter-related quadrants: biological, psychological, social and spiritual. This coincides with First Nations knowledge and understandings of health that focuses on a balance of mental, physical, social and spiritual wellbeing (Youth Solvent Addiction Committee, 2008). To illustrate, the work of Laframboise and Shernina (2008) supports that "[w]ithin First Nations culture the Medicine Wheel reflects these same principles of holistic healing. These teachings are among the oldest teachings of First Nations people. The teachings found on the Medicine Wheel create a bio-psychosocial and spiritual foundation for human behaviour and interaction" (2008). Applying a holistic framework of wellness to this exploratory study is necessary because the field "currently lacks a unified, widely accepted, or empirically supported theoretical framework for explaining how and why relationships between humans and animals are potentially therapeutic" (Kruger & Serpell, 2006, pp. 25–26). This understanding frames how we collected and analyzed our data in the study.

Case Study

Considering the exploratory nature of this study, our team chose a case study design. The case study in this project is not an individual but rather the Cartier EAL program. This expanded approach to conventional case study research is used to explore topics in their context using detailed and in-depth data gathered through multiple sources (Baxter & Jack, 2008). This design is particularly useful when questions pertaining to 'how' and 'why' are explored; when a detailed account of the context is needed to fully comprehend the topic; when the stories of the research participants are crucial to attaining understanding; and when a collaborative approach to the research process and knowledge building is essential (Creswell, 2013). As shared by Hodkinson and Hodkinson (2001), key strengths of a case study design are that they are useful for understanding complex inter-relationships (e.g., between White Buffalo and Cartier), are grounded in lived reality (e.g., youths' experiences with EAL), facilitate exploration of the unusual and unexpected (e.g., undertaking an exploratory study with a limited empirical base), use multiple cases that facilitates focus on the ideosynchratic (that is, accounting for different experiences as well as similar), and can facilitate rich conceptual and theoretical development (Hodkinson & Hodkinson, 2001). And possibly most important, the openness of a case study allowed our team to adapt the design to account for our research approach –applying community-based research principles that facilitate the prioritizing of First Nations knowledge. Holistic sharing of dynamic and complex knowledge in this study reflects a First Nations culture-based storytelling approach to knowing.

Our case study is designed to be both intrinsic and instrumental. In general, an instrumental case study is undertaken when an understanding of a particular issue is of interest and an intrinsic case study explores cases where description and detail are required for a full understanding of the topic area and how the case is unique (Stake, 1995). Our study is instrumental in that it focuses on understanding how participation in an EAL program

contributes to the wellbeing of First Nations youth in treatment for misusing volatile substances. It is also intrinsic because gaining such insight requires an in-depth understanding of the EAL program itself; that is, it accounts for the context within which the phenomenon of youth wellbeing occurs.

A single case, the Cartier EAL program, was identified for this study based on several factors. First, the Cartier program, or case, has an established curriculum and is nationally recognized for offering EAL training certification and is distinct in this way from other EAL programs. Second, the program has provided EAL to youth in treatment for VSM over the past 6 years, and as such has an established relationship with White Buffalo. As a result, purposeful sampling was used to access a group of 'information rich' participants based on the commonality of their experiences with EAL and VSM. Third, with the instrumental focus of our case study, we looked exclusively at Cartier's EAL program within a specified time period (each cohort of youth attended the EAL program for 20 weeks) and within a specified population (First Nations, female youth, 12–18 years of age). Last, the EAL and VSM programs are in close geographic proximity to each other and the majority of the researchers' institutions. It was important for our team to be clear from the study outset about the case sample and design. Establishing boundaries around the individual unit of study was necessary as this delineated the case (Cartier EAL program) and the case context (the horse, the facilitators, the program activities and First Nations' youth in treatment for volatile solvent misuse), even though "phenomenon and context are not always distinguishable" (Yin, 2003, pp. 13). In keeping with the case study design, this step provided clarity and direction to our data collection strategies and analysis.

Data collection

The contextual units of analysis within the case in the study included the horse, the facilitators, the program content and wellbeing. Data were gathered from multiple and diverse sources, including interviews with the youth to gain a detailed account of their general perceptions, experiences and understanding of the four identified components of healing; youth participant journaling about experiences each week on the day following the EAL program and during classroom time for approximately 20 minutes; interviews with the Cartier EAL program facilitators to gain a detailed account of their understandings; Cartier EAL program facilitator field notes on participants in the Cartier program areas of curriculum, objectives, and intended outcomes and responses; interviews with White Buffalo staff to gain a detailed account of their insights and observations on the youths' encounters with the EAL program; and White Buffalo staff recordings in participant files to document observations of youths' attitudes and behaviors.

Data were collected from four White Buffalo six-month treatment cohorts, starting in June 2010 through to June 2012. A total of 66 girls participated in the study, with 26 completing it (39%). All youth who discontinued their participation in the study left the White Buffalo program for varying reasons, and at times new youth attended part-way through an established cohort. The youth participated in the Cartier EAL program a maximum of two times a week for two hours and for 20 weeks total. A number of differences were experienced within and between the youth cohorts that posed challenges for the data

collection, with the most limiting being drop-out. The average age of the girls was 15. In addition to speaking English a quarter spoke their native language (Cree, followed by Dene, Saulteaux, and Innu), and the majority were from Saskatchewan, followed by the provinces of Manitoba, Labrador, Ontario and Alberta.

Collecting data over time allowed our team to start off by gaining an in-depth and isolated picture of the EAL program from the first cohort and apply what was learned to the remainder of the data collection. It allowed us to collect descriptive and insightful information on contextual factors and research process issues that were not anticipated by our team at the start of the study. For example, it was quickly learned that involving community-based researchers from both White Buffalo and Cartier in the pre-interviews with the girls was helpful to establish rapport with them. We revised and honed our data collection techniques based on such experiences. This was consistent with a case study approach, where necessary data collection processes are revised while the data is collected. It is also important to note that the multi-month span of time between the measures (e.g., pre-post interviews) helped us to avoid a testing effect.

Data analysis

In case study research “the analysis is rich in the context of the case or setting in which the case presents itself” (Merriam, 1998, pp. 41). Through our data analysis processes we detailed aspects of the history of the case, the chronology of events, and day-by-day rendering of the activities of the case (Stake, 1995). Following this description, we focused on key issues for understanding the complexity of the case (Creswell, 2013). We used categorical aggregation as proposed by Stake (1995). We examined a collection of instances from the data that revealed issue-relevant meanings. We used a process of data reduction, that is, we identified themes and we cross-compared them between cohorts (Yin, 2003). We arrived at a meaning for the case in terms of the EAL program in its totality and its contributions to the wellbeing of First Nations youth in treatment for VSM. Practically, this resulted in the identification of key themes in answer to our research question. The participatory paradigm that framed our approach to the study and was especially paramount to the data analysis.

To arrive at the results, our team followed an integrated data analysis process. We developed our initial coding tree based on the work of others and our own understandings, most prominently informed by the holistic bio-psycho-social-spiritual framework of healing applied by White Buffalo. We began with our Indigenous understanding of wellbeing (deductive) and then added detail to it based on our data analysis (inductive) of the first cohort, both verifying and generating themes and explanations for each of the four components of wellbeing. Interview transcripts, observer recordings, White Buffalo staff reflections, and Cartier EAL session debriefing notes were analyzed and searched for patterns and possible new codes. As Stake (1995) articulates, analysis tends to translate to “a search for patterns, for consistency, for consistency with certain conditions, which we call correspondence” (Stake, 1995, pp. 78). Our community-based researchers from White Buffalo and the Cartier EAL program were the leads on this work. A refined coding tree emerged from our team’s analysis of the first cohort’s data (see Table 1).

We thereafter applied a simultaneous deductive and inductive approach to theme identification. It was an iterative process. The White Buffalo and Cartier researchers and the larger research group continually revisited the coding tree. As such, all perspectives and insights were shared, discussed and agreements arrived at. This process helped to not only trim and refine our themes but also served three key functions. First, by returning to the team members vis-à-vis research participants member-checking occurred. Second, the process ensured attention to inter-rater reliability as several of the team members were involved in both the data collection and analyses. And finally, these steps contributed to the overall validity of our findings.

Although all themes were identified to a notable extent in the multiple data sources collected, and are therefore considered findings, our team also undertook a process in which each theme was identified for saturation, and demarcated as low, medium or high. The two community-based researchers undertook this categorization based on their in-depth experiences of coding the data sources and as a validation check an independent researcher on our team did the same with a careful review of the coded data. Whenever there was disagreement, a discussion was held between the three individuals and a decision arrived at. This was necessary for three themes – touch (decided upon high), nurturing (decided upon low) and spiritual functioning (decided upon low).

Drawing on all of our data sources, a comprehensive file was created for each youth and a narrative written. Although the findings in this paper only focus on the identified themes and the illustrative words of the youth, the original analysis is situated within the youths' complete narratives. The detailed and time intensive process of creating files for the youth resulted in 21 individual files; a file was not developed if only limited data was available for a youth (e.g., youth left the program early).

Results

The EAL Program's Contribution to Youths' Wellbeing

As shared, this study is framed within the holistic bio-psycho-social-spiritual framework of healing applied by the White Buffalo Youth Inhalant Treatment Centre. The combined experiences, observations, reflections and analyses in the study led to the finding that the Cartier EAL program contributes to the wellbeing of the First Nations youth in the White Buffalo Youth Inhalant Treatment Program in several ways. The research question asked was: how does an Equine Assisted Learning (EAL) program contribute to the wellbeing of First Nations female youth who misuse volatile substances? The horse is a helper in the girls' journeys toward improved wellbeing—the horse helps through its very nature as a highly instinctive animal, it helps the facilitators do their jobs, and it also helps put the treatment program activities into practice. In addition, the role of First Nations culture in the girls' lives was enhanced through their encounters with the horses.

Table 2 outlines 28 themes in the four areas of wellbeing, plus the addition of the category termed culture as an area of wellbeing. Thirteen of the themes originated from pre-existing work (refer back to Table 1) and were all supported in this study and the remaining 15 were newly identified in this study. Findings within each of the five areas of wellbeing are

discussed in order of greatest significance or most saturation. The addition of the culture category was in response to the youth speaking specifically to the relationship between culture, the horse and their wellbeing. This should not be a surprise given that the horse is a prominent animal in the culture of many First Nations. It was concluded that the horse has a helping role in facilitating youth wellbeing most prominently through the sharing of cultural knowledge. One participant commented that "Knowing that those horses are part of my culture made me realize that I can believe in a Creator" (Cohort 2, Youth 3). Another shared: "it [the horse program] taught me to stay with my family and learning about culture that I will take back home" (Cohort 2, Youth 10). The girls also spoke about becoming familiar with the power of the female spirit of First Nations through the horses. For example, they learned about the cultural teaching that they should not be near the horses when menstruating. One girl shared "[T]hey say you aren't supposed to go on your time, so respect yourself" (Cohort 2, Youth 7).

The most significant finding regarding biological or physical wellbeing is experiencing healthy or safe touch (i.e., brushing the body, braiding the mane, petting the horse, hugging the horse, standing close to allow for body contact). For example, one youth commented "whenever he would do something that is right he would put his head on my chest and wait for me to hug him" (Cohort 2, Youth 3) and another shared "the horses know they feel appreciated when you do that [brushing] and tell them they did a good job and petting them they will know" (Cohort 3, Youth 4). Another youth commented "certain horse I liked brushing [because] I felt calm" (Cohort 3, Youth 11). This finding was followed by improved physical health, that is, taking part in other physical activities because of EAL participation. The youth offered: "it made me feel more active" (Cohort 1, Youth 13) and "I can actually run around now" (Cohort 2, Youth 10). Third, the youth shared that they learned about anatomy/how the body works for horses and by extension humans and their own bodies. The youth shared: "I learned that a horse's heart beats way faster than a human and they can like run really fast and that they are really strong and they can carry babies and all that" (Cohort 3, Youth 4) and "yeah, when a horse is mad their ears pin back, their eyes go big, their muscles tighten up and their tails start swishing. It's pretty interesting. I never knew that" (Cohort 3, Youth 2). And last, and as the least saturated category, the youth shared that they connected with the EAL setting by being at the farm and in nature. One youth shared: "when you go in the door and you are in there [the arena] it smells like a million bucks" (Cohort 1, Youth 5). And another said "I just like it over there because there are horses over there" (Cohort 1, Youth 11) and another simply commented "peaceful" (Cohort 3, Youth 11).

There were five prominent findings attributed to psychological (mental/emotional) wellbeing. One of the most significant findings was that the horse helped the youth to learn about their identity. For instance, one youth mentioned "I can actually show my real me when I am at the horse program. It [horse program] made me think smartly, helped me with courage and stuff like that" (Cohort 2, Youth 10). Another meaningful finding illustrated how the horse increased the youths' sense of self-esteem and self-worth. One youth stated "yeah, the teacher once said the horses know how you feel. This one girl they had a few intakes ago was feeling angry and not good, and she was at Cartier and the horse wouldn't listen to her because he knew how she felt, and she started crying and that horse hugged her.

So when I go to Cartier's I feel good about myself so the horses can feel good" (Cohort 1, Youth 3). Another shared: "I found out that I am not, I don't know how to put it, mean sometimes, I am actually really nice" (Cohort 2, Youth 3). The youth also reported to develop a greater sense of self-awareness about their feelings and moods. For example, one youth stated "at the horse program I learned that I was actually happy inside and I didn't know that before" (Cohort 2, Youth 10). Moreover, the youth increased their ability to problem solve: "I found that I didn't really have good boundaries with some people. I will use this at home with my friends and my family" (Cohort 2, Youth 3). Another youth reflected: "if I see someone doing a bad thing I know they will get mad at me for doing the right thing but that is the way I was taught, to do the right thing and tell the truth, not living in lies" (Cohort 3, Youth 2). The youth also established a more positive attitude. For instance, one youth said "the horse program helped me feel good cause it made me, when I am depressed it makes me happy" (Cohort 2, Youth 7).

In addition, though to a less extent, the youth experienced psychological healing through increased participation and effort on their part. One youth expressed "I didn't really respect anyone, then I got with the horses and I needed to respect them or they would kick me, and then I came back here [treatment centre] and started to respect the others" (Cohort 1, Youth 12). Another youth shared: "well, we were practicing walking and he [the horse] would walk in front of me and I would say whoa and I would have to back him up and put boundaries in place for him. It was a long process" (Cohort 3, Youth 2). The least saturated finding was experiencing or witnessing nurturing. One youth described the experience of observing a pregnant mare and her foal as "exciting, we saw a pregnant horse and then later on saw the baby horse" (Cohort 1, Youth 3).

There were five key findings specific to social wellbeing. First, and most prominent, relationships were developed specifically with the horse facilitators. Some youth expressed their relationships with the facilitators as: "I like them talking to me" (Cohort 2, Youth 6), "I feel awesome around them" (Cohort 2, Youth 7) and "they are like my parents" (Cohort 2, Youth 9). Another prominent finding was a greater sense of communication, for instance understanding of space, body language and dialogue. One youth described her ability to communicate with horses "yeah, they are like humans (the horse), they know when you are feeling scared and they know when you are feeling open with them" (Cohort 3, Youth 10). Not only did the youth get along with the facilitators, they also reported developing communication skills with each other. For example, two different youth shared the sentiment that "when I first got here I didn't know those girls and then I got paired up with other girls and got to know them and the horses" (Cohort 1, Youth 12) and "when I first met [name of youth], we were partnered up and I taught her some things and we were relationship building and from there we started talking" (Cohort 3, Youth 2). Another social wellbeing aspect identified in the study was the importance of a new experience. The youth had a chance to try new roles and participate in a new activity. For instance, one youth said "something [work with the horses] I wouldn't do at home [it] was something new" (Cohort 1, Youth 3). Another youth shared: "I felt, I really didn't want to go to it at first. I just felt, I don't know. Now there is this horse Maverick, and when you take the halter off him and the lead rope he just follows me everywhere" (Cohort 3, Youth 11). Finally, there was a positive change in behavior, for instance, an increased awareness of self, others and one's own learning. One

youth was able to describe her experience with boundaries as “like a horse has boundaries, where they want a person to be. The distance and their reaction when you cross those boundaries, so I look for those things in people too. Where their boundaries are” (Cohort 1, Youth 3).

Although to a less extent, the youth were also able to improve their social wellbeing with increased acknowledgement of the importance of friends and family in their lives. For example, the youth developed an increased awareness of the importance of what it means to have a friend. One individual spoke about friendship as “someone who is just there for you” (Cohort 1, Youth 3). Expanding this understanding to family, another youth commented “I will respect my mom more after participating in this treatment” (Cohort 1, Youth 12) and another shared “I need to show them [family] more respect” (Cohort 2, Youth 3). In addition, youth participants began to think differently about what their home community means to them. In other words, they acknowledged the importance of community. One youth said “hmm, it got me to think about like all the, when I took a look at the horses and my friends here, everybody was like stressed out when they came and then now they are just bonding and just all stressed out again and I am scared to go back too [to home community]” (Cohort 1, Youth 5). Youth also worked on being a better team player. One youth shared, “when I first got here [another youth] started talking to me, then she stopped talking to me and I stopped talking to her, and then she was my teammate at the Cartier Farm, and then we had to talk” (Cohort 1, Youth 11). Another youth shared: “yeah, when you support each other, for example, say if one of us got on each other’s bad side then we had to be partnered up, we had to put our differences aside and work together” (Cohort 3, Youth 2). Finally, the youth stated that they started to become better leaders by being a positive influence, as one example. One youth mentioned that “I learned a lot about the horse, and you know how you say to be a role model here? And then we did an exercise how to be a leader, well I gained confidence there” (Cohort 3, Youth 2).

Focussing on spiritual wellbeing, the youth identified the importance of just being and spending time with the horse. An illustration of this is in one youth’s statement that “the best part of the program was getting to know the horses better and just spending time with them” (Cohort 1, Youth 3). The advancement of spiritual wellbeing was also illustrated through the youths’ development of a relationship or special bond with the horse. One youth stated “he listens well and pays attention and he turns my day around and when I am having a sad day he puts his nose on my shoulder and then he smells my hand” (Cohort 2, Youth 9). To a less extent, the youth identified increased participation in cultural activities. One youth shared “[cultural activities] keep you busy to not go back to the way you were before” (Cohort 1, Youth 11) and “[cultural activities] are important because it’s me, part of my identity and beliefs” (Cohort 1, Youth 10). The youth also shared about their increased spiritual functioning, that is feeling more connected to their spirit. One youth shared “I didn’t really think lots about God at the time but when I started going to the horse program, it got me thinking lots and now I just pray every night and like I just pray that everything goes alright with my family when they come here [for a visit at the Treatment Centre]” (Cohort 2, Youth 10).

It should be noted that our team also examined the challenges youth identified with the program. For the most part, the challenges dissipated through the course of the program. The key challenges were associated with the youth attending the White Buffalo Youth Inhalant Treatment program, including most prominently: coming into a new environment, sorting out dynamics with peers, meeting new individuals, residing in a new community, and meeting White Buffalo as well as Cartier program staff. There were also complaints associated with the equine facility, including it being “cold” and “stinky like a farm”. These too declined as the EAL and White Buffalo programs progressed.

Discussion

The most significant finding for biological/physical wellbeing was experiencing healthy or safe touch. The importance and healing quality of physical touch to human wellbeing is well documented in the literature (Yorke, Adams, & Coady, 2008). Given the high rate of physical and sexual abuse among First Nations youth in treatment for VSM, the horses can offer a ‘safe’ and ‘non-sexual’ mechanism for physical touch to occur (Held, 2006). Robin and Bensel’s related work explains that pets can “satisfy the child’s need for physical contact and touch without the fear of the complications that accompany contact with human beings” (Robin & Bensel, 1985, p. 71). The literature also supports our finding that there may be physical health improvements following participation in an equine program. According to the Cartier program, this may be due in part to equine programs contributing to increased hand/eye coordination, balance and mobility. This is likewise identified in the general animal assisted intervention research (e.g., exercise and increased balance by walking a dog) (Friedmann, Son, & Tsai, 2010). Regaining motor coordination is an area of concern for youth who have misused volatile substances (Lubman, Yucel, & Lawrence, 2008). The third key finding of this study, although not identified in the equine assisted intervention literature, was learning about anatomy and how the body works through the EAL program and being with the horses. This has been identified however in emerging scholarship specific to AAIs with youth in treatment for solvent misuse (Dell et al., 2011). And last, connection with the EAL setting, that is, being at the farm and in nature, was identified in this study as well as the health literature. The work of Crofoot-Graham, for example, notes that connecting with nature is an important part of healing for Indigenous people (Crofoot-Graham, Cellarius, Clothier, Moore, & Hawkins, 2001). The land is intimately related to culture, spirit and other dimensions of healthy being. The biophilia hypothesis similarly proposes that as humans we have a genetic and fundamental need to affiliate with other living organisms, including nature (Kahn, 1997; Melson 2000, 2008; Wilson, 1984).

We applied the most common measure of psychological wellbeing located within the equine-assisted interventions literature in our study, and defined it through perceptions of self, and specifically identity and self-esteem. Our findings meaningfully supported both. For example, a study by Toukonen Cuffari (2011) explored the perceived benefits of female youth interacting with horses in recreation and therapeutic programs. Her findings suggest that perceived reciprocity surfaced between the study participants and their horses regardless of the type of program, and that this contribution to self-perception and self-esteem was a potential contributor to the youths’ wellbeing. Self-identity and esteem are key areas of

concern for First Nations youth in Canada given the historic impacts of colonization which attempted to “kill the Indian in the child” (Harper, 2008).

Although not found specifically in the equine literature, related literature to this study has identified the importance of the other measures of psychological wellbeing in this study, including some specific to Indigenous youth healing from addictions and AAI research: feelings/mood (Roberts et al., 2001), problem solving, attitude (Poole & Dell, 2006), participation (Hawkins, Cummins, & Marlatt, 2004) and nurturing (Dell et al., 2011). This is also supported in studies of at-risk youth and equine-assisted interventions in participant self-reporting of decreased depressive feelings and decreased feelings of loneliness (Bowers & MacDonald, 2001; Ewing, MacDonald, Taylor, & Bowers, 2007), problem solving and nurturing (Toukonen Cuffari, 2011), emotional regulation (Carlsson et al., 2014), and improvements in mental health and psychosocial functioning (Hayden, 2005; Schultz, Barlow, Remick, & Robbins, 2007).

The EAL program was able to offer social wellbeing through interpersonal relationships, comprised foremost of developing relationships and getting along better with others, and secondary as acknowledging the importance of community, family and friends. Since the early 1990s, extensive medical literature has emerged confirming a strong, positive link between social support through involvement in community activities and improved human health and survival (Kruger & Serpell, 2006). Our own research in Ontario with First Nations youth participating in an EAL program and healing from VSM also identified the important relationship that develops between the youth and horse facilitators (Dell et al., 2011). Although not EAL specific but related to equine assisted interventions, the literature also supports an increase in future community involvement with participants in therapeutic horseback riding programs (Iannone, 2003). Some equine assisted interventions have also demonstrated an increase in feelings of unconditional love and acceptance among participants (Iannone, 2003). One of the earliest animal assisted intervention studies by Cobb (as cited in Kruger & Serpell, 2006) referred to this as social support, that is, “information leading the subject to believe he is cared for and loved, esteemed, and a member of a network of mutual obligations” (p. 27). A sense of belonging and community is key to the identity and wellbeing of First Nations youth in Canada (Honouring Our Strengths: Indigenous Culture as Intervention in Addictions Treatment, 2014). We also know that peers are an important role in the initiation of VSM (Beauvais, Wayman, Jumper-Thurman, Plested, & Helm, 2002).

Findings were also identified that are not specific to the EAL literature, but again, are important to youth and addictions treatment, including for youth who misuse volatile substances as well as link with the AAI literature generally. The key findings were communication (Fergus & Zimmerman, 2004; Botvin & Griffin, 2004), impact of a new experience (Dell et al., 2013) and behavior change (Bone et al., 2011; Rollnick & Miller, 2009). Secondary were being a better team player (Roberts et al., 2001) and a leader (Hawkins et al., 2004). These findings likewise resonate with the equine-assisted interventions scholarship related to communication and mastery in a new experience (Toukonen Cuffari, 2011), and behavior change (Carlsson et al., 2014; Trotter, Chandler, Goodwin-Bond, & Casey, 2008).

One of the most potentially meaningful and unique findings of this research is the impact of the EAL program on spiritual wellbeing. There were three main findings that connect to the existing animal assisted intervention literature, and specifically with equines. The first is the human-equine relationship, and the merits of the youth just spending time with the horse. The horse-human relationship is based on the development of mutual respect and trust. In equine-guided activities, positive interactions with horses are most often observed when participants approach the horse, and thus the experience, from a stance of mutual respect and trust (Parelli & Parelli, 2012). The literature supports that opportunities to interact with animals provides a starting place to begin to explore and develop trust and a relationship with another living being (Latella, 2003; Wilkes, 2009). McNicholas and Collis (2006) explain, for example, that "[s]ocial signals from animals are less complex than from humans, and the reduced processing load may permit a greater degree of social understanding and social interaction than would be otherwise possible" (2006: 69). We know from trauma-related research that the "[r]estoration of the trauma victim's capacity for recovery hinges on provision of safety and development of trust…" (Yorke et al., 2008, pp. 22). This is of particular significance for First Nations in consideration of the traumatic effects of colonization on individuals, families and communities and resulting mistrust. We know that youth who misuse volatile substances are more likely to have histories of abuse than youth who abuse other substances (Sakai, Hall, Mikulish-Gilbertson, & Crowley, 2004).

Second, was the development of a relationship or special bond with the horse. According to the available literature, the bond between equine and human spirits is a "holding environment" (Bachi, 2013b, pp. 4) that allows for a bond to develop with animals and specifically with horses. Some refer to a meeting of spirits within this context. Individuals who have experienced spiritual trauma, for example, may find that being with animals provides an empathic space whereby "having someone witness their pain [may] bring hope through responding therapeutically to their suffering [and] that clients can begin to heal" (Ashbrooke in Wilkes, 2009, pp. 103). The work of Yorke et al. (2008) suggests that a strong intimacy/nurturing bond can form between humans and horses. They concluded that "… unique elements of equine-human relationships may foster deep, intimate connections" (pp. 18–19). Again, this is an important area of need for First Nations youth in treatment for VSM (Dell, Dell, & Hopkins, 2005). A third finding in this study, which is identified in the addictions literature but not as a key finding in this study although present, was increased spiritual functioning (Arnold, Avants, Margolin, & Marcotte, 2002). It is also identified as key to the healing of First Nations people (Honouring Our Strengths: Indigenous Culture as Intervention in Addictions Treatment, 2014).

And last, to a less extent, the youth identified increased participation in cultural activities, and this is not identified in the existing literature. Within an Indigenous worldview and the treatment centre's culture-based model of resiliency, the inter-connectedness of all living things as a community of beings is viewed as essential to an individual's sense of wellbeing. Within some First Nations communities, the role of other beings, including horses, holds significance as a part of identity, culture and spirit. Since the introduction of the horse to some First Nations people and communities, it has had significant working (e.g., hunting and gathering) and ceremonial (e.g., traditional Horse Dance) roles in the culture and their lives. The horse has historically been viewed by some with a profound sacredness, just as

there is sacredness believed to be in all living things (Bastien, 2004). The horse is identified as having a strong spiritual power, and is seen to be a ‘teller of truth’ who desires to ‘do the right thing’. It is believed that a horse’s spirit will lead individuals in the ‘right direction’ and will assist them in understanding their place in the circle of life (Dell et al., 2008).

Today’s global economy is placing unparalleled value on knowledge. Our current state of EAL and VSM knowledge, including AAIs and addictions generally, was supported. New understandings were also uncovered. The creation of new knowledge and its transference into practice is especially required in the substance abuse field (Simpson, 2002), and specific to VSM (Dell et al., 2011a). This is likewise true in the Equine Assisted Learning area (MacKinnon, 2007). Similarly, in the context of Indigenous health, unique consideration is being allotted to the development of understanding through multiple perspectives and its transference within specific social and political contexts (Estey, Kmetic, & Reading, 2007). By designing our study with these key points in mind, awareness of our findings is already being shared by our knowledge using and practice-oriented team members. Several of the key policy and practice implications they are focussing on include the need to:

- acknowledge the lack of research in EAL, and with youth who misuse volatile substances, and that the findings of this study show promise to study the area further.
- recognize that the horse and First Nations culture are historically linked, and that there is room for further understanding about this in the context of EAL.
- value a multi-disciplinary, community-based team approach to researching the diverse areas of EAL and VSM. A case-study design had not been conducted before and this study showed promise for its ability to offer a contextual understanding of EAL;
- practice traditional First Nations ceremony to ensure a ‘good’ and respectful research process. There is growing recognition of the importance of this, as was experienced in this study;
- formally acknowledge the impact of the EAL program facilitator, who up to this point in the literature, has not received due credit for their unique and essential role in assisting participants in EAL programs; and
- understand that there is significant variation in how EAL is applied across programs and therefore there is a need for further exploratory and evaluation studies designed specific to individual programs.

Limitations

There are two key limitations to the results of this study. First, the research findings are specific to White Buffalo and Cartier and it is difficult to transfer the data to additional cohorts. Further research is needed to establish the findings to be able to generalize beyond the studied cohorts. Related, a case-study design has important merits, and especially in an under-researched field, but it also has its limitations. The most significant is that it is not generalizable.

A second limitation of the present study relates to data collection. During the initial stages of the EAL program each cohort fluctuated due to drop out rates. Additionally, the youth had difficulty leaving their families and home community for treatment and their adaption to the treatment centre environment, staff, other youth, routines and their own detoxification upon entering treatment. These issues surfaced during the initial few weeks of treatment and therefore the data collected during this time period is limited. These limitations are important considerations when considering the implications of this study and for future research.

Conclusion

The linkage between what is commonly termed ‘horse therapy’ or equine assisted interventions and treating youth who misuse volatile substances has gained increased attention in Canada over the past decade. However, a large gap remains in the literature explaining the outcomes. Our team’s study applied a multi-disciplinary, community-based, exploratory case study approach to better understand how an EAL program contributes to the wellbeing of First Nations youth in treatment for volatile substance misuse. The findings suggest that the youth enhanced their bio-psycho-social-spiritual wellbeing as outlined in White Buffalo’s framework for healing. The horses, facilitators and program content supported the youths’ wellbeing in each area of the holistic framework, with emphasis on the cultural significance of the horse and its helping role. Understanding from the existing EAL literature was likewise supported in this study and new knowledge identified as well. The results of this study offer a meaningful understanding and contribution to the literature, as studies are rare in the EAL and VSM fields and youth addictions treatment generally. Further, our team’s blending of traditional Indigenous knowledge and an academic approach has allowed us to premise our work on Indigenous ways of knowing. We believe this model can also help fill a gap in the literature and practice. And finally, as shared, the findings of this study offer important implications for both policy and practice.

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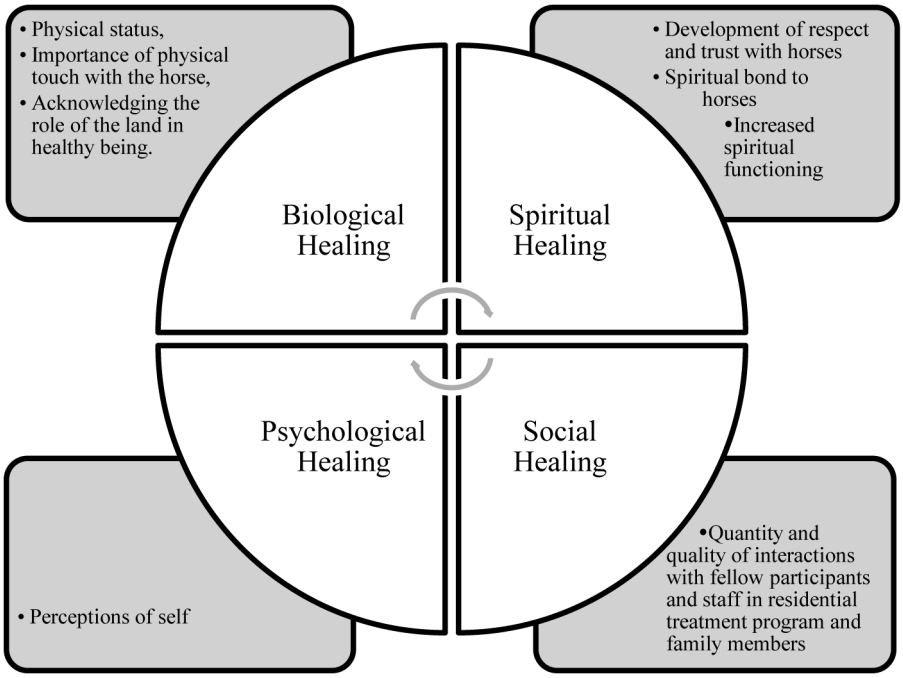

Figure 1.
Holistic bio-psycho-social-spiritual framework of healing

Table 1

Initial coding tree of youth wellbeing themes derived from the literature, team expertise & analysis of cohort one

Biological/Physical	Social	Psychological Mental/Emotional	Spiritual
• Physical health • Physical touch • Nature/ natural setting	• Get along • Develop relationships • Importance of community • Importance of family • Importance of friends	• Identity • Self-esteem	• Just being • Bond • Spiritual functioning

Table 2

Final coding tree (findings) of youth wellbeing themes

Culture	Biological/Physical	Social	Psychological Mental/Emotional	Spiritual
• Knowledge • Moontime (menstruation)	• Physical Touch • Physical health • Anatomy • Nature/ Natural setting	• Develop relationships • Communication • Get along • Experience • Behavior change • Importance of friends • Importance of family • Importance of community • Team player • Leader	• Identity • Self-esteem • Feelings/Mood • Problem solving • Attitude • Participation • Nurturing	• Just being • Bond • Cultural activities • Spiritual functioning