

Experiences of Palliative Inpatients with Equine Therapy

by

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ABSTRACT

With advances in modern medicine, Canadians are living longer with chronic illness. While many live at home if possible, those in inpatient units require comfort measures to complement treatment programs. Anecdotal evidence has established that equine (horse) therapy can be beneficial to humans, but there has been limited research about utilizing horse therapy within the inpatient palliative care population in Canada. Using a qualitatively driven mixed methods design, the aim of this study was to understand the experience of the palliative care inpatient with horse therapy. The collective core narrative of “living in the moment” emerged from the threads of quality of life, fatigue, distraction, reminiscence, and identification with the therapy horse. This project outlays an innovative approach for conducting horse therapy within an institutional setting and begins to address the gap in knowledge of the meaning of horse therapy to the adult palliative care inpatient population.

DEDICATION

I dedicate this thesis to my loving parents.

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Chapter I: Experiences of Palliative Inpatients with Equine Therapy

Palliative care provides holistic approaches to clients (and their families) who have been diagnosed with life-threatening illnesses and need complex symptom management. The goal is to manage the illness symptoms so that clients can experience the best possible quality of life (QOL) from the initial stages of the illness throughout the lifespan until the end of life (World Health Organization [WHO], 2017). Symptoms that are difficult to treat with conventional medicine include pain, fatigue, and agitation. Palliative care aims to relieve pain and other distressing symptoms, to affirm life while encompassing dying as part of the normal process of living, to integrate psychological and spiritual aspects into personalized care, to support clients and their families, and to enhance QOL (WHO, 2017). Clients who receive palliative care often have complex care plans due to multiple diagnoses and symptoms; thus, despite the best efforts of the healthcare team, gaps may be evident in their plans. Areas of need identified as unmet by these clients are psychosocial, such as having someone with whom they can sit down and discuss their treatment plan (Marcus, 2013). Complementary and alternative treatments that help address the psychosocial needs of clients receiving palliative care are becoming more common (Marcus, 2013; Pan et al., 2012). One such psychosocial therapy explored in this study is equine (horse) therapy.

Relevance of Horse Therapy for Palliative Care

Clients receiving palliative care are attempting to cope with chronic conditions that will eventually lead to the end of life. They may be dealing with multiple symptoms daily such as pain, loneliness, stress, and depression. Not only may the clients worry

about themselves, but they also worry about their burden on family and friends. In a Canadian grounded theory study, one participant noted that palliative care was not just about dying, but about living by doing “the best you can with what... issues you’re dealing with” (Zimmerman et al., 2016, p. 224).

Talking about issues related to palliative care can be difficult for clients. Horses may help with communication needs. As prey animals, horses have a sensitivity to understand subtle nonverbal cues (Latella & Abrams, 2015) which can lead to an exchange of affection between horses and clients (Skeath, Jenkins, McCullough, Fine, & Berger, 2015). The horse interacts with the client and the client can act to elicit a response from the horse. This small measure of control over the interaction could give a sense of normality to the client amid an otherwise uncontrolled symptomatic illness.

Palliative Care in Canada

In 2002, the Canadian Senate referred to palliative and end of life care as both a right and an essential health care service for all Canadians (Lusk, 2007). However, systemic barriers to palliative care such as limited funding, misinformation about palliative care in communities and within health care, and lack of caregiver support may negatively influence palliative care services and consequently QOL. Health care professionals as well as clients may be unprepared for the complex end of life process (Rocker, Downar, & Morrison, 2016; Wilson, Avalos, & Dowling, 2016). There are limited evidence-based practice palliative care guidelines and standardized tools for nurses and other health providers in Canada (Canadian Cancer Society, 2016). Access to palliative care can prove more difficult in rural areas compared to urban (Dumont,

Jacobs, Turcotte, Turcotte, & Johnston, 2014). Ultimately, a universal standardized approach to palliative care in Canada is needed. In the short term, there may be ways to improve QOL within existing palliative care units at the local level, and this thesis is focused on one way – horse therapy.

History of Animal Assisted Therapy

Historically animals played a large part in the daily lives of humans. The earliest documentation made references to animals as either spiritual or food sources (Serpell, 2015). The unique human-animal bond was noted to exist prior to the written word (Fine, 2000). As humanity grew and developed, so did our relationship with animals. As technology developed, our reliance on animals for daily survival (e.g., transportation) decreased. Changing from rural areas to large urban cities, it became more common for animals to be pets. Children learned how to empathize and be responsible when they looked after a pet. Animals provided socialization, relaxation, and social support (Serpell, 2015). In 1861, Florence Nightingale identified that an animal such as a bird can give pleasure and be an excellent companion to someone confined within a room or chronically ill. In the 20th century, psychologists noted the positive benefits of having animals in their client sessions (Grinker, 2001; Macauley, 2006; Ockleford & Berryman, 2001; Serpell, 2015). Recently, therapy dogs were found to help hospice clients feel less lonely, depressed, and stressed; the animal visits stimulated conversation and memories of past experiences with pets (D'Arcy, 2011). Chur-Hansen, Zambrano and Crawford (2014) identified the limited research concerning an animal's role with people in hospice or palliative care.

Researcher Positionality

I grew up on a farm in rural Prince Edward Island (PEI). My horse was an animal I was able to confide in and share my life with. She gave me a sense of empowerment, taught me how to interact with others, and provided me with unconditional acceptance and love. So much of what I know today can be attributed to my involvement with horses. At present, I work within the healthcare system providing palliative care to home care clients. When my clients are no longer able to manage at home, I refer them to the Palliative Care Center. To help address unmet psychosocial needs of the adult palliative care inpatient, I wanted to learn if equine therapy would be beneficial. Having an animal – in this study a horse – visit the palliative center where clients reside can provide a psychosocial experience without compromising their needs or energy levels (Skeath et al., 2015).

Chapter II: Literature Review

A literature review was necessary to identify and appraise available research and evidence. My review included both the adult inpatient palliative population and horse therapy. Articles that included both these areas were limited. Therefore, I examined articles within broader search terms as outlined in this chapter. I discuss the search strategy and literature sources using two sections: (a) horse therapy and the palliative population and (b) small animal therapy and the palliative population. I then synthesize ideas from the articles to identify gaps in knowledge of horse therapy and its potential to influence the quality of life for clients experiencing palliative care and services.

Search Strategy

I used CINAHL with Full Text, PubMed, Cochrane Library (Wiley), and ProQuest Nursing & Allied Health Source databases. The search keywords were *equine therapy, horse therapy, animal therapy, animal assisted therapy (AAT), animal assisted activity (AAA), palliative, and hospice*. There is a variation between AAT and AAA; however, to broaden the literature search I accepted them as interchangeable. Truncation was used to ensure retrieval of potential variations of the keywords. Initial searches using the additional terms of *companionship, equine, and quality of life* yielded several results that had tenuous, tangential relationships to my area of interest. For example, one result was an article on the by-products of horses being used in pharmaceuticals to determine any effects on cognitive function in older women (Espeland et al., 2010). Therefore, to help locate relevant results, I used the following keywords and Boolean phrases: (*equine therapy OR horse therapy OR animal therapy OR animal assisted therapy OR animal*

assisted activity) AND (*palliative* OR *hospice*) NOT (*child* OR *pediatric*). Inclusion criteria were that the article was peer reviewed, published in 2000 or later, written in the English language, and contained both an aspect of adult palliative care and the broader term of animal assisted therapy. Articles that focused only on children, despite their relevance to animal therapy and palliative care, were excluded from my literature review as this project was only concerned with adults. Articles that focused solely on pet ownership were excluded given the significant difference between animal assisted activity or therapy and pet ownership. A therapy animal must have the right temperament and the willingness to do the therapy. Often animals must go through specific training or certification procedures to qualify as a therapy animal (Marcus, 2013). A table of the literature review search results is displayed in Appendix A.

Fifteen articles met the inclusion criteria from my initial search process. More than twelve months later and just before thesis submission, an additional literature search was conducted using the same strategy. This yielded an additional five articles for a total of 20 articles. Four of the new articles briefly mentioned the research topic; the fifth was a study of post-encounter protocols of canine AAT published in 2017. During the literature review search process, there was a significant difference between initial return volume (broad keywords/Boolean phrases) and refined return volume (specific keywords/Boolean phrases). Therefore, I scanned the initial result pages of large volume return searches to ensure articles that would be appropriate were not excluded in the next search with the refined keywords/Boolean phrases. I manually reviewed existing articles for additional references not shown by the literature review search strategies. Open access articles identified through Google Scholar were also utilized. Through these

additional methods, another 39 articles were located for a total of 59 articles in this review. Most of these articles focused on or had a section dedicated to palliative care or a component of palliative care (e.g., persons living with breast cancer). The need for more academic evidence about animal therapy was stated in each article. Refer to Appendix B for a summary of the articles included in my review.

Other Literature Sources

Sources such as *Google* and *Amazon* were also utilized for open access articles and books. Due to the difficulty in verifying the accuracy of some articles/books, they were not included as part of my literature review. To illustrate, although the book by Trotter (2012) was well written by several professionals and referenced several reputable resources such as the Certification Board for Equine Interaction Professionals (CBEIP), the Professional Association of Therapeutic Horsemanship International (PATH Int), and the Equine Assisted Growth and Learning Association (EAGALA), it was difficult to verify the academic rigour of these sources. A resource prepared by only equine professionals could have flaws that would be apparent to a healthcare professional or be heavily based on anecdotal accounts instead of academic research. The Google and Amazon resources and books did not have the same requirements as an academic database with a peer-reviewed filter, which was one of the inclusion criteria for the literature search. In addition, many of the general horse therapy resources located via Google and Amazon focused on the adolescent population which was not applicable. The elimination of resources that did not meet the literature review inclusion criteria did not mean these resources were not useful or valid. In fact, these resources had applicable

content used for other areas of this study. Due to the difficulty in determining the accuracy of this type of evidence, I could not include these resources in my review of the literature. I included only academic, peer-reviewed articles.

Horse Therapy and the Palliative Population

Twenty-six articles included horse therapy as a potential complementary therapy in palliative care settings. Of these 26, 14 were actual research studies. The remainder were theoretical articles, literature summaries, or literature reviews. None of these studies focused on the adult inpatients receiving palliative care; however, the populations studied displayed palliative and/or chronic conditions. Two studies focused on female breast cancer (Cerulli et al., 2014; Haylock & Cantril, 2006), five on adult populations with chronic conditions (Dabelko-Schoeny et al., 2014; Hakanson, Moller, Lindstrom, & Mattsson, 2009; Homnick, Henning, Swain, & Homnick, 2013; Vermohlen et al., 2018; Wehofer, Goodson, & Shurtleff, 2013), two on adult women with eating disorders (Cumella, Lutter, Smith Osbourne, & Kally, 2014; Sharpe, 2014), and the remaining five studies on psychosocial aspects of horse therapy with veterans (Erickson et al., 2016; Johnson et al., 2018; Lanning & Krenek, 2013; Romaniuk et al., 2018) and psychiatric inpatients (Nurenberg et al., 2014). Nine studies used quantitative methods (Cerulli et al., 2014; Cumella et al., 2014; Dabelko-Schoeny et al., 2014; Homnick et al., 2013; Johnson et al., 2018; Nurenberg et al., 2014; Romaniuk et al., 2018; Vermohlen et al., 2018) with three using randomized control trials (Cerulli et al., 2014; Nurenberg et al., 2014; Vermohlen et al., 2018). Haylock and Cantril (2006) and Sharpe (2014) used qualitative methods. The remaining studies by Erickson et al. (2016), Hakanson et al. (2009), and

Lanning and Krennek (2013) involved mixed method research using both quantitative and qualitative data.

The type of horse therapy used in these studies also varied. Lanning and Krennek (2013), Lessick et al. (2004), and Wehofer et al. (2013) incorporated riding therapy in their studies. They found common benefits were improved sociability, improved muscle strength, and increased confidence. Although several studies focused on riding, the results were from a combination of both riding and ground work interventions, not just riding alone (Cerulli et al., 2014; Erickson et al., 2016; Lanning & Krennek, 2013; Haylock & Cantril, 2006; Johnson et al., 2018; Sharpe, 2014; Vermohlen et al., 2018). Dabelko-Schoeny et al. (2014) and Romaniuk et al. (2018) did not use riding therapy. Instead they worked with horses on the ground by means such as grooming, finger painting symbols on the horse, and leading the horse. Rossetti and King (2010) identified that most horse therapy required the participant to go to the horse farm rather than have the horse come to the participant. Travelling to a farm was not a viable option with the inpatient palliative population.

The remaining 12 articles that included horse therapy were theoretical articles, summaries, and/or reviews. The populations varied, but all included a portion of a palliative and/or chronic population. The additional reviewed studies that did not fit the palliative population helped provide additional insight into other areas of horse therapy research. For instance, Maujean, Pepping, and Kendall (2015) noted the need for further randomized control trials in animal assisted therapy. However, they noted difficulty determining a causal reaction to horse therapy and attributing it to one lone intervention.

Small Animal Therapy and the Palliative Population

The rest of the literature reviewed focused primarily on the benefits and mechanisms of small animal therapy. The studies found in the literature review varied in the type of small animals used with dogs being the most studied (Cole, Gawlinski, Steers, & Kotlerman, 2007; Engelman, 2013; Geisler, 2004; Hall & Malpus, 2000; Johnson, Meadows, Haubner, & Sevedge, 2008; Krause-Parello, Levy, Holman, & Kolassa, 2018; Kumasaka, Fujisawa, Karino, Masu, & Kaaoka, 2016; Kumasaka, Masu, & Kataoaka, 2012; Maculey, 2006; Marr et al., 2000; Nathans-Barel, Feldman, Berger, Modai, & Silver, 2005; Richeson, 2003). Other animals used were rabbits (Kumasaka et al., 2012; Marr et al., 2000), cats (Kumasaka et al., 2012), fish, (Edwards & Beck, 2002), birds (Falk & Wijk, 2008), ferrets, and guinea pigs (Johnson et al., 2008). Souter and Miller's (2007) meta-analysis of existing studies agreed that AAA had a positive effect on depression. However, out of a potential 165 studies only five met their inclusion criteria, indicating that although literature existed there was a wide variation in how the studies were developed.

Four articles focused on cancer populations (Best et al., 2015; Johnson et al., 2008; Marcus, 2013; Nakano, Sata, Katayama, & Miyashita, 2013), four on nearing death or end of life populations (Chur-Hanson, Zambrano, & Crawford, 2014; Geisler, 2004; Kedanis, 2016; Lander & Graham-Pole, 2008), five specifically on the palliative care population (Engelman, 2013; Krause-Parello et al., 2018; Kumasaka et al., 2016; Kumasaka et al., 2012; Schmitz, Beermann, MacKenzie, Fetz, & Shculz-Quach, 2017), and six on palliative care and/or hospice as an area of examination or of use for animal therapy (D'Arcy, 2011; Horowitz, 2010; Ockleford & Berryman, 2001; Reed, Ferrer, &

Vellagas, 2012; Van Hyfte, Kozak, & Lepore, 2013; Winkle, Wilder, & Jackson, 2014). The remaining articles in Appendix B had components of the palliative care population with various chronic conditions.

Synthesis of Articles Reviewed

In general, psychosocial and emotional benefits of AAT for clients included socialization (Falk & Wijk, 2008; Geisler, 2004; Hall & Malpus, 2000; Lessick, Shinaver, Post, Rivera, & Lemon, 2004; Marr et al., 2000; Maujean et al., 2015; Nurenberg et al., 2014; Richeson, 2003; Rossetti & King, 2010; Williams & Jenkins, 2008), stress reduction (Engelman, 2013; Geisler, 2004; Macauley, 2006; Marcus, 2013; Ockleford & Berryman, 2001; Romaniuk et al., 2018; Rossetti & King, 2010), improved mood (Cumella et al., 2014; Johnson et al., 2008; Kumasaka et al., 2016; Kumasaka et al., 2012; Marcus, 2013; Rossetti & King, 2010), increased self-awareness (Hakanson et al., 2009; Rossetti & King, 2010; Wehofer et al., 2013), and increased feeling of control (Hakanson et al., 2009; Rossetti & King, 2010; Wehofer et al., 2013). Physical benefits included decreased blood pressure (Matuszek, 2010; Rossetti & King, 2010), decreased pain (D'Arcy, 2011; Engelman, 2013; Hakanson et al., 2009; Horowitz, 2010; Marcus, 2013; Reed et al., 2012; Wehofer et al., 2013), decreased fatigue (Johnson et al., 2008; Matuszek, 2010; Vermohlen et al., 2018) and increased appetite (Marcus, 2013). Breast cancer survivors participating in horse therapy exhibited increased oxygen consumption, increased leg and shoulder strength, and increased QOL (Cerulli et al., 2014). With the end of life process, animals were found to bring comfort and peace to clients (Chur-Hanson et al., 2014; Geisler, 2004; Lander & Graham-Pole, 2008).

As conveyed in Appendix B, there was an overwhelming positive response to AAT. Animals do not judge, manipulate, or have knowledge of a client's illness. Therapy animals responded to the clients just as they were in that point of time. Animals were found to pick up nonverbal cues from human participants and provide companionship, comfort, and a sense of peace that helped improve the QOL of the participants (Engelman, 2013; Geisler, 2004; Horowitz, 2010; Kumasaka et al., 2012; Lessick et al., 2004; Marcus, 2013; Matuszek, 2010; Ockleford & Berryman, 2001; Rossetti & King, 2010). By responding to the client's behaviours, these small and large animals were thought to act like a 'bridge' between the client and the therapist or therapeutic group (Rossetti & King, 2010). Clients could change how they solicited the response from the therapy animal if they wanted a different response (Haylock & Cantril, 2006). Understanding how to solicit animal responses made clients more self-aware (Haylock & Cantril, 2006; Lessick et al., 2004; Rossetti & King, 2010).

AAT was especially important for clients who wanted human companionship but did not know how to obtain it, or for those who did not want human companionship but were willing to see animals. For example, Engelman (2013) examined the responses of a man who experienced depression and refused company, but surprisingly allowed a therapy dog into his room. The dog, not deterred by the man's off-putting behaviours, jumped up on the bed for companionship. After the positive interaction with the dog, the man was more willing to accept human company and requested his privacy sign to be taken down from his door. AAT was found to reverse the roles of the client from being the nurtured to the nurturer (Geisler, 2004). A client who spent time with a therapy dog

nurtured the dog through presence and attention. This gave the client a feeling of control within an otherwise chaotic illness.

In two other studies, AAT with horses contributed to positive client outcomes. For example, breast cancer survivors who engaged in a combined riding and ground therapy intervention reported appreciation that the focus was on the survivors and the horses – not the cancer diagnoses (Haylock & Cantril, 2006). Similarly, 14 Canadian women struggling with eating disorders in a qualitative horse therapy study (Sharpe, 2014) agreed that the importance of the horse therapy was its focus on the present moment and not on the eating disorders. After therapy, the participants from both studies identified connections between the animal therapy and other aspects of their lives such as the importance of living in the present and being mindful. Horse therapy was described as giving participants a sense of accomplishment and pride (Haylock & Cantril, 2006; Sharpe, 2014).

Knowledge Gaps

Despite recognition of AAT's benefits and positive outcomes, gaps were noted from the literature review. Anecdotal evidence abounded about the multiple positive effects of animal therapy; but for knowledge to be most beneficial, targeted academic peer-reviewed studies need to be conducted. None of the articles from the literature review focused on both horse therapy and the palliative inpatient population. This thesis will help to address that knowledge gap.

The definition of horse therapy varied from study to study. Horse therapy could mean various types of therapy including riding horses, interacting with horses on the

ground, or a combination of the two. Hallberg (2018) noted the importance of developing concise, universal definitions of the various horse therapies that were available. For example, hippotherapy has an accepted definition as a physiotherapy approach to utilize the movements of the horse to help strengthen and regulate the movements of the client through riding (Vermohlen et al., 2018). A universal term for the type of horse therapy that the palliative care population could access would allow for easier communication and understanding across the interdisciplinary teams. Horowitz (2010) found that some facilities provided AAT to actively assist with the client's individualized health care plans, whereas other facilities offered AAT only upon request by the client. For this study, horse therapy was actively provided to consenting clients. It was defined as a form of psychosocial therapy that included ground visits with Billy alternating with videos of Billy.

Potential risks for harm with AAT

There are potential risks for harm with AAT such as hygiene and allergy concerns (Geisler, 2004; Schmitz et al, 2017). The ability of the facility to meet safety and infection control policies (Horowitz, 2010) needs to be assessed. Due to the unpredictable disposition of animals the specific animal(s) used for therapy needs to be evaluated (Creagan, Bauer, Thomley, & Borg, 2015). The animal must have an appropriate temperament for the work involved as determined by the animal handlers (Trotter, 2012). For some species, such as canines, training courses and certification are required before becoming a therapy animal (Creagan et al., 2015). Horse therapy requires training of both the horse and the handlers to ensure that potentially dangerous situations have a positive

resolution, and that the sessions are facilitated for the best optimal outcomes of the visit (Thomas, Lytle, & Dammann, 2016). Client safety must be prioritized during therapy (Haylock & Cantril, 2006) with a prepared plan in place to stop therapy and obtain help if needed. In the literature reviewed, no cases of infection were traced back to AAT (Marcus, 2013; Matuszek, 2010; Ockleford & Berryman, 2001; Pan et al., 2012; Rossetti & King, 2010).

Summary of Literature Reviewed

I found overwhelmingly positive anecdotal evidence for animal assisted therapy with several types of animals, including horses. Most of the articles in this review identified the need for research in palliative care to complement and provide scientific evidence to confirm or deny the anecdotal evidence. Johansen (2008), MacDonald and Barrett (2015), and Matuszek (2010) noted the need for further research with animal assisted therapy. Of the studies reviewed, the evidence supporting AAT was either positive or indifferent. Each study varied regarding the AAT intervention, how it was provided to the clients, and how it was measured. None of the horse studies reviewed involved an inpatient population receiving palliative care as the study focus. This stimulates the question: What are the experiences of palliative inpatients with horse therapy?

Chapter III: Method

Within my palliative nursing experience, I found that individuals who received palliative care were routinely exposed to ‘good’ and ‘bad’ days based on their symptom presentation and management strategies. An appropriate protocol for AAT with horses and palliative care inpatients that was responsive to the clients’ needs and fragilities needed to be developed. To answer the research question “What are the experiences of palliative inpatients with horse therapy?” a qualitatively-driven mixed-methods approach was selected. The collection of both quantitative and qualitative data would provide more robust data than using one method alone. This was critical considering the limitation of both the available population and the scientific evidence.

Mixed-Methods Design

The mixed-methods design for this project was quant → QUAL (Morse & Niehaus, 2009), a sequential design with the supplemental quantitative component collected first followed by the dominant qualitative component. This study’s aim was to understand the client’s experience with horse therapy, so emphasis was placed on the qualitative component that yielded most of the data to answer the research question. As recommended by Ansari, Panhwar, and Mahesar (2016), the findings from both methods were analyzed separately and then integrated into the qualitatively presented findings.

Theoretical Underpinnings. To understand the experience of the participant, I sought empirical knowledge from a relativist ontological perspective. Ontology is the nature of reality or the sense of existing and interacting with life’s experiences (Doane & Varcoe, 2012). There are two forms of reality: independent and dependent. Independent

reality is the world as it exists despite how the human mind interprets it, and dependent reality is the world as interpreted by the individual human mind (O'Grady, 2002). As O'Grady (2002) identified, a relativist ontology is the dependent reality that is pertinent to the individual experiencing it. It assumes that dependent reality is constructed inter-subjectively through meanings and understandings developed socially and experientially. Individuals' intents, decisions, cultures, and environments all interact in their stories so there are no right or wrong answers (Bunnin & Jiyan, 2004; Hales, 2011; O'Grady, 2002). For example, if two sisters visited a farm together they might both have different interpretations of the visit. While both sisters had similar childhoods, they have different views based on different experiences within their similar upbringing. Although they have lived in the same house with the same parents, they have experienced each event differently based on their own experiences and familiarities. Therefore, one sister might enjoy the farm animals, whereas the other might prefer musical endeavors. There was nothing right or wrong in their differing opinions and tastes because, as Bunnin and Jiyan (2004) construed, individuals simply have different interests based on their unique perspectives. While the animal-preferring sister described animals as her passion, her sibling saw animals as a hobby.

The experience of the participants' dependent realities can be examined in two ways: deductively or inductively. Deduction involves collecting data and then making objective observations and specific notations about that data. An inductive approach, such as asking open ended questions, explores subjective interpretations of the data and deepens understanding. For example, if a participant reported a lower pain score after a horse therapy visit compared to before the visit I would deduce that the horse therapy and

the decrease in pain levels were related. However, if under further analysis they were not related, then an inductive approach would be needed to help understand why there was a decrease in pain levels for that participant.

In this study, emphasis was placed on the experience of the participant to help generate data and to understand the appropriateness of horse therapy with the inpatient palliative population. This focus on the qualitative experience would make a small sample size appropriate. However, quantitative data obtained from large sample sizes are ideal to increase their generalizability to similar populations (Creswell, Plano Clark, Gutmann & Hanson, 2008). This was not possible due to the limited availability of the population studied. Therefore, a mixed methods study has allowed the integration and use of both methods.

The revised Edmonton Symptom Assessment System (ESASr), a standardized tool used in multiple settings internationally (Hui & Bruera, 2017), captures a moment in time of how clients experience several symptoms. The ESASr data aid in identifying multiple symptoms affecting the experience and contributes to the interview prompts of the qualitative component, thus enriching the dominant interview data. For example, asking a participant to expand on their scoring of their pain in the narrative interview not only gives insight into the ESASr result, but also shows if a change in pain score could be attributed to the horse therapy alone.

In my thesis research, I used mixed-methods in the following way: Descriptive statistics and the ESASr provided brief summaries of the sample and its measures in a meaningful way at a point in time that helped show patterns in the data. The interviews provided the bulk of the data examined. Together, the combined quantitative and

qualitative methods provided insight into the complex relationships between various aspects of the participants' experiences.

Study Design

Two provinces were involved in this study, so the proposal had to be approved by two different Research Ethics Boards (REB): the UNB REB and the PEI REB. Approval was also required and obtained from the UPEI Animal Care Committee to carry out the research in agreement with guidelines from the Canadian Council of Animal Care. The study officially started the week of November 7, 2017 and ended July 31, 2018. During this time, the study was put on hold during the winter for a total of six active months of the study.

Sample, setting and recruitment. Purposive criterion sampling, as described by Palys (2008), entails selecting the sample based on characteristics the participant possesses. This sampling was used in the inpatient's natural setting at the PPCC to help maintain the context of the population studied. To be eligible to participate, the individual needed to meet the following inclusion criteria: Be a PPCC inpatient, have the competency to provide fully informed consent, speak English, be able to participate with the therapy, and have manageable symptoms. Staff members of the PPCC with access to potential participants' medical files screened potential participants according to study criteria. Information letters (Appendix C) were given to potential participants, followed by a discussion with me about what the study entailed. Consent (Appendix D) was obtained from interested individuals prior to them starting the study.

Intervention. The horse therapy intervention was developed with the expertise of Dr. McNiven who volunteered with both dogs and horses at the PPCC in Charlottetown, PEI. Dr. McNiven determined that a horse visit once a week would be appropriate based on her experience as a certified Equine Specialist with EAGALA. The horse (Billy), selected for this intervention, is owned by Dr. McNiven. Billy is a 16-year-old grey Norwegian Fjord registered with the Canadian Fjord Horse Association. His history includes providing visits to the palliative care population both in the community and at the farm. Dr. McNiven's and Billy's experience helped to mitigate some of the risks identified in the literature review. It is also important to note that I am a Registered Nurse and that we had the ongoing support and resources of the PPCC throughout the study.

The intervention consisted of four alternating horse therapy visits (two with Billy coming to the PPCC and two viewing a video of Billy) per participant over a two-week period. Billy came to the room window for all participants, and participants also had the option of a hands-on visit with Billy at the front door of the PPCC. The video of Billy consisted of clips from his previous visits to the PPCC (confidentiality was ensured) as well as clips of Billy in his home environment. Data collection began with the fourth visit. A protocol of how each visit was conducted and how the data were collected is in Appendix E.

Data Collection

Data collection began with the fourth visit and included multiple phases. First, I accessed the medical chart to obtain the participant's medications and latest ESASr completed by staff (up to 24 hours before the fourth visit). The participant completed

another ESASr shortly after the therapy visit. To have consistent inter-rater reliability, the ESASr scale data were only obtained by the participants. The staff and researcher merely recorded the data the participants provided. I then obtained the remaining demographic data and the qualitative interview data. Depending on an individual participant's health status, data were collected via a few longer sessions (approximately 15-70 minutes) or several short sessions (approximately 5-15 minutes). Two of the eight participants experienced death before finishing the horse therapy, decreasing the participant number to six. A table outlining the completed participants' involvement in the study can be found in Appendix F.

Quantitative component. Simple demographic data (Appendix G) such as age, sex, gender, education level, language, and diagnosis were collected from participants. More complex data such as medications, type of previous involvement with animals, and the perceived effect (e.g., beneficial, indifferent, negative) that previous involvement with animals had on participants' lives were also collected.

Perry, Potter, and Ostendorf (2018) discussed the importance of patient-centered care with the palliative population. To provide patient-centered care, it is important to take into consideration the participant's preferences and cultural needs. Participant ethnicity was added to the demographic questions because ethnicity could potentially have an impact on their experience with horse therapy (Jegatheesan, 2015). For example, in some cultures owning a horse would be valued as a status symbol while in others a horse could be viewed as a dietary staple. Demographic data were primarily collected through an interview with the participant, except for the participant's medication list obtained via medical records.

ESASr. Over time the ESASr (Appendix H) provided a context through which symptoms for each client could begin to be understood. It was originally designed with nine common symptoms experienced by cancer clients (Bruera, Kuehn, Miller, Selmsler, & Macmillan, 1991) but was revised to allow the customization of symptoms as needed (Nekolaichuk, Watanabe, & Beaumont, 2008). The routine symptoms on the ESASr scale (pain, tiredness, drowsiness, nausea, appetite, shortness of breath, depression, anxiety, and well-being) could be similarly experienced by the palliative population regardless of diagnosis, making the ESASr an effective symptom tool for palliative care clients. Hui and Bruera (2017) noted that over a span of 25 years the ESASr had become useful in multiple inpatient and outpatient settings such as oncology, palliative, and nephrology.

In reviewing 39 papers that utilized the ESASr, Richardson and Jones (2009) found the test-retest reliability was 0.8 or above (acceptable to excellent reliability), except for one report which had a test-retest reliability of 0.35–0.72 (0.35 was not acceptable whereas 0.72 was acceptable). Richardson and Jones (2009) noted poor face and content validity due to variations in symptoms, format, and time intervals between assessment collections. They noted some of the symptoms assessed in the ESASr were not symptoms at all, but an outcome of care such as well-being. Watanabe, Nekolaichuk, and Beaumont (2011) concurred with Richardson and Jones (2009) about the potential for misinterpretation among the different variations of the ESASr. This was further compounded with international (translated) versions of the tool. The person who completed the ESASr (client, family, or health care professional) influenced the responses. This meant that the ESASr tool was reliable if, and only if, the same tool was used in the same manner. Hence, it was important in this study that participants provided

their own ESASr scores for each symptom. Even when having the test administered similarly, the scoring was subjective to the individual, and to compare a four-point difference (e.g., pain dropped from 8 to 4) with another participant's three-point difference (e.g., pain dropped from 8 to 5) was not possible as each participant placed a different value on what constitutes one point. This was important to consider during the analysis stage.

The ESASr was completed daily at the PPCC. It was ideal to use with this study as the inpatients were already familiar with it, therefore reducing participant burden with data collection. The ESASr data were collected by either myself or PPCC staff (both are experienced palliative care clinicians who received the same training from the same employer on how to use the ESASr tool). My data collection protocol (Appendix E) required an ESASr taken by PPCC staff before the fourth visit of horse therapy and another ESASr taken by myself after the fourth visit. The participant provided the data for each ESASr symptom regardless of whether a staff member or I obtained the data.

Qualitative component. A narrative approach comprised the qualitative component which focused on the meanings people drew from their experiences. The researcher's purpose was to facilitate the storytellers (participants) to share their stories in detail from their personal perspective (Daiute & Lightfoot, 2004). Collaboration with the storyteller enabled a more accurate, non-invasive, detailed, chronological account. The raw, uninterpreted account by the participants was the story. The collaborated account with the researcher was referred to as a *narrative* (Polkinghorne, 1996). Through the generation of their narratives, participants discovered aspects of themselves that may

have been unknown to them until examined in conjunction with the researcher. Sharing their stories served as a means for participants to affirm their sense of self (Duffy, 2007).

Narrative concepts. The main concepts of narrative inquiry are temporality, sociality, and place (Clandinin & Huber, 2010). The temporality of the narrative means that it is affected by the passage of time (Clandinin & Huber, 2010). Sociality acknowledges how the personal and social conditions (e.g., larger cultural, social, and institutional factors) of both the participant and the researcher affects the narrative (Clandinin & Huber, 2010). The concept of place refers to specific boundaries where the inquiry and events took place in the narrative. Duffy (2007) notes the importance of who the storyteller is. The authorial voice of the storyteller can change depending on the temporality, sociality, and place. In this study, the storyteller was each participant as they existed at the time of the study.

There are three ways for a narrative to be conveyed: autobiographical, biographical, or a combination of the two (Duffy, 2007). Participants make connections such as understanding for the first time a factor that affects their story while they are telling it (Holloway & Wheeler, 2013; Martin-MacDonald, 1999). Because the researcher influences how the narrative develops, it is essential for the researcher to be an active, non-judgmental listener (Clandinin & Huber, 2010) to gain insight into the experience of the participant (Clandinin, 2006) as the storyteller. This allows the experiences of the participants to be portrayed through a relativist ontological perspective.

Interviews. Most data in this study were from narrative interviews (Appendix I). The questions were as open-ended as possible, and the interview was often guided by the participant. Every question on the guide was asked of each participant; however, the

depth of responses was not consistent. The responses varied due to the status of the participants such as if they tired quickly, or when, in one case, the participant indicated that he could not expand any further on the question beyond his basic response. When participants offered limited responses, the interviewer used more closed ended questions. For example, to the open-ended question “How did Billy have an influence on your symptoms?” a participant would respond “I don’t know” and be unable to elaborate further even with open ended prompting (“Tell me more”). Close ended questions were then used to try to tease out more information, such as questioning if Billy directly influenced their pain level or if something else may have contributed to their pain.

All interviews were transcribed by me from an audio file within a week of the original interview. I conducted a follow up visit to review and help flesh out any additional data with the participant. The follow up was not consistent among all participants due to symptom issues and end of life.

Data Analysis

Quantitative Analysis. Demographic data were analyzed. The non-parametric sign test (a statistical test that calculated the likelihood of the repetition of the data without any underlying assumptions) was performed using Excel (Moore, McCabe, & Craig, 2010). A non-parametric test was used because consistent scoring and a normal distribution could not be assumed with the subjective scoring of the ESASr. Before analysis began it was noted that it would be difficult, but not impossible, to achieve statistically significant results with a confidence interval of 95% due to the small sample size (Moore, McCabe, & Craig, 2010).

Qualitative Analysis. The interviews were read over multiple times and words that distracted from the flow of the participant's story, including the interviewer's questions, were deleted so that only the key elements remained. The remaining content, referred to as a core story (Emden, 1998), was then read multiple times to determine if the words that were removed altered the participant's recounted experience. Various components of the interviews including the pacing and tone of the stories were important to consider (Emden, 1998; Sandelowski, 1991).

The individual core stories were examined for their plots, subplots, and threads. Plots consisted of beginnings, middles, and ends (Emden, 1998; Sandelowski, 1991). The plot is the progression of the story which drives the story and the experiences of the storyteller forward (Bleakley, 2005). Subplots are secondary plots (Emden, 1998). The threads are the underlying components or messages that drive the plot and subplot. Narrative threads convey the individual meaning behind the participant's story, such as empowerment, transformation, and hope (Bell, 2003).

Having multiple participant data and plots to study allowed for a comparison of threads among the stories. Ideally, the participant's core story would be reviewed with the participant for verification (Emden, 1998). With the population studied, however, this was not always possible due to the end of life. I was able to conduct follow up verification with 50% of the participants.

Once the plots, subplots, and threads were identified in the core stories, the narrative would often be in a format that was chaotic and not sequential (Bleakley, 2005). Polkinghorne (1995) discussed the importance of emplotting the narratives to show a linear progression of cause and effect. This involved chronologically re-organizing a core

story to focus the events, actions, and outcomes of a narrative (Polkinghorne, 1991). The individual core stories of my participants are in Appendix J. Participant 4's core story has a clear example of emplotting; It began at the beginning of her diagnosis ("it started in..."), and then clearly linked to a flashback ("it took me back..."), and then to her present circumstance ("I won't be going home..."). On review of the original transcript, most of this data were shared by the participant at the end of the interview and not in the same sequential order.

Analysis Integration

The quantitative and qualitative responses were analyzed separately and then integrated (Creswell et al., 2008; Morse & Niehaus, 2009). The analysis integration revealed several threads from the individual core stories that came together to form a collective core narrative. The ESASr results complemented understanding the severity of the symptoms the participants were experiencing. On analysis, the findings were limited due to the small sample size and the finite opportunities to re-interview the participants before end of life. Despite this, the data collected were powerful and revealed the participants' experiences.

To supplement the limited data, the existing literature was carefully examined to support (or potentially refute) this study's findings. Pragmatic utility, a research method for analyzing complex psychosocial concepts, uses literature as data when examining partially mature concepts or concepts that are not fully developed and communicated (Morse, 2017). Grounded Theory routinely uses literature as data to round out categories (Glaser & Holton, 2004). Freeman (2004) notes that "data are everywhere" (pp. 63) with

narrative analysis. After careful consideration, the incorporation of literature as data rounded out this study's findings. On review of these sources (Freeman, 2004; Glaser & Holton, 2004; Morse, 2017), it was critical to introduce literature into the findings only after the collective core story was developed from participant data to reduce the risk of bias. Throughout the process of sampling the literature, it was important to periodically examine that each conclusion was complemented and not derived from only one source (i.e., the study findings or the literature). It was necessary to be aware of the literature's author, methodology, research question, and its pertinence to this study's findings (Freeman, 2004). The integration of the findings is explored in Chapter IV.

Rigor

The trustworthiness criteria of Lincoln and Guba (1985) were used throughout the study. They entailed credibility (truth value), transferability (applicability), dependability (reliability), and confirmability (neutrality). Before beginning the study, I compiled a list of my potential biases and assumptions (Appendix K). After completing the drafts of individual core stories, I once again reviewed Appendix K and compared my findings with it. Any similarities I discovered I returned to the original audio transcript to ensure that the story was authentic to the data and not to my own bias.

Credibility was the truth value of the findings. To help achieve this, I had to be careful that participants did not tailor their answers to what they thought I wanted to hear and instead divulged their true current realities. This was difficult in some situations. For example, a participant was quickly tiring during the interview and was only able to answer yes or no questions. On reflection, I realized I had been leading the participant,

and the participant may have responded yes due to exhaustion. For these situations, I quickly changed my data collection to multiple short interviews instead of one or two long interviews. When possible, a follow up interview provided validation of the data collected. Any feedback from the participants were included in the findings. This resulted in a stronger authenticity of the data to convey exactly what the individual participant experienced. If this follow up interview was not possible the previous recorded interviews were played again. Quotations were used in the findings as they were the rawest and purest form of data that were free from researcher interpretation (Weaver, 2012).

Prolonged engagement (Lincoln & Guba, 1985) with each participant over the two-week (or longer depending on data collection) period yielded more credible results. I also kept three journals: first, a day-to-day journal (Appendix F); second, a personal journal that included field notes; and third, a methodological journal. The day-to-day journal helped to organize each participant's progress throughout the study. The personal journal allowed me to record observations and conversations that occurred throughout the study in addition to data collection. The methodological journal provided a description of any changes that occurred within the study design and why a change was made. These journals helped with credibility because my regular maintenance of them provided accuracy with their details rather than relying on memory alone after the study was completed. The data obtained from the qualitative component were audio-taped for reviewing multiple times.

To enhance transferability, I provided a thorough description of the background rationale, participants, and context of the study. The description of this study ensured that

other researchers could make their own judgments regarding the possibility of applying horse therapy intervention to their population or setting.

The description of the study also helped to establish dependability or consistency. Keeping journals, including self-critical accounts, and being forthcoming with details of the study would allow an independent audit to occur. Copies of all anonymized transcriptions were relayed to my thesis committee. For dependability as well as educational purposes, I conducted all the post visit ESASr and interview data collections independently.

Confirmability was strengthened by ensuring the findings were sourced from the study participants and not elsewhere (e.g., researcher bias). During the analyzing process, the audio transcripts were read multiple times. As the individual core stories were drafted, they were re-read from the viewpoint of the storyteller to identify accuracy. For example, one participant demonstrated transference of symptoms. When I initially wrote his core story, I worded it as “I transferred my hip pain onto Billy.” Upon re-reading, I realized that section was written with me as the storyteller and not the participant. I reviewed the original audio transcript and rewrote the core story correctly with the participant’s wording so that I was presenting the *participant’s* core story (i.e., “I could be concerned about Billy’s hip [pain] because of my own hip”). Utilizing a mixed method design allowed triangulation (verifying specific data from another source) of some, but not all, data. Confirmability and credibility can be strengthened by triangulation (Lincoln and Guba, 1985). Follow up interviews with available participants to review the interpretations of the data helped to determine that the researcher’s interpretation was consistent with the storyteller.

Ethical considerations. Ethical considerations included constant respect of the vulnerable population throughout the study process from the information letter and consent to the intervention, data collection, data analysis, and results (Canadian Institutes of Health Research, Natural Sciences and Engineering Research Council of Canada, and Social Sciences and Humanities Research Council of Canada, 2014). The participants had a right to have their confidential information protected, and no harm was expected to come to participants from this study. Any participant was free to leave the study at any time without penalty.

Only I had access to the signed consent forms and to the list identifying the anonymized transcripts which were under lock and key and password encrypted. All data were anonymized and transcribed by me with Express Scribe Transcription Software. Recorded audio was stored on my password encrypted computer and then erased from the portable Sony recorder device. Copies of the anonymized data had been viewed by me, Dr. Weaver, and Dr. McNiven. The only other copies were the printed anonymized copies that four participants requested during the consent process. Each participant received their copy only. When presenting the findings, I anonymized the various core stories by number (e.g., participant 1, participant 2). I also ensured that any identifying information was removed from the anonymized data (e.g., University of New Brunswick would be changed to [university]).

Summary of Method

To understand the research question, what are the experiences of palliative inpatients with horse therapy, a relativist ontological approach was necessary. The

utilization of a mixed-methods design allowed the use of both quantitative and qualitative research methods to enrich the study process giving more depth to the findings than one research method alone. The quantitative method supported this focus but would not have been able to answer the research question. Therefore, narrative inquiry was the dominant research method to maintain the focus on the experience.

Chapter IV: Findings

The following findings were derived using the mixed method design described in Chapter III to include demographic, quantitative, and qualitative data. Data sources included interviews, ESASr collections, medical charts, observations, individual core stories, and finally literature sampling.

The descriptive statistics (Appendix L) portrayed that all participants spoke English fluently, with 33.3% having English as a second language. The average completed education was Grade 12 (50% of participants). Occupations were teacher, homemaker, tourist operator, banker, skilled laborer, and farmer. Occupation was not included in Appendix L as each participant had a different occupation and therefore could not be compared. All participants identified as Caucasian (European descent) except for one (Acadian). Of the six participants, four were female, two were male. The average age was 68.5 years with a range of 58-82 years. Of the six participants, five experienced a form of cancer as a primary diagnosis; the remaining participant was diagnosed with end stage respiratory illness. Due to their disease progression, only 33.3% (two participants) had the energy for a hands-on visit with Billy. The primary focus was on interventions done from the participants' beds. Those interventions consisted of Billy visiting at the participants' windows and participants viewing Billy's video. The demographic data conveyed every participant as having previous experiences with animals; 100% were exposed to small animals and 50% to large agricultural animals as well. All participants indicated that their previous exposure to animals had a positive influence on their lives. Some participants referred to their animals as family members.

Each raw ESASr score was rated on a scale of zero to ten, a zero rating indicated the participant was not experiencing the symptom and a ten rating indicated the worst possible experience of the symptom. Bar charts from Excel of each symptom gave a visual representation of the raw ESASr scoring and indicated that none of the symptoms had a zero rating for all participants (See Appendix M). Conversely, none of the participants had a zero rating for all symptoms.

The ESASr symptom scores of each participant were compared pre- and post-therapy, so each participant acted as his/her own comparison. Sign tests (Moore, McCabe, & Craig, 2010) were completed in Excel for each of the ESASr symptoms (Appendix N). The dependent variable for each test was the symptom; the independent variable was time. The pre-horse therapy collection occurred prior to the fourth visit by staff, the post-horse therapy collection occurred after the fourth visit by me. Before the sign test was performed, the raw ESASr data were transformed into zero, negative, or positive results. Zero indicated no difference between the pre- and post- ESASr collections and therefore was not analyzed in the sign tests. The positive and negative variables focused on whether improvement or decline was noted, therefore the subjective score of the ESASr was not a factor in the calculation. As shown in Appendix N, none of the ESASr symptom sign tests were statistically significant. For example, the p value of 0.25 for the sign test on appetite indicated no significant change between the pre- and post- ESASr collection times.

The collective core narrative *living in the moment* is made up of the threads of QOL, fatigue, distraction, reminiscing, and identifying with Billy. The threads came

through clearly from the data collected, especially from the participant core stories found in Appendix J.

Living in the Moment

The participants knew their conditions were terminal and that they may never return to their homes again. Living in the moment enabled them to connect with their intrinsic value as individuals living with life-threatening chronic illnesses. Their decline in health from diagnosis to admission to the PPCC ranged from quick (months) to prolonged (years); however, once admitted to the PPCC their health declined rapidly from quick (days) to prolonged (months). With such a quick decline, there was less time for them to get affairs in order and to understand the illness trajectory. Participants did not have the time or energy to focus on things over which they had no control. They struggled to manage the concurrent competing symptoms such as tiredness, pain, shortness of breath, poor appetite, and diminished well-being. Time spent with loved ones, the settling of estate affairs, and the acceptance of the inevitable end of life were deemed critical tasks. There was no choice but to take life one day at a time as the future could no longer be anticipated.

At one time participants based their self-worth on occupation, relationships with family, hobbies, and/or volunteering activities. Things that were once taken for granted were now considered “gifts from God” such as seeing another sunrise, being able to get out of bed in the morning, and being relatively symptom free. Participants’ priorities changed so they could maintain value and self-worth. For example, a participant noted how difficult it was to lose his independence with daily tasks such as mobility, toileting,

or dressing. Before he was admitted it could take him up to an hour and a half to get dressed in the morning, but he did it. On PPCC admission the participant changed his perception of himself. He now granted himself permission to let staff help with dressing so that his energy could be better spent on other things, like visiting with family. For all participants additional emphasis was placed on family as they realized their children and grandchildren would continue to live on without their direct influence. Participants questioned if they had done enough to prepare their loved ones for what was to come after their death.

Living in the moment had participants focused on maintaining independence despite their concurrent symptoms. It was difficult to be dependent on others, regardless if they were family or staff. Tasks that were accomplished independently in the past could no longer be done alone. One participant who refused to accept his loss of independence was frustrated by his limitations. To him, it was unacceptable to call for a nurse every time he wanted to move from the desk to the window. He requested a small portable commode with a cushioned cover that he used as a chair to wheel around the room. The PPCC policy was that the brakes were to be applied when in use, however, he could not independently release the brakes safely. It took a lot of effort for him to negotiate with the staff to be permitted to use the commode chair more independently.

Participating in horse therapy did not give back independence or change the upcoming end of life for the participants. However, it did provide interactions that helped to retain personal value and a sharing of that value with others. For example, the two participants who did hands-on visits with Billy enjoyed him lowering his head and gently nudging them to encourage more patting from them. These participants perceived a sense

of empowerment by controlling the type of affection they provided to Billy. Billy's visits influenced living in the moment by providing a sense of anticipation, excitement, brightness, novelty, joy, and control. It encouraged participants to experience the moment without a focus on their current health status and symptoms. Participants and family members considered the horse visits as "something above and beyond" what they expected at a palliative care unit, expressing both surprise and delight at the opportunity.

The collective core narrative of living in the moment reflects Beng Seng et al., (2016), Dobkin (2008) and Romotzky's et al. (2018) findings on mindfulness. Mindfulness is a specific way of non-judgmental thinking that allows one to be purposely present in the moment. It is an established form of meditation long practiced by Buddhists (Kabat-Zinn 2003) that is essential to providing patient care (Ricci-Allegra, 2018). Mindfulness is useful with various populations such as those seeking stress reduction, hospice and palliative care clients, and health care professionals (Kabat-Zinn, 1982; Kabat-Zinn, 2003; Ricci-Allegra, 2018; Shapiro, Astin, Bishop, & Cordova, 2005).

The use of mindfulness allows for an interruption of common worries, stresses, and negative thoughts that accompany health concerns (Beng Seng et al., 2016). It is easy for people to experience each day thinking of either the past or the future, unaware of what is happening in the present (Bartley & Teasdale, 2011). Mindfulness can lead to participants reappraising their lives to make the best of their situation so they can continue living in the moment (Moyal, Henik, & Anholt, 2014). In fact, Romotzky et al. (2018) found that using strategies like mindfulness allowed palliative care clients to reappraise themselves and completely change previous defining behaviours (e.g., now being willing to express their feelings and to accept help).

Living in the Moment Threads

Underpinning the collective core narrative of living in the moment were the threads of QOL, fatigue, distraction, reminiscence, and identification with Billy. These threads became clear after analyzing the data transcripts multiple times and reassembling the plots, sub-plots, and threads into an individual core story (Appendix J).

Quality of life. Participants reported good QOL to mean being symptom free, maintaining independence, enjoying family and friends (socializing), and appreciating the things that come with each day such as waking up in the morning. Participants focused on taking each day “as you can,” one day at a time. Only one participant described QOL in terms of quantity, expressing a desire to “live longer.” Another participant indirectly described living longer with “a new set of lungs;” however, he was referring to obtaining relief from his distressing symptom of shortness of breath (eight out of ten on the ESASr shortness of breath scale was “normal” for him). Appendix O provides an overview of participants’ definitions of QOL and how Billy’s visits influenced their QOL.

Participants actively tried to enjoy each day as it was. They were aware they may not wake up the next day. A participant who had a strong connection with Alcoholics Anonymous quoted that we only have today because tomorrow never comes. Billy’s visits helped to “brighten” and bring “a little joy” to the day, providing stimulation and a brief respite from the symptoms the participants were experiencing.

Participants’ ESASr responses indicated a wide variety of symptoms and severities (Appendix M). For every participant, tiredness and drowsiness were experienced. Five participants experienced shortness of breath and diminished sense of well-being. Four participants experienced pain and decreased sense of appetite. Anxiety

and nausea were experienced by three participants, and depression by two participants. The ratings of these symptoms varied from zero to ten. Sign tests (Appendix N) indicated the variations between data collections were not significantly impacted by Billy's visits. One participant experienced a range of all nine symptoms on the ESASr at the same time which impacted her QOL. Medications helped to manage symptoms. For example, three participants experienced nausea (a range of two – six out of ten on the ESASr) during data collection. Every participant had anti-emetic medications available to them, ordered routinely or as needed. All three participants indicated the medications decreased their nausea.

The combination of multiple symptoms and the perception of their value and self-worth contributed to the sense of QOL. An interviewee of Romotzky et al. (2008) stated that “palliative care is not about prolonging life but about maintaining and enhancing the quality of life” (p. 4). Lane, Ramadurai, and Simonetti (2018) described improved quality of life by addressing the physical, psychosocial, and spiritual needs of the palliative care patient.

McCaffrey, Bradley, Ratcliffe, and Currow (2016) further break QOL down into emotional, health care, preparatory, personal autonomy, physical, social, spiritual, and cognitive aspects. The definitions of QOL from the participants in this study supported the majority, but not all, of these aspects. Emotional aspects were clearly expressed as feelings of depression, anxiety, and well-being on the ESASr. The uncertainty of each day and wondering if “my sickness is staying the way it is for the time being” was voiced. Health care and preparatory aspects were managed by the staff “treat[ing] you very well in here” and staff “do[ing] everything for me,” including assistance with the

organization of estate and funeral affairs. Personal autonomy was very important. All participants desired to retain independence for as long as they could. Physical aspects were identified by this study's participants as a desire to be "relatively pain free." Social and spiritual were clearly expressed as "spend[ing] time with family and friends," and the feel[ing] that each new day is a "gift from God." The remaining aspect of cognition as identified by MacCaffrey et al. (2016) was not highlighted by this study's participants as none of the participants experienced impaired cognition.

Fatigue. Surviving with an end-stage illness at the PPCC was tiring; living to see another day was an accomplishment! To conserve energy, participants often used silence and chose their words carefully. For example, one participant sharply declared "next question!" instead of spending additional energy elaborating on his present answer. Fatigue was evident with tiredness and drowsiness rated on a range of three to eight out of ten on the ESASr (Appendix M; Figures 3 and 4).

When participants became over-tired, they anticipated having a "bad day" tomorrow. A bad day included an increase in symptoms such as shortness of breath and/or so much tiredness that they could "sleep for a day or two." They would stay in bed with little to no energy. Billy's visits provided participants with a sense of calmness, relaxation, and energy. The participants who went outside to pet Billy did not feel that Billy added to their fatigue; in fact, one participant declared Billy gave her a brief "burst of energy." Those who stayed in their rooms felt Billy did not contribute to their tiredness, instead they attributed their tiredness to their diseases and medications.

Matzo and Soltani (2014) identified how distressing the symptom of fatigue was to both the palliative care client and the client's family. Sometimes fatigue was the

symptom that prompted the initial visit to the physician before diagnosis occurred (Murray, 2016). Fatigue can feel infinite and can be a side effect of medications or from other symptoms (Ferrell & Coyle, 2010; Matzo & Soltani, 2014). Considering the distress of fatigue when implementing interventions, Billy's visits were beneficial because participants were able to take part without getting out of bed if so desired.

Opportunity for distraction. Billy's visit provided a distraction and gave participants meaningful experiences. Billy provided a break from the everyday routine and concerns that the participants lived with. After all, "who would expect to have a horse visit them?" The distraction included social interactions with Billy, the horse handlers, the staff, and family and friends which helped create a positive experience. One participant "could almost feel" Billy through the window glass, and she did not have prior experience with horses! Another participant could "tell from Billy's face" how much he was "really really (sic) enjoying" the handlers brushing him. The brushing of Billy's neck, either by the participants or the handlers, evoked smiles from everyone involved. The distraction of Billy coming to the unit elicited spontaneous waving and stimulated participants to converse with the handlers about Billy's history and care.

The most meaningful aspect of Billy's visits to participants was being able to share the experience with family and friends. A sense of anticipation was created earlier in the day when staff declared "Billy's coming today!" Participants arranged for family and friends to be present when Billy was there. Grandchildren's faces lit up when they saw Billy. Family and friends took pictures to preserve the moment and to be able to embrace that special memory later. In fact, a picture taken of Billy giving a participant a

“kiss” at her window on her 63rd birthday was shared with every family member on and off PEI.

Distraction as a therapy is well documented in the literature and can be used in multiple populations such as pediatric (Birmie et al., 2014; Boucher, Downing, & Shemilt, 2014), psychiatry (Moyal, Henik, & Anholt, 2014; Strauss, Ossenfort, & Whearty, 2016), and palliative (Kumar & Jim, 2010; Parsons & Anderson, 2009). Wolgast and Lundh (2017) explored the positive (acceptance) and negative (avoidance) effects of distraction. Positive distraction is supported by this study’s findings that to some extent most participants accepted their current situations. The socialization that came about from the distraction was welcomed by every participant. Evidence of negative distraction was shown with one participant who had not fully accepted where he was with his diagnosis. As soon as the distraction was over, his focus would negatively return to his symptoms or his limited independence.

Positive reminiscence. Seeing Billy brought forth pleasant memories of caring for previous animals considered “like family.” These unique past participant-animal relationships included dogs, cats, rabbits, foxes, and livestock. The memories of caring for these animals were positive feelings of love and/or satisfaction. As a young girl, one participant saw a foal being born and had loved horses ever since. Seeing Billy took her back to when she was growing up on a farm. She fondly relived a memory of a horse taking an apple from her hand. For another participant, a pet dog named Baby was a true companion. Baby would know when to snuggle up “right close” to comfort her when she was upset. This gave her a sense of value, self-worth, and love because Baby

demonstrated care and concern for her well-being. Nurturing an orphaned fox provided one participant with a sense of satisfaction.

The love, connection, and satisfaction from having a pet is supported by Fine and Beck (2015), Tottle (2018), and While (2017). When done safely, reminiscence is therapeutic to the older adult population. There are negative memories that can be damaging to the individual who is reminiscing, but with proper preparation those memories can still be therapeutic (Barron, Davies, & Wiggins, 2008). For example, reminiscing during animal therapy could lead to distressing memories of being afraid of horses or being attacked by a dog. That did not occur in this study. Only positive memories were expressed.

Reminiscing is a proven therapy for stimulating feelings of purpose, meaning, and belonging (Barron et al., 2008; Dobson, 2016; Scott & Kaylor, 2009). Dobson (2016) described a program at a Nova Scotia hospital that utilized tactile stimulation kits for reminiscing. For example, a bank teller fingering coins may bring forth fond memories of a different time. It allowed the individual to be seen as the person prior to the development of illness. Scott and Kaylor (2009) identified how important it was for health care professionals to see beyond their clients' presentation in the clinical setting to create rapport and a better understanding of their clients.

Identification with the therapy horse Billy. Participants living with chronic illnesses receiving palliative care services want to be seen as individuals instead of their illnesses. “When I’m around people they see all the scars, whereas Billy just sees me... [Billy] doesn’t let my condition affect how he sees me. It makes me feel fine.” Billy making a “face” or quickening his step to reach participants faster was perceived by the

participants as Billy recognizing them. Billy saw them as they were in that point in time and he wanted to acknowledge them.

This is congruent with Haylock and Cantril's (2006) finding that participants appreciated the focus being on them as individuals rather than people with cancer. Loss of identity is a documented phenomenon either individually (Vickers, 2012) or as a family unit (Pederson & Revenson, 2012). Gillies and Johnston (2004) noted that an individual's sense of identity could be affected in multiple ways such as cancer presenting physical challenges (e.g., surgery) and dementia presenting cognitive challenges (the memory processes of the individual being affected). An illness could make an individual forget their past self/role, presenting a need for that individual to redefine who they are now (Vickers, 2012). In the absence of illness, even the process of aging can bring losses that affect an individual's identity and role (Gillies & Johnston, 2004). An animal that accepted individuals as they were at that point in time without their active involvement or interpretation presents a powerful moment.

In this study some participants identified with Billy by using him to either express their feelings or to transfer their feelings. For example, one participant used Billy to express how he viewed himself – “what's that idiot doing on [the] other side of the window” with an oxygen tube “stuck up his nose.” This participant was limited initially in his mobility; then as his lungs deteriorated, he became dependent on oxygen. Loss of self-worth, identity, and independence were evident in his description of how Billy would see him. A second participant would routinely ask how Billy was doing. He was concerned if Billy had a sore hip or back. Initially this participant denied having similar

pain; however, on reflection the participant acknowledged that he was asking about symptoms he himself had experienced.

Summary of Findings

The collective core narrative “living in the moment” emerged from the individual experiences of six participants living with chronic terminal illnesses on a palliative care unit. Living in the moment enabled the participants to be mindful and experience every opportunity available that they deemed appropriate. As the participants’ circumstances changed, so did their priorities in life and their perceptions of themselves. Living in the moment allowed them to re-prioritize and change what was, and was not, important.

The threads of QOL, fatigue, distraction, reminiscence, and identification with Billy contributed unique insights into the participants’ experiences. The participants wanted to be seen, heard, and recognized as individuals. It was easy for them to be viewed by others as their illness, symptom, or environment and not as individuals with intrinsic worth and value. Time was important and in short supply due to fatigue and competing symptoms. Billy’s visits helped to distract participants from their fatigue and other symptoms while providing socialization opportunities. The visits brought a sense of excitement and provided meaningful experiences for both the participants and their loved ones. These findings led into the implications of how they could be applied to nursing.

Chapter V: Implications

This study has far-reaching implications for theory, practice, future research, and novice researcher growth. The collective core narrative of “living in the moment” derived from this study allows for a unique insight into the experience of the palliative care inpatient.

Theoretical Implications

The collective core narrative of living in the moment was vital to the participants. They revealed their experiences of living each day with chronic, terminal illnesses in an institutionalized setting. They identified how difficult it was for them to lose their independence, and spoke of their past experiences as if to give meaning and value to who they were as individuals. Most participants accepted their impending end of life but that did not make it easier. Coping with the end of life was difficult and taking each day one day at a time had a common meaning for the participants. “You only got today, you don’t get tomorrow... when tomorrow comes it’s always today.” Horse therapy provided a small comfort to the participants by helping them to live in the moment or to be mindful of the present.

These findings agree with Katherine Kolcaba’s (2001) mid-range Theory of Comfort which has three forms (relief, ease, and transcendence) within physical, psychospiritual, environmental, and social contexts. Comfort in the form of relief means a specific need is met, comfort in the form of ease means being calm and/or content with that need, and comfort in the form of transcendence is the individual rising above that specific need (Kolcaba, 2001). Theory of Comfort is not only when the goal is to cure the

disease but also to live successfully with the disease until the end of life (Hua, 2017; Krinsky, Murillo, & Johnson, 2014; Vendlinski & Kolcaba, 1997).

Applying Kolcaba's theory to the study's sample of individuals receiving palliative services at the PPCC would guide appropriate care interventions. For example, fatigue was difficult to relieve but strategies were employed to attempt relief (e.g., medications, frequent rests, pacing activities). The participants learned to accept their symptoms indicating a form of ease (e.g., participants expected to feel a little better after a nap). When a participant saw Billy at the PPCC, she received a "burst of energy" that overrode her usual practice of napping at that time (i.e., she transcended for a brief time, forgetting her symptom of fatigue). The participant waited until after Billy's visit to nap.

Multiple contexts from the Theory of Caring (Kolcaba, 2001; Kolcaba & DiMarco, 2005; Kolcaba, Tilton, & Drouin, 2006) are relevant to the participants. For example, physical context is reflected by participants' reports of pain and shortness of breath. Participants' knowledge of upcoming end of life conveys psychospiritual context. Environmental and social contexts are revealed by living in a palliative care unit with the knowledge of not going home again and the importance participants placed on spending time with family and friends.

Practical Implications

The experiences of the palliative care participants were powerful and contributed to existing evidence outlining the vulnerable palliative population. Loss of value, self-worth, and independence were common at a palliative or hospice unit and were stressful for everyone involved (Geisler, 2004; Skeath et al., 2015). This study's findings

promoted social interactions which reflected the work of Geisler (2004). She found that companion animals led to the “facilitation of communication, grief, and life review” (p. 287) for those approaching the end of life. Billy stimulated interest with the participants even when he was not present, which is consistent with Lander and Graham-Pole’s (2008) similar finding with a cat.

Enhancing companionship with loved ones was a positive outcome of AAT also reported by Ockleford and Berryman (2001). The feelings of anticipation, excitement, and joy that the horse therapy brought to the participants provided a positive diversion. In fact, the distraction of the therapy extended beyond the actual horse visits as shown by participants discussing Billy’s past and future visits with staff, family, and friends.

This study provided a protocol for the initiation of horse therapy in the inpatient palliative setting (Appendix E). The horse therapy visits took place over a two-week period with two types of visits per week (i.e., Billy visiting and viewing a video of Billy). Billy’s visits involved interacting with each participant at their windows for a few minutes until the participant lost interest (range of two to ten minutes, depending on the participant). Billy then went to the front door of the PPCC and those participants who wanted to participate in hands-on therapy could do so. Prior to initiating this horse therapy protocol consideration would be needed regarding practice location, population, and appropriate intervention strategies.

Living in the moment gives meaning to chronically ill persons receiving palliative care services. Horse therapy that was provided in this study assisted with living in the moment. Against the backdrop of pain, fatigue, and uncertainty of illness and institutional care, beautiful moments of interacting with the therapy horse helped create varying levels

of independence, control, and wonder. Such interactions allowed time to practice stillness and calmness so the fatigue level was not greatly impacted. This was important as the palliative care population already experienced the debilitating symptom of fatigue (Skeath et al., 2015). Except for the optional hands-on therapy, the type of therapy provided was minimally invasive. Participants could watch Billy through their windows and not have to leave their beds to participate, so they were able to enjoy but still conserve their energy to spend as needed.

The possibility of Billy visiting during the active dying phase of an individual was identified in the proposal stages of this study. By working with the staff and the layout of the building, we were easily able to avoid specific individuals and family members who the staff deemed should not be approached. An unexpected experience that cannot be reported as a finding was the impact Billy's visit had on a non-participant's family. The family believed that Billy arriving was their loved one's message of good-bye. Each family member actively sought out Billy after the death of their loved one to spend time with him. As we were getting ready to leave the PPCC, staff shared the family's conversation about what it meant to them to have Billy there, that in the future when they see a horse they will think positively of their loved one.

Non-maleficence to participants. As specific strategies were put into place from the beginning of the study harm did not come to the participants. The environment and each individual participant were evaluated continuously for safety. To help achieve this, the study protocol (Appendix E) mandated at least one participant advocate and two horse handlers per individual session. The PPCC was an invaluable resource. The staff were consistently prepared to support if a participant experienced a mental health or

symptom management crisis due to the horse therapy. This greatly reduced the risk of a negative outcome. Hand sanitizers and public washrooms were available allowing hand hygiene before and after hands-on therapy. Hands-on therapy occurred at the front door under a concrete canopy that protected the participants from the sun. Participants were appropriately dressed when outside (e.g., feet covered, jackets, blankets). In the literature reviewed, negative associations were not identified with AAT. Matuszek (2010) noted the omission of negative effects in the body of evidence and questioned if that was because there were no negative effects or if bias was involved. I can confidently state that this study had only positive or indifferent effects. If negative effects had occurred, then the research study would have been stopped immediately.

Future Research Implications

Erickson et al. (2016), Hakanson et al. (2009) and Lanning and Krenek (2013) suggest that to truly understand the outcome of an animal therapy intervention multiple research methods needed to be implemented. Mixed-methods as described by Morse and Niehaus (2009) allowed the use of two methods even if all the assumptions of one method were not met. In this study, the complementary quantitative method could not have been analyzed alone due to the violation of quantitative paradigmatic assumptions such as a large sample size and objectivity. To help mediate this, a standardized tool (ESASr) already in place at the PPCC was used in the study. The dominant qualitative (narrative) method allowed the participants to be in control of their story. The researcher collaborated with participants in eliciting their experiences and sharing the emergent core stories with the participants. The participants were able to shape their stories as to what

they needed to express. Due to the fatigue identified by the participants, the data collected were minimal despite combining two methods (ESASr and narrative). Literature sampling was used as data to support the findings from this study. If only one single method of research had been used, then the amount of data collected would have been even further limited.

In future practice it would be beneficial if a design could be developed so that all participants could touch the horse from their bed. Considerations for this would need to focus on safety. One possible option might be a specially trained miniature horse that could come to the bedside, with considerations to hygiene.

It was noted throughout the study that the hands-on horse therapy was utilized by staff, family, and friends more so than the participants. Caregivers and loved ones of this population need to be included in further research to help widen the knowledge of their experiences as a caregiver/loved one of a palliative care client. Interviewing family members would have expanded on the meaning of horse therapy to both them and the participant. Family members know the participants intimately, so they would notice subtle clues that an outsider may not recognize. They would also be able to share further benefits from the visits, such as the impact of Billy's visits on the participants outside of Billy's visit times.

Consideration should be given to the timing of the study in relationship to the illness progression. As a participant approaches the end of life energy is compromised resulting in limited interview responses from open ended questions. This predisposes to the risk that the researcher will use closed end questions or lead the participant thus co-

opting the participant's story and data collected. Therefore, studies with this population should be conducted sooner in the illness trajectory.

If a client is admitted to a palliative unit for the last time with the knowledge that going home is not an option, additional interventions need to be available to support the client. As described in Chapter IV, one participant noted that the horse was not as important to him as the fact that the horse therapy provided a distraction from his circumstances. This was consistent with Parsons and Anderson's (2009) key theme of distraction. An exploratory study could identify additional interventions outside of traditional care that would be beneficial.

Several participants who spoke about their interactions with past animals and pets indicated a sadness that they would not get to know Billy as intimately as their pets. The possibility of forming an attachment to Billy may have been overwhelming for a potential participant who may not have the energy or desire to do so. Conversely, the possibility of losing an attachment may have been the reason why some potential participants declined to participate. This was not confirmed from this study as the most cited reason for declining participation was fatigue.

The video visits of Billy showed the same ten-minute video of Billy twice, approximately a week apart. It provided education about how Billy lived in his own environment. The rationale for the two video visits was to stimulate further conversation or insights; however, this did not occur to the depth that was hoped. As one participant said, "I can see videos anytime." Instead, breaking this video down into two different five-minute videos may have been more beneficial. An alternative way of providing the video intervention could be to videotape Billy's visits with each participant, and then

watch that video with the participant, hopefully stimulating further discussion. As all participants preferred Billy's visits over the video visits, the perceived benefits of a video visit should be carefully weighed prior to its future use.

Researcher Growth Implications

Continuous reflection through journaling allowed me to critically evaluate and improve my work. I learned how important it was to (a) broaden my thinking to anticipate changes and (b) be prepared to address changes appropriately so that it did not distract from the rigor of the research. It was important to be present as a researcher rather than a nurse. Journaling helped me to recognize outside influences, assumptions, and potential threats to my study. It guided me to field note data using alternative sources such as observation. As a researcher everything was considered carefully before being used. Through journaling I collected data that, at the time, I would not have recognized as useful and could have mistakenly dismissed. Throughout the study process I kept journals because I was advised to by my thesis committee and it was recommended by Lincoln and Guba (1985). It was not until I arranged and analyzed the results that I realized just how important journaling was. As Richards and Morse (2007) identified, it was important to reflect in a quiet place shortly after interaction with the study to write up field notes. Detailed journaling enhanced trustworthiness by clarifying the researcher's thoughts through reflection (Watt, 2007). It allowed for biases, perceptions, and expectations of the emerging data to be clearly written down and be identified (Lincoln & Guba, 1985). For example, one of the participants actively used gestures and facial expressions as communication tools throughout the interviews in conjunction with her low monotone

voice. Reviewing my journal notes allowed me to acknowledge the need to insert [gestures] or proper punctuation (e.g., exclamation point) into the transcript to convey the participant's emotional expression of their story.

When beginning this study, I wrote down a list of potential assumptions with horse therapy (Appendix K). In hindsight, it would have been beneficial to have compiled a list of my assumptions on the palliative care population as well. Documentation of my assumptions prior to starting this study would have clearly shown the growth in my understanding of the palliative care inpatient. For example, I was surprised at the acuity and quick rate of inpatient turnover despite my experience as a community palliative nurse. Another assumption was that symptom management would be the primary focus of the participants. However, throughout the study I realized time was the most precious commodity to them. Symptom management was still important but spending your time with the participants meant so much to them.

An intervention span of longer than two weeks may have improved credibility through prolonged engagement (Lincoln & Guba, 1985). However, meeting the two-week intervention period and then data collection was a challenge with the participants in this study. The high acuity of the participants indicated to me that they were well managed in the community up until they required admission to the PPCC. Therefore, it would be appropriate to start interventions earlier in the illness process. Any delay might mean that the inpatient's death would occur before interventions could be implemented. If Billy could be introduced in the community first, he would bring a source of familiarity to the client at the PPCC.

I conducted ‘mock data collections’ to prepare myself for collecting data from active participants. Despite this preparation, I found it difficult to obtain data with open ended questions to a population that tired quickly. It led to using leading questions or having too much of the narrative being conducted by the interviewer, which would lead to bias. There was also a concern of participants saying what they thought I wanted to hear so that the session would be done faster. Due to this initial finding, I changed my approach to several short interviews depending on the participant. The data collection process allowed me to appreciate the relationship that occurred between the researcher and the participant. From this relationship I was able to interpret some of the conclusions based on tone, observations, and conversation. In a future study additional questions to the interview would be beneficial, such as “If Billy could talk, what would he say to you? What would Billy say to your loved ones? What does Billy contribute to your care team?”

Flexibility and modification were needed during the study despite my attempt to have every component addressed in the proposal stage. It was essential to maintain strong relationships with my thesis committee. On gathering the ESASr assessments for my first data collection I learned they were completed on evenings, not on days as previously thought. I had already completed the therapy visit that day and had three participants who had completed their fourth visit ready for data collection. Upon review with Dr. Weaver and Dr. McNiven, we decided we would allow a full 24 hours between the two ESASr assessments.

The PPCC was a busy unit which made access to the medical records and participants a challenge at times. I often had to reschedule access at the last minute.

Participants may have family drop in unexpectedly or they may have been symptomatic. The primary symptom for cancelling visits was tiredness. I did note that no one declined seeing Billy when he was visiting. It was not difficult for participants to take part in Billy's visits (at worst it was a shorter visit) and no one refused his visits outright.

The thesis committee was an invaluable source of support. In future I would arrange for more in-person contact rather than long distance communication primarily through email and phone. It would be ideal to conduct the study on a full-time basis.

Limitations

A point to be considered is that PEI is an agricultural province with a rich equine industry. A palliative care client from another area may not view horse therapy as appropriate. The inability to attract clients over a longer length of time was a limitation due to the acuity of the participants. The purpose of the two-week intervention period was to allow for consistency of every participant to experience the therapy. However, most participants died either before or shortly after the two-week intervention period. In hindsight, initiating this type of therapy earlier in the disease process would have been more beneficial.

Another limitation was the criteria for the participants to take part in the study. During the study time-frame all PPCC inpatients could speak English and all inpatients who had manageable symptoms were cognitively intact, so these criteria were met. The criterion for participants to have manageable symptoms so that they could engage in the intervention and data collection was the primary limitation. Due to the acuity of the

inpatients, PPCC staff deemed several inpatients as inappropriate to participate due to the active symptoms of the inpatient.

Conclusion

This study explored the experiences of the inpatient palliative care population with horse therapy. It revealed snapshots of the individual experiences of the participants. Threads of quality of life, fatigue, distraction, reminiscence, and identification with Billy led to the collective core narrative of living in the moment. Feelings of anticipation, excitement, and joy were expressed as were transferring perceptions and symptoms onto Billy. This study's findings depicted that horse therapy may be a potential way for clients receiving palliative care services to express their concerns. The findings provided some empirical evidence in the form of core stories and ESASr scores that conveyed horse therapy as a positive intervention in the PPCC setting. The protocol developed as this study's intervention could be adapted for other horse therapy interventions, such as with family members and palliative care staff.

References

- Angoules, A. G., Koukoulas, D., Balakatounis, K., Kapari, I., & Matsouki, E. (2015). A review of efficacy of hippotherapy for the treatment of musculoskeletal disorders. *British Journal of Medicine and Medical Research*, 8(4), 289-297. doi: 10.9734/BJMMR/2015/17023
- Ansari, S., Panhwar, A. H., & Mahesar, G. A. (2016). Mixed methods research: Ontological, epistemological and methodological underpinnings. *ARIEL An International Research Journal of Language and Literature*, 27, 133-141.
- Barron, S., Davies, S. P., & Wiggins, R. D. (2008). Social integration, a sense of belonging and the Cenotaph Service: Old soldiers reminisce about Remembrance. *Aging and Mental Health*, 12(4), 509-516. doi: 10.1080/13607860802224268
- Bartley, T., & Teasdale, J. (2011). *Mindfulness-based cognitive therapy for cancer*. Hoboken: John Wiley & Sons.
- Bear-Lehman, J. (2002). A word about qualitative research. *Journal of Hand Therapy*, 15(1), 85-86.
- Bell, A. (2003). A narrative approach to research. *Canadian Journal of Environmental Education*, 8, 95-110.
- Best, M., Aldrige, L., Butow, P., Olver, I., Price, M., & Webster, F. (2015). Treatment of holistic suffering in cancer: A systematic literature review. *Palliative Medicine*, 29(10), 885-898. doi: 10.1177/0269216315581538

- Birnie, K. A., Noel, M., Parker, J. A., Chambers, C. T., Uman, L. S., Kisely, S. R., & McGrath, P. T. (2014). Systematic review and meta-analysis of distraction and hypnosis for needle-related pain and distress in children and adolescents. *Journal of Pediatric Psychology, 39*(8), 783-808. doi: 10.1093/jpepsy/jsu029
- Bleakley, A. (2005) Stories as data, data as stories: Making sense of narrative inquiry in clinical education. *Medical Education, 39*, 534-540. doi: 10.1111/j.1365-2929.2005.02126.x
- Boucher, S., Downing, J., & Shemilt, R. (2014). The role of play in children's palliative care. *Children, 1*, 302-317. doi: 10.3390/children1030302
- Bunnin, N., & Jiyuan, Y. (Eds.). (2004). *The Blackwell Dictionary of Western Philosophy*. [E-book Blackwell Publishing Online]. Retrieved from <http://www.blackwellreference.com.proxy.hil.unb.ca/subscriber/tocnode.html?id=g9781405106795_chunk_g978140510679516_ss1-38>
- Bruera, E., Kuehn, N., Miller, M. J., Selmser, P., & Macmillan, K. (1991). The Edmonton symptom assessment system (ESAS): A simple method for the assessment of palliative care patients. *Journal of Palliative Care, 7*, 6-9.
- Canadian Cancer Society. (2016). Right to care: Palliative care to all Canadians. Retrieved from <https://www.cancer.ca/~media/cancer.ca/CW/get%20involved/take%20action/Palliativecare-report-2016-EN.pdf?la=en>

- Canadian Institutes of Health Research, Natural Sciences and Engineering Research Council of Canada, & Social Sciences and Humanities Research Council of Canada. (2014). Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans. Ottawa, CA: Interagency Secretariat on Research Ethics.
- Cerulli, C., Minganti, C., De Santis, C., Tranchita, E., Quaranta, F., & Parisi, A. (2014). Therapeutic horseback riding in breast cancer survivors: A pilot study. *Journal of Alternative and Complementary Medicine*, 20(8), 623-629. doi: 10.1089/acm.2014.0061
- Chur-Hansen, A., Zambrano, S. C., & Crawford, G. B. (2014). Furry and feathered family members – A critical review of their role in palliative care. *American Journal of Hospice and Palliative Medicine*, 31(6), 672-677. doi: 10.1177/1049909113497084
- Clandinin, D. J. (2006). Narrative inquiry: A methodology for studying lived experience. *Research Studies in Music Education*, 27(1), 44-54. doi: 10.1177/1321103X060270010301
- Clandinin, D. J., & Huber, J. (2010). Narrative inquiry. In B. McGraw, E. Baker, & P. P. Peterson (Eds.), *International encyclopedia of education* (3rd ed.). New York, NY: Elsevier.
- Cohen-Mansfield, J., Libin, A., & Marx, M. S. (2007). Nonpharmacological treatment of agitation: A controlled trial of systematic individualized intervention. *Journal of Gerontology*, 62A(8), 908-916.

- Cole, K., Gawlinski, A., Steers, N., & Kotlerman, J. (2007). Animal-assisted therapy in patients hospitalized with heart failure. *American Journal of Critical Care, 16*(6), 575-588.
- Creagan, E., Bauer, B., Thomley, B., & Borg, J. (2015). Animal-assisted therapy at mayo clinic: The time is now. *Complementary Therapies in Clinical Practice, 21*, 101-104. doi: 10.1016/j.ctcp.2015.03.003
- Cumella, E. J., Lutter, C. B., Smith Osborne, A. & Kally, Z. (2014). Equine therapy in the treatment of female eating disorder. *Scientific Online Publishing Transactions on Psychology, 1*(1), 13-21.
- Creswell, J. W., Plano Clark, V. L., Gutmann, M. L., & Hanson, W. E. (2008). Advanced mixed methods research designs. In V. L. Plano Clark, & J. W. Creswell (Ed.), *The mixed methods reader* (pp. 161-196). Thousand Oaks, CA: Sage.
- D'Arcy, Y. (2011). "Paws" to provide comfort, relieve pain. *Nursing, 41*(4), 67-68. doi: 10.1097/01.NURSE.0000395305.83786.93
- Dabelko-Schoeny, H., Phillips, G., Darrough, E., DeAnna, S., Jarden, M., Johnson, D., & Lorch, G. (2014). Equine-assisted intervention for people with dementia. *Anthrozoos, 27*(1), 141-155. doi: 10.2752/175303714X13837396326611
- Daiute, C., & Lightfoot, C. (2004). Theory and craft in narrative inquiry. In C. Daiute, and C. Lightfoot (Eds.), *Narrative analysis: Studying the development of individuals in society*. (pp. vii-xviii). Thousand Oaks, CA: Sage.

- Doane, G., & Varcoe, C. (2012). Knowledge translation in everyday nursing: From evidence-based to inquiry-based practice. In P. G. Reed, & N. B. Shearer (Eds.), *Perspectives on nursing theory*, (6th ed., pp. 82-92). Philadelphia, PA: Wolters Kluwer Health/Lippincott Williams & Wilkins.
- Dobkin, P. L. (2008). Mindfulness-based stress reduction: What processes are at work? *Complementary Therapies in Clinical Practice*, *14*, 8-16.
doi: 10.1016/j.ctcp.2007.09.004
- Dobson, S. (2016, June 3). A reason to reminisce; in case you missed it in Senior Living Mental. Chronicle Herald. Retrieved from <https://login.proxy.hil.unb.ca/login?url=https://search.proquest.com/docview/1793757356?accountid=14611>
- Duffy, M. (2007). Narrative inquiry: The method. In P. L. Munhall (Ed.), *Nursing research: A qualitative perspective*, (4th ed.). (pp 401-421). Sudbury, MA: Jones and Barlett.
- Dumont, S., Jacobs, P., Turcotte, V., Turcotte, S., & Johnston, G. (2014). Distribution and sharing of palliative care costs in rural areas of Canada. *Journal of Palliative Care*, *30*(2), 90-98.
- Edwards, N. E., & Beck, A. M. (2002). Animal-assisted therapy and nutrition in Alzheimer's disease. *Western Journal of Nursing Research*, *24*(6), 697-712. doi: 10.1177/019394502236642
- Emden, C. (1998). Conducting a narrative analysis. *Collegian*, *5*, 34-39. doi: 10.1016/S1322-7696(08)60299-1

- Engelman, S. (2013). Palliative care and use of animal-assisted therapy. *Omega*, 67(1-2), 63-67. doi: 10.2190/OM.67.1-2.g
- Erickson, D. L., Fisher, D., Woelk, B., Buckner, W., & Ashley, C. (2016). A mixed methods study of telepathic interspecies communication with therapeutic riding horses and their recovering wounded veteran partners. *NeuroQuantology*, 14(2), 404-426. doi: 10.14704/nq.2016.14.2.953
- Espeland, M., Brunner, R., Hogan, P., Rapp, S., Coker, L., Legault, C., ... & Resnick, S. (2010). Long-term effects of conjugated equine estrogen therapies on domain-specific cognitive function: Results from the women's health initiative study of cognitive aging extension. *Journal of the American Geriatrics Society*, 58, 1263-1271. doi: 10.1111/j.1532-5415.2010.02953.x
- Falk, H. & Wijk, H. (2008). Natural activity: An explorative study of the interplay between cage- birds and older people in a Swedish hospital setting. *International Journal of Older People Nursing*, 3, 22-28.
- Fine, A. (Ed.). (2000). *Handbook on animal-assisted therapy: Theoretical foundations and guidelines for practice*. San Diego, CA: Academic.
- Fine, A. H., & Beck, A. M. (2015). Understanding our kinship with animals: Input for health care professionals interested in the human-animal bond. In A. Fine's (Ed.), *Handbook on animal-assisted therapy: Foundations and guidelines for animal-assisted interventions* (4th ed., pp. 3-10). Waltham, MA: Elsevier.
- Ferrell, B. R., & Coyle, N. (2010). *Oxford textbook of palliative nursing*. (3rd ed.). New York, NY: Oxford University Press.

- Freeman, M. (2004). Data are everywhere: Narrative criticism in the literature of experience. In C. Daiute, and C. Lightfoot (Eds.), *Narrative analysis: Studying the development of individuals in society*. (pp. 63-81). Thousand Oaks, CA: Sage.
- Geisler, A. (2004). Companion animals in palliative care: Stories from the bedside. *American Journal of Hospice*, 21(4), 285-288.
- Gillies, B., & Johnston, G. (2004). Identity loss and maintenance: Commonality of experience in cancer and dementia. *European Journal of Cancer Care*, 13, 436-442.
- Glaser, B., & Holton, J. (2004). Remodeling grounded theory. *Forum: Qualitative Social Research*, 5(2). doi: <http://dx.doi.org/10.17169/fqs-5.2.607>
- Grinker, R. (2001). My father's analysis with Sigmund Freud. *The Annual of Psychoanalysis*, 29, 35-50.
- Hakanson, M., Moller, M. Lindstrom, I., & Mattsson, B. (2009). The horse as the healer – a study of riding in patients with back pain. *Journal of Bodywork and Movement Therapies*, 13, 43-52. doi: 10.1016/j.jbmt.2007.06.002
- Hales, S. (Ed.). (2011). *A companion to relativism*. Malden, MA: Wiley-Blackwell.
- Hall, P., & Malpus, Z. (2000). Pets as therapy: Effects on social interactions in long-stay psychiatry. *British Journal of Nursing*, 9(21), 2220-2225.
- Hallberg, L. (2018). *The clinical practice of equine-assisted therapy: Including horses in human healthcare*. New York, NY: Routledge.
- Haylock, P., & Cantril, C. (2006). Healing with horses: Fostering recovery from cancer with horses as therapists. *Explore*, 2(3), 264-268.

- Holloway, I., & Wheeler, S. (2013). *Qualitative research in nursing and healthcare* (3rd ed.). Retrieved from <http://site.ebrary.com.proxy.hil.unb.ca/lib/unblib/reader.action?docID=10660551>
- Homnick, D., Henning, K., Swain, C., & Homnick, T. (2013). Effect of therapeutic horseback riding on balance in community-dwelling older adults with balance deficits. *Journal of Alternative and Complementary Medicine, 19*(7), 622-626. doi: 10.1089/acm.2012.0642
- Horowitz, S. (2010). Animal-assisted therapy for inpatients: Taping the unique healing power of the human-animal bond. *Alternative and Complementary Therapies, 16*(6), 339-343. doi: 10.1089/act.2010.16603
- Hua, S. (2017). Application of Kolcaba's Comfort Theory to the management of a patient with hepatocellular carcinoma. *Singapore Nursing Journal, 44*(1), 16-23.
- Hui, D., & Bruera, E. (2017). The Edmonton symptom assessment system 25 years later: Past, present, and future developments. *Journal of Pain and Symptom Management, 53*(3), 630-643. doi: <http://dx.doi.org/10.1016/j.jpainsymman.2016.10.370>
- Jegatheesan, B. (2015). Influence of cultural and religious factors on attitudes toward animals. In A. Fine's (Ed.), *Handbook on animal-assisted therapy: Foundations and guidelines for animal-assisted interventions* (4th ed., pp. 37-41). Waltham, MA: Elsevier.
- Johansen, S. G. (2008). Equine facilitated psychotherapy therapy in mood disorders. *Journal of Affective Disorders, 107*, 122.

- Johnson, R. A., Albright, D. L., Marzolf, J. R., Bibbo, J. L., Yaglom, H. D., Crowder, S. M, ... Harms, N. (2018). Effects of therapeutic horseback riding on post-traumatic stress disorder in military veterans. *Military Medical Research*, 5(3), 1-13. doi: 10.1186/s40779-018-0149-6
- Johnson, R. A., Meadows, R. L., Haubner, J. S., & Sevedge, K. (2008). Animal-assisted activity among patients with cancer: Effects on mood, fatigue, self-perceived health, and sense of coherence. *Oncology Nursing Forum*, 35(2), 225-232. doi: 10.1188/08.ONF.225-232
- Kabat-Zinn, J. (1982). An outpatient program in behavioral medicine for chronic pain patients based on the practice of mindfulness meditation: Theoretical considerations and preliminary results. *General Hospital Psychiatry*, 4, 33-47. doi: [http://dx.doi.org/10.1016/0163-8343\(82\)90026-3](http://dx.doi.org/10.1016/0163-8343(82)90026-3)
- Kabat-Zinn, J. (2003). Mindfulness-based interventions in context: Past, present, and future. *Clinical Psychology: Science and Practice*, 10(2), 144-156. doi: 10.1093/clipsy/bpg016
- Kedanis, R. (2016). The miracle of Henry the hospice cat. *Holistic Nursing Practice*, 6, 379-381. doi: 10.1097/HNP.0000000000000179
- Kolcaba, K. (2001). Evolution of the mid-range theory of comfort for outcomes research. *Nursing Outlook*, 49(2), 86-92. doi: doi.org/10.1067/mno.2001.110268
- Kolcaba, K., & DiMarco, M. A. (2005). Comfort theory and its application to pediatric nursing. *Pediatric Nursing*, 31(3), 187-194.

- Kolcaba, K., Tilton, C., & Drouin, C. (2006). Comfort theory: A unifying framework to enhance the practice environment. *Journal of Nursing Administration, 36*(11), 538-544.
- Krause-Parello, C. A., Levy, C., Holman, E., & Kolassa, J. E. (2018). Effects of VA facility dog on hospitalized veterans seen by a palliative care psychologist: An innovative approach to impacting stress indicators. *American Journal of Hospice and Palliative Medicine, 35*(1), 5-14. doi: 10.1177/1049909116675571
- Krinsky, R., Murillo, I., & Johnson, J. (2014). A practical application of Katharine Kolcaba's Comfort Theory to cardiac patients. *Applied Nursing Research, 27*(2), 147-147. doi: 10.1016/j.apnr.2014.02.004
- Kumar, S. P., & Jim, A. (2010). Physical therapy in palliative care: From symptom control to quality of life: A critical review. *Indian Journal of Palliative Care, 16*(3): 138–146. doi: 10.4103/0973-1075.73670
- Kumasaka, T., Fujisawa, H., Karino, H., Masu, H., & Kataoka, M. (2016). Changes in moods of palliative care ward patients by interacting with trained therapy dog which is the first such dog stationed in a hospital in Japan and examination thereof. *International Medical Journal, 23*(3), 284-287.
- Kumasaka, T., Maus, H., Kataoka, M., & Numao, A. (2012). Changes in patient mood through animal-assisted activities in a palliative care unit. *International Medical Journal, 19*(4), 373-377.
- Lane, T., Ramadurai, D., & Simonetti, J. (2018, in press). Public awareness and perceptions of palliative and comfort care. *The American Journal of Medicine*. doi: <https://doi.org/10.1016/j.amjmed.2018.07.032>

- Lander, D. A., & Graham-Pole, J. R. (2008). Love medicine for the dying and their caregivers: The body of evidence. *Journal of Health Psychology, 13*(2), 201-212.
- Lanning, B., & Krenek, N. (2013). (Guest Editorial). Examining the effects of equine-assisted activities to help combat veterans improve quality of life. *Journal of Rehabilitation Research and Development, 50*(8), 7-13.
- Latella, D., & Abrams, B. N. (2015). The role of the equine in animal-assisted interactions. In A. Fine (Ed.), *Handbook on animal-assisted therapy: Foundations and guidelines for animal-assisted interventions* (4th ed., pp. 115-137). Waltham, MA: Elsevier.
- Lessick, M., Shinaver, R., Post, K., Rivera, J., & Lemon, B. (2004). Therapeutic horseback riding: Exploring this alternative therapy for women with disabilities. *Association of Women's Health, Obstetric and Neonatal Nurses, 8*(1), 46-53.
- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Beverly Hills, CA: Sage Publications.
- Lusk, C. (2007). The need for palliative/end-of-life care programs in LTC. *Canadian Nursing Home 18*(4), 9-15.
- Macauley, B. (2006). Animal-assisted therapy for persons with aphasia: A pilot study. *Journal of Rehabilitation Research and Development, 43*(3), 357-366. doi: 10.1682/JRRD.2005.01.0027
- MacDonald, J. M., & Barrett, D. (2015). Companion animals and well-being in palliative care nursing: A literature review. *Journal of Clinical Nursing, 25*, 300-310. doi: 10.1111/jocn.13022

- Marcus, D. (2013). The role of volunteer services at cancer centers. *Current Pain and Headache Reports*, 17, 376-381. doi: 10.1007/s11916-013-0376-1
- Marr, C., French, L., Thompson, D., Drum, L., Greening, G., Mormon, J., ... & Hughes, C. (2000). Animal-assisted therapy in psychiatric rehabilitation. *Anthrozoos*, 13(1), 43-47. doi: 10.2752/089279300786999950
- Martin-McDonald, K. (1999). Once upon a time... Narratives and research. *Contemporary Nurse*, 8(1), 221-226. doi: 10.5172/conu.1999.8.1.221
- Masini, A. (2010). Equine-assisted psychotherapy in clinical practice. *Journal of Psychosocial Nursing and Mental Health Services*, 48(10), 30-34.
- Matuszek, S. (2010). Animal-facilitated therapy in various patient populations: Systematic literature review. *Holistic Nursing Practice*, 24(4), 187-203.
- Matzo, M., & Soltani, C. (2014). Fatigue. In M. Matzo, & D. Witt Sherman's (Eds.), *Palliative care nursing: Quality care to the end of life* (4th Ed., p 589-625). New York, NY: Springer Publishing Co.
- Maujean, A., Pepping, C., & Kendall, E. (2015). A systematic review of randomized controlled trials of animal-assisted therapy on psychosocial outcomes. *Anthrozoos*, 28(1), 23-36. doi: 10.2752/089279315X14129350721812
- McCaffrey, N., Bradley, S., Ratcliffe, J., & Currow, D. C. (2016). What aspects of quality of life are important from palliative care patients' perspectives? A systematic review of qualitative research. *Journal of Pain and Symptom Management*, 52(2), 318-328. doi: doi.org/10.1016/j.jpainsymman.2016.02.012
- Moore, D. S., McCabe, G. P., & Craig, B. A. (2010). *Introduction to the practice of statistics* (7th Ed.). New York: W.H. Freeman.

- Morse, J. M. (2008). Approaches to qualitative-quantitative methodological triangulation. In V. L. Plano Clark & J. W. Creswell (Eds.), *The mixed methods reader* (pp. 151-158). Thousand Oaks, CA: Sage.
- Morse, J. (2017). *Analyzing and conceptualizing the theoretical foundations of nursing* (1st ed.). New York: Springer Publishing Company.
- Morse, J. M., & Niehaus, L. (2009). *Mixed method design: Principles and procedures*. Walnut Creek CA: Left Coast
- Moyal, N., Henik, A., & Anholt, G. E. (2014). Cognitive strategies to regulate emotion – current evidence and future directions. *Frontiers in Psychology, 4*, 1-4. doi: doi.org/10.3389/fpsyg.2013.01019
- Murray, K. (2016). *Essentials in hospice and palliative care: A practical resource for every nurse*. Victoria, BC: Life and Death Matters.
- Nathans-Barel, I., Feldman, P., Berger, B., Modai, I. & Silver, H. (2005). Animal-assisted therapy ameliorates anhedonia in schizophrenia patients: A controlled pilot study. *Psychotherapy and Psychosomatics, 74*(1), 31-35. doi: 10.1159/000082024
- Nakano, K., Sato, K., Katayama, H., & Miyashita, M. (2013). Living with pleasure in daily life at the end of life: Recommended care strategy for cancer patients from the perspective of physicians and nurses. *Palliative and Supportive Care, 11*, 405-413. doi: 10.1017/S1478951512000442
- Nekolaichuk, C., Watanabe, S., & Beaumont, C. (2008). The Edmonton symptom assessment system: A 15-year retrospective review of validation studies (1991-2006). *Palliative Medicine, 22*, 111-122. doi: 10.1177/0269216307087659
- Nightingale, F. (1861). *Notes on nursing for the laboring classes*. London: Harrison.

- Nurenberg, J. R., Schleifer, S. J., Shaffer, T. M., Yellin, M., Desai, P. J., Amin, R., ... & Montalvo, C. (2014). Animal-assisted therapy with chronic psychiatric inpatients: Equine-assisted psychotherapy and aggressive behavior. *Psychiatric Services*, 66(1), 80-86.
- Ockleford, E., & Berryman, J. (2001). Do companion animals have therapeutic value? *European Journal of Palliative Care*, 8(2), 75-78.
- O'Grady, P. (2002). *Relativism*. [E-book]. Retrieved from <http://web.a.ebscohost.com.proxy.hil.unb.ca/ehost/ebookviewer/ebook/ZTAwMHhuYV9fNDA5NzIwX19BTg2?sid=244f75c2-0820-4039-b189-d153603c48c1@sessionmgr4003&vid=0&format=EB&rid=1>
- Palys, T. (2008). Purposive sampling. In L. M. Given (Ed.) *The Sage Encyclopedia of Qualitative Research Methods*. (Vol.2). (pp. 697-698). Sage: Los Angeles.
- Pan, S., Gao, S., Zhou, S., Tang, M., Yu, Z., & Ko, K. (2012). New perspectives on complementary and alternative medicine: An overview and alternative therapy. *Alternative Therapies*, 18(4), 20-36.
- Parsons, S., & Anderson, C. (2009). The meaning of Friday afternoon tea for informal caregivers on a palliative care unit. *International Journal of Palliative Nursing*, 15(2), 74-78.
- Pederson, S., & Revenson, T. A. (2012). Parental illness, family functioning, and adolescent well-being: A family ecology framework to guide research. In I. Marini & M. Stebnicki's (Eds.), *The psychological and social impact of illness and disability*, (6th ed., pp. 249-271). New York, NY: Springer Publishing Company.

- Perry, A. G., Potter, P. A., & Ostendorf, W. R. (Eds.). (2018). Palliative Care. In *Clinical nursing skills and techniques* (9th ed., pp. 423-440). St. Louis, MI: Elsevier.
- Plano Clark, V., & Creswell, J. (2008). *The mixed methods reader*. Thousand Oaks, CA: Sage.
- Polkinghorne, D. E. (1991). Narrative and self-concept. *Journal of Narrative and Life History, 1*(2 & 3), 135–153.
- Polkinghorne, D. E. (1995). Narrative configuration in qualitative analysis. In: J. A. Hatch, & R. Wisniewski (Eds.), *Life history and narrative*. (pp. 5-24). London: Falmer.
- Polkinghorne, D. E. (1996). Transformative narratives: From victim to agentic life plots. *The American Journal of Occupational Therapy, 50*(4), 299-305.
- Reed, R., Ferrer, L., & Villegas, N. (2012). Natural healers: A review of animal assisted therapy and activities as complementary treatment for chronic conditions. *Revista Latino-Americana de Enfermagem, 20*(3), 612-618.
- Ricci-Allegra, P. (2018). Spiritual perspective, mindfulness, and spiritual care practice of hospice and palliative nurses. *Journal of Hospice and Palliative Nursing, 20*(2), 172-179. doi: 10.1097/NJH.0000000000000426
- Richards, L., & Morse, J. M. (2007). *Readme first for a user's guide to qualitative research*. Thousand Oaks: Sage Publications
- Richardson, L. A., & Jones, G. W. (2009). A review of the reliability and validity of the Edmonton symptom assessment system. *Current Oncology, 16*(1), 53-64.

- Richeson, N. (2003). Effects of animal-assisted therapy on agitated behaviors and social interactions of older adults with dementia. *American Journal of Alzheimer's Disease and Other Dementias*, 18(6), 353-358.
- Rocker, G., Downar, J., & Morrison, R. (2016). Palliative care for chronic illness: Driving change. *Canadian Medical Association Journal*, 188(17-18), 493-498. doi: 10.1503/cmaj.151454
- Romaniuk, M., Evans, J., & Kidd, C. (2018). Evaluation of an equine-assisted therapy program for veterans who identify as 'wounded, injured or ill' and their partners. *Plos One*, 13(9), 1-15. doi: doi.org/10.1371/journal.pone.0203943
- Romotzky, V., Strupp, J., Hayn, A., Ruffer, J. U., Grümmer, J., & Voltz, R. (2018). "All of a sudden, a lot less still makes it worthwhile to be alive:" Palliative care patients' views on life. *Palliative and Supportive Care*, 1-7. doi: doi.org/10.1017/S1478951518000081
- Rossetti, J., & King, C. (2010). Use of animal-assisted therapy with psychiatric patients: A literature review. *Journal of Psychosocial Nursing*, 48(11), 44-48.
- Rugari, S., Major, S., & Kennedy, A. (2013). A horse is a horse – and sometimes part of a clinical team, too. *American Nurse Today*, 8(9). Retrieved from <https://www.americannursetoday.com/a-horse-is-a-horse-and-sometimes-part-of-a-clinical-team-too/>
- Sandelowski, M. (1991). Telling stories: Narrative approaches in qualitative research. *Journal of Nursing Scholarship*, 23(3), 161-166.

- Schmitz, A., Beermann, M., MacKenzie, C., Fetz, K., & Shculz-Quach, C. (2017). Animal-assisted therapy at a university centre for palliative medicine – a qualitative content analysis of patient records. *BMC Palliative Care*, *16*(50). doi: 10.1186/s12904-017-0230-z
- Scott, K., & DeBrew, J. K. (2009). Helping older adults find meaning and purpose through storytelling. *Journal of Gerontological Nursing*, *35*(12), 38-43.
- Selby, A., & Smith-Osborne, A. (2013). A systematic review of effectiveness of complementary and adjunct therapies and interventions involving equines. *Health Psychology*, *32*(4), 418-432. doi: 10.1037/a0029188
- Seng Beng, T. Ahmad, F., Loong, L. C., Chin, L. E., Zainal, N. Z., Guan, N. G... & Chiong Meng, C. B. (2016). Distress reduction for palliative care patients and families with 5-minute mindful breathing: A pilot study. *American Journal of Hospice and Palliative Medicine*, *33*(6) 555-560. doi: 10.1177/1049909115569048
- Serpell, J. (2015). Animal-assisted interventions in historical perspective. In A. Fine's (Ed.), *Handbook on animal-assisted therapy: Foundations and guidelines for animal-assisted interventions* (4th ed., pp. 11-19). Waltham, MA: Elsevier.
- Shapiro, S.L., Astin, J.A., Bishop, S.R., & Cordova, M. (2005). Mindfulness-based stress reduction for health care professionals: Results from a randomized trial. *International Journal of Stress Management*, *12*(2), 164-176.
- Sharpe, H. (2014). Equine-facilitated counselling and women with eating disorders: Articulating bodily experience. *Canadian Journal of Counselling and Psychotherapy*, *48*(2), 127-152.

- Skeath, P., Jenkins, M. A., McCullough, A., Fine, A.H., & Berger, A. (2015). Increasing the effectiveness of palliative care through integrative modalities: Conceptualizing the roles of animal companions and animal-assisted interventions. In A. Fine's (Ed.), *Handbook on animal-assisted therapy: Foundations and guidelines for animal-assisted interventions* (4th ed., pp. 261-276). Waltham, MA: Elsevier.
- Shuler, P., Huebscher, R., & Hallock, J. (2001). Providing holistic health care for the elderly: Utilization of the Shuler nurse practitioner practice model. *Journal of the American Academy of Nurse Practitioners*, 13(7), 297-303.
- Smith, J. & Noble, H. (2014). Bias in research. *Evidence-Based Nursing*, 17(4), 100-101.
- Souter, M. A., & Miller, M. D. (2007). Do animal-assisted activities effectively treat depression? A meta-analysis. *Anthrozoos*, 20(2), 167-180. doi: 10.2752.175303707X207954
- Strauss, G. P., Ossenfort, K. L., & Whearty, K. M. (2016). Reappraisal and distraction emotion regulation strategies are associated with distinct patterns of visual attention and differing levels of cognitive demand. *Plos One*, 11(11), 1-18. doi: 10.1371/journal.pone.0162290
- Thomas, L., Lytle, M., & Dammann, B. (2016). *Transforming therapy through horses*. Santaquin, UT: EAGALA.
- Tottle, W. (2018). Dogs, mental health, and the ways they can help our minds. *Positive Health*, Nov2018(250), 6-6.
- Trotter, K. (Ed.). (2012). *Harnessing the power of equine assisted counseling: Adding animal assisted therapy to your practice*. New York, NY: Taylor & Francis.

- Usadi, E. J., & Levine, S. A. (2017). Why we don't ride: Equine assisted psychotherapy, military veterans and moral injury. *Journal of Trauma and Treatment*, 6(2), 374-379. doi: 10.4172/2167-1222.1000374
- Van Hyfte, G., Kozak, L., & Lepore, M. (2013). A survey of the use of complementary and alternative medicine in Illinois hospice and palliative care organizations. *American Journal of Hospice and Palliative Medicine* 31(5), 553-561.
- Vendlinski, S., & Kolcaba, K. Y. (1997). Comfort care: A framework for hospice nursing. *The American Journal of Hospice and Palliative Care*, 14(6), 271-276.
- Vermohlen, V., Schiller, P., Schickendantz, S., Drache, M., Hussack, S., Gerber-Grote, A., & Pohlau, D. (2018). Hippotherapy for patients with multiple sclerosis: A multicenter randomized controlled trial (MS-HIPPO). *Multiple Sclerosis Journal*, 24(10), 1375-1382. doi: 10.1177/1352458517721354
- Vickers, N. (2012). Narrative identity and illness. *Journal of Evaluation in Clinical Practice*, 18(5), 1070-1071. doi: doi.org/10.1111/j.1365-2753.2012.01919x
- Volicer, L., & Hurley, A. C. (2003). Management of behavioral symptoms in progressive degenerative dementias. *Journal of Gerontology*, 58A(9), 837-845.
- Warne, T., & McAndrew, S. (2010). Re-searching for therapy: the ethics of using what we are skilled in. *Journal of Psychiatric and Mental Health Nursing*, 17, 503-509. doi: 10.1111/j.1365-2850.2009.01545.x
- Watanabe, S. M., Nekolaichuk, C., Beaumont, C., Johnson, L., Myers, J., & Strasser, F. (2011). A multi-centre comparison of two numerical versions of the Edmonton symptom assessment system in palliative care patients. *Journal of Pain Symptom Management*, 41, 456-468.

- Watanabe, S. M., Nekolaichuk, C., & Beaumont, C. (2011). The Edmonton symptom assessment system, a proposed tool for distress screening in cancer patients: Development and refinement. *Psycho-oncology*, *21*, 977-983.
- Watt, D. (2007). On becoming a qualitative researcher: The value of reflexivity. *Qualitative Report*, *12*(1), 82-101.
- Weaver, K. (2012). Loving her into well-being one day at a time: Narratives of caring for daughters with eating disorders. *Open Journal of Nursing*, *2*, 406-419. doi: <http://dx.doi.org/10.4236/ojn.2012.24059>
- Wehofer, L., Goodson, N., & Shurtleff, T. (2013). Equine assisted activities and therapies: A case study of an older adult. *Physical and Occupational Therapy in Geriatrics*, *31*(1), 71- 87. doi: 10.3109/02703181.2013.766916
- While, A. (2017). Pet dogs as promoters of wellbeing. *British Journal of Community Nursing*, *22*(7), 332-336.
- Williams, E., & Jenkins, R. (2008). Dog visitation therapy in dementia care: A literature review. *Nursing Older People*, *20*(8), 31-35.
- Wilson, O., Avalos, G., & Dowling, M. (2016). Knowledge of palliative care and attitudes towards nursing the dying patient. *British Journal of Nursing*, *25*(11), 600-605.
- Winkle, M., Wilder, A., & Jackson, L. (2014). Dogs as pets, visitors, therapists and assistants. *Home Healthcare Nurse*, *32*(10), 589-595.

Wolgast, M., & Lundh, L. G. (2017). Is distraction an adaptive or maladaptive strategy for emotion regulation? A person-oriented approach. *Journal of Psychopathological Behavioral Assessment* 39, 117–127 doi: 10.1007/s10862-016-9570-x

World Health Organization. (2017). WHO definition of palliative care. Retrieved from <http://www.who.int/cancer/palliative/definition/en/>

Zimmerman, C., Swami, N., Krzyzanowska, M., Leighl, N., Rydall, A., Rodin, G.,... & Hannon, B. (2016). Perceptions of palliative care among patients with advanced cancer and their caregivers. *Canadian Medical Association Journal*, 188(10), 127-227. doi: 0.1503cmaj.151171

Appendix A

Table 1. *Literature Review Search Results*

	CINAHL	PubMed	Cochrane Library	Pro Quest
Initial Search Results using Palliative AND Animal Therap* OR Animal Activit*	N = 31,998	N = 295	N = 4,844	N = 5,804
Extensive search using "equine therapy" OR "horse therapy" OR "animal therapy" OR "animal assisted therapy" OR "animal assisted activity"; AND palliative OR hospice; NOT child OR pediatric	N = 10	N = 13	N = 2	N = 20
When available add on exclusion criteria of peer-reviewed, published in 2000 or later, English language	N = 9	N = 12	N = 1	N = 18
Review of articles that were applicable with adult populations	N = 8	N = 9	N = 1	N = 8
New Articles Since First Search	N = 0	N = 2	N = 0	N = 5
Removal of duplicates and results that did not have an aspect of palliative and animal therapy			N = 20	
Total Articles (including articles found through other means such as manual searching of references or open access articles)			N = 59	

Appendix B

Table 2. *Summary of the Literature Included in the Review*

Author (date)	1) Focus of Study/Research Question 2) Methodological Approach/Design 3) Results/Findings 4) Comments
Angoules et al. (2014)	1) Review of efficacy of hippotherapy for the treatment of musculoskeletal disorders 2) Medline/Pubmed database search between Jan 1990 and Oct 2014, total of ten articles reviewed. Three articles were on spinal cord injuries, two articles were on back and neck pain, four articles were on falls in the elderly, and one article with functional scoliosis that focused on children 3) All articles utilized riding therapy positively 4) The spinal cord injury and falls in the elderly articles provided evidence of riding therapy being therapeutic, authors cautioned that more research needed in all areas but especially with back and neck pain and functional scoliosis
Best et al. (2015)	1) Treatment of holistic suffering in cancer 2) Literature review used MEDLINE, EMBASE, the Cochrane Library and PsycINFO databases 3) Spiritual well-being, meaning, hope and benefit finding can be positively impacted by a variety of therapies 4) Authors identified animal therapy as having little or no evidence of efficacy as a therapy
Cerulli et al. (2014)	1) Evaluated the physiologic and psychological effects of an equine-assisted therapy protocol with female breast cancer survivors 2) Quantitative randomized treatment and control groups. Intervention group (ten women) had two one-hour riding sessions per week for 16 weeks (total of 32 sessions); control group (ten women) did not start any new physical program during the 16 weeks. Levene test for homogeneity and ANOVA used. Participants were all ambulatory and able to participate in riding therapy. Participants were under the supervision of facility staff during intervention sessions but once taught, participants were expected to do tasks associated with the intervention independently (e.g., brushing the horse)

- 3) Improvement in maximal oxygen consumption, decrease in fat mass percentage, increase in total body water percentage, increase in strength, and increase in quality of life for treatment group. No significant changes were found in the control group
- 4) None noted
- Chur-Hanson et al. (2014)
- 1) Drew attention to the role of animals for those who are nearing death
 - 2) Critical review of the literature from PubMed, PsycINFO, Medline, Scopus, and Google Scholar.
 - 3) Used canine and feline therapy. Some of the articles used client's pets, others a pet unfamiliar to the client. Six studies, one of which was an unpublished dissertation, provided weak empirical evidence on the role of AAT in palliative care and hospice
 - 4) Identified that existing literature is positive for using AAT in palliative care but it could not specify if the AAT intervention alone was responsible for the positive effects (authors noted the difficulty of conducting a randomized blind and control group study design with this population)
- Cohen-Mansfield et. al. (2007)
- 1) Examined the efficacy of a systematic algorithm for providing individualized, nonpharmacological interventions to reduce agitated behaviors in nursing home residents with dementia
 - 2) A quantitative placebo-controlled study using 10-day intervention of four hours during individual's greatest agitation time with interventions and times tailored to the individual participant. Participants were from 12 nursing home buildings in Maryland, 6 as treatment and 6 as controlled. In total 167 residents with dementia included.
 - 3) Statistically significant decrease in agitation and increase in pleasure and interest
 - 4) One of the interventions used was real, toy or robotic animal therapy but the authors did not go into detail regarding same
- Cole et al. (2007)
- 1) Study about effects of AAT on inpatients with heart failure
 - 2) 3 groups (dog group, volunteer-only group, and control group) in a randomized repeated measures experimental design. Variables were: BP, HR, pulmonary artery pressure, pulmonary capillary wedge pressure, right atrial pressure, cardiac index, systemic vascular resistance, epinephrine level, norepinephrine level, and state anxiety. Total n = 76 inpatients, age range 18-80 years, randomly assigned to the three groups (dog team n = 26, volunteer only n = 25, control n = 25).

3) The AAT dog group had statistically significant decreases in systolic pulmonary artery pressure during and after therapy, pulmonary capillary wedge pressure during and after therapy in comparison to the control group. The AAT dog team group had improved epinephrine/norepinephrine levels in comparison to the volunteer-only group. The AAT dog group also had the greatest decrease from the baseline in state anxiety when compared to the other two groups
4) None noted

Creagan et al.
(2015)

1) Summation of emerging literature of pet ownership and the impact of the companion animal on AAT
2) Authors' anecdotal experience in the Mayo Clinic involved canine therapy where vetted canines come in to see the clients (i.e., not the client's own pets)
3) Authors found that canines enhanced the client's lives, they identified the healing potential of the animal-human connection
4) Authors did not do a full review or study but did discuss limitations to AAT (animal related allergies, phobias, and stress). Authors also identified that the animal used had to be appropriate for the need (e.g., 125 lb golden retriever that routinely jumps would be contraindicated with a frail elderly client)

Cumella et al.
(2014)

1) Effects of equine therapy on the treatment of female eating disorders
2) Quantitative study used six linear regression models, n=72 female inpatients at an eating disorder facility, age range 18-49
3) Findings were statistically significant for the reduction of drive for thinness, impaired self-efficacy, interpersonal distrust, impulse dysregulation, depressed mood and anxiety
4) None noted

Dabelko-Schoeny
et al. (2014)

1) Study on equine assisted intervention for people with dementia
2) Convenience sample (n=16) from an adult day health center. A multi-component intervention was used that included grooming, painting on the horses with finger paint, and leading horses. Used a randomized pretest-posttest crossover design comparing the equine intervention and a control group receiving the center's usual treatment
3) The participants worked positively with the horses, were found to have lower levels of disruptive behaviours on days of horse therapy, and cortisol levels were elevated after the intervention in participants with the higher Mini Mental State Exam scores. There was an increase in physical activity for those in the horse therapy

- group (e.g., participants got up without assistance, offered to walk the horse without assistance)
- 4) Identified zoonotic risks for participants and strategies to overcome them, including thorough screening of potential participants. Authors also noted the reverse risk of horses acquiring MRSA from human contact
- D’Arcy (2011)
- 1) “Paws” to provide comfort and relieve pain
 - 2) 2-page article that looked at alternative therapies, particularly canine therapy
 - 3) Differentiated between AAA and AAT, identified risks associated with animal therapy and CDC guidelines
 - 4) Identified hospice as a population that can be served by animal therapy
- Edwards & Beck (2002)
- 1) Study on the effects that AAT can have on nutrition in those with Alzheimer’s disease
 - 2) Quantitative time-series design used a non-equivalent control group approach, data collected over 16 weeks, aquariums were used as the AAT. n = 62 (24 males) with a mean age of 80.1 years from three dementia-specific units in Indiana.
 - 3) Nutritional intake increased significantly over 6 weeks ($p < 0.001$) as did weight over 16 weeks ($p < 0.001$)
 - 4) None noted
- Engelman (2013)
- 1) Study on the effects of AAT in palliative care situations, also presented one anecdotal vignette
 - 2) Narrative reports and observations; phenomenological experiences. Over the course of one year, a total of 19 inpatients and outpatients were referred to a licensed psychologist and her small therapy dog. Observations of staff reactions were also done (number not specified)
 - 3) Decreased patient pain, increased patient quality of life and lowered staff stress levels
 - 4) Specific measuring tools not specified, and did not look at other factors that could have influenced variables
- Erickson et al. (2016)
- 1) Study on telepathic interspecies communication with therapeutic riding horses and partners
 - 2) Mixed methods study of seven participants with combat-related PTSD, the study involved participants, animal communicators, horses, and horse guardians. Both the horses (through the animal communicators) and the participants were asked questions
 - 3) A closeness in relationships between the participant and horses was noted with this study, furthering discussion between the

veterans and the communicators of what can be done to improve and build the human-horse relationship

4) A limitation was the varying interpretations from the animal communicators when changing the horse's responses into the human written language

Falk & Wijk
(2008)

1) Study on the interplay between cage-birds and older inpatients
2) exploratory observational design influenced by Grounded Theory. n = 35 (21 women), 65 years or older in an inpatient Swedish older adult unit

3) Three main themes were improved activity, mental experience (such as expression of emotions) and socializing

4) None noted

Geisler (2004)

1) Overview of companion animal associated medical research and patient stories that illustrated the role of companion animals in end-of-life care

2) Retrospective narrative, collection of 5 stories: one story was from the canine's owner, the other four were from the recipients of therapy from the canine

3) Animals helped clients cope with stress, prevented loneliness, decreased depression, improved activities of daily living, and increased social interactions. Companion animals were associated with decreased psychotropic medication usage and a reduction in health care costs

4) Canine and owner were praised by family, clients, and had even been invited to two of the clients' funerals. Common AAT concerns were health and hygiene with the animal, allergies, and poor behavior such as biting. Article referred to a website for guidelines on canines being used for therapy animals

Hakanson et al.
(2009)

1) Determined if riding therapy would reduce back pain, as well as identified other benefits from the therapy

2) Action research with both qualitative and quantitative data used (interview, Visual Analogue Scale, field notes and video recordings). 24 clients disabled in daily activity by back pain as well as other health problems participated

3) Participants' self-confidence, body control, and sleep improved. Better balance and gait, increased mobility, increased well-being, and less tension noted in field notes but not explicitly measured

4) All participants were already interested in learning to ride and alternative treatment methods so the generalisability was limited to others who were interested in this area

- Hall & Malpus (2000)
- 1) Examined the canine and long stay psychiatric inpatient effects while attempting to control for the effects of an extraneous variable (e.g., the dog handler)
 - 2) Quasi-experimental repeated measures design incorporating A-B-C-A reversal. Participants were 5 clients with chronic psychiatric illnesses
 - 3) The canine visitation influenced increased social interactions such as talking, smiling, and laughing
 - 4) The clients were aware of the study aims, potential bias. Also, the study did not consider staff reactions
- Haylock & Cantril (2006)
- 1) Review of a program “Healing with Horses,” a riding and horsemanship program designed by a mental health expert, equine experts, and a health care expert with experience in breast cancer
 - 2) Qualitative narrative. Number of participants not specified, female breast cancer survivors were paired with horses
 - 3) Positive sense of overcoming fears, undertaking a new challenge and learning experience, an increase in the ability to focus, learning to relax, the camaraderie of the other survivors
 - 4) Did not go into detail of data collection or analysis. Reviewed the program from two sites, both of which were similar but did have differences (e.g., English vs Western riding styles)
- Homnick et al. (2013)
- 1) Effect of an 8-week riding program on the measures of balance and quality of life in community-dwelling older adults with established balance deficits
 - 2) Quantitative pretest-post-test single group trial of a therapeutic riding program. Included 8-week observation period followed by an 8-week intervention period. n=9 adults (5 female, 4 male)
 - 3) No significant difference in measures of balance and quality of life in the first 8-week observation period. Significant improvement found in the balance score and quality of life from the 8-week intervention period. Also, no significant difference between the end of the intervention and the end of the study (16-24 weeks), suggestive that improvements may be sustained
 - 4) Study was done at and funded by the Cheff Therapeutic Riding Centre (some of the authors were also employed at Cheff). There was a disclosure statement in the article declaring that the authors had no conflict of interest
- Horowitz (2010)
- 1) Summary/review article of Animal-Assisted Intervention Programs, some examples were studies and others anecdotal evidence based on a program
 - 2) Summary/review of programs at Cedars-Sinai Medical Centre (canine), Mayo Clinic (canine), Edward Hospital & Health

Services (canine), Oregon Health & Science University
Doernhecher Children's Hospital (feline), New York-Presbyterian
Hospital/Columbia University Medical Centre (canine), and
optimal hospice care in California (canine)

3) Example from one client from hospice care was comfort, pain relief, and improved range of motion from petting the canine. Other discussed programs all had positive effects, no negative effects noted

4) Some of the evidence was anecdotal, and no equine assisted therapy was included

- Johansen (2008)
- 1) Equine facilitated psychotherapy in mood disorders
 - 2) Review
 - 3) Anecdotal evidence and non-controlled studies suggesting positive effects of equine assisted therapy on mood disorders.
 - 4) Identified weak scientific rigor, small sample sizes and lack of homogeneous populations
- Johnson et al. (2018)
- 1) Study on the effects of therapeutic horseback riding on PTSD in military veterans
 - 2) Randomized wait-list controlled design with repeated measures, n = 29 split into two groups (n = 15 to horse riding group; n = 14 to wait-listed control group). The wait-listed group waited six weeks before being able to participate in horse therapy
 - 3) After three weeks of horse therapy a statistically significant decrease in PTSD scores (measured by the PTSD Checklist-Military Version), after six weeks of horse therapy a statistically and clinically significant decrease in PTSD scores
 - 4) No statistically significant findings for coping self-efficacy, emotion regulation, and social and emotional loneliness
- Johnson et al. (2008)
- 1) Study to identify effect of AAA on mood, fatigue, self-perceived health and sense of coherence with cancer patients
 - 2) Longitudinal, randomized pretest/post-test design. Over a 4-week period of 12 interventions (3 sessions/week). 30 participants randomly assigned to one of three groups: AAA group (dog visits), human visit group, and quiet reading group. Ages were 18 or over, 28 were Caucasian and 2 African American
 - 3) No statistically significant findings were found, however all participants reported benefits to their interventions
 - 4) None noted
- Kedanis (2016)
- 1) Article that focused on author's experience of using a cat in hospice

- 2) Hospice in Pennsylvania, US started using a QAUL-E tool to evaluate the therapy provided by the cat; no results available in article from this tool
 - 3) Patients and visitors reported optimism and elation after visiting with cat
 - 4) None noted
- Krause-Parello et al. (2018)
- 1) Effects of a VA facility dog on hospitalized veterans seen by a palliative care psychologist and its impact on stress indicators
 - 2) Crossover repeated-measures study, n = 25. Data collection occurred before visit, after visit, and 30 min later. Experimental condition was a visit from dog, dog's handler and clinical psychologist, control condition was visit with clinical psychologist alone
 - 3) Significant decrease in cortisol (p = 0.007) and heart rate (p = 0.0046) for experimental condition, decrease in cortisol also present in control condition (p = 0.036 and p = 0.0119 respectively)
 - 4) None noted
- Kumasaka et al. (2016)
- 1) Changes in palliative patients' mood when interacting with a therapy dog in a Japanese hospital
 - 2) Quantitative study that used Lorish's face scale before and after participant's interaction with the therapy dog. 10 palliative inpatients
 - 3) Favourable reactions from patients toward the dog, e.g., an elevated and improved mood
 - 4) None noted
- Kumasaka et al. (2012)
- 1) Analyzed the mood of patients in palliative care during interactions at a facility with a policy of allowing animal assisted care
 - 2) Quantitative study that used Lorish's face scale from July 2006-July 2008. Canines, felines, and leporines (rabbits) used in study. 20 adult clients (age range 43-83, mean age 69)
 - 3) Patient mood increased through AAA
 - 4) Animals visited once a month, did not specify if repeat measures with same clients were used
- Lander & Graham-Pole (2008)
- 1) Discussed the role of love medicine for the dying and their caregivers (Native American)
 - 2) Appreciative inquiry. Example-based, one example of animal medicine called touch medicine used

- 3) A cat stimulated interest in the dying man even when the animal was not present; the caregiver was able to pet the cat and derive comfort from same
- 4) Love medicine involved expressing emotions and experiencing feelings, it utilized the senses and was described as a healing art

Lanning &
Krenek (2013)

- 1) Examined the effects of equine-assisted activities to help combat veterans improve quality of life
- 2) Mixed-method exploratory study. 13 veterans over a 24-week therapeutic riding intervention period
- 3) Theme that emerged the most was increased sociability; also, participants were stronger, more confident, and more open/accepting of others. Participants found horses to be non-judgemental, intuitive, good listeners, and compassionate. Quantitative data did not provide significant changes/results; but the qualitative data provided results directly related from the intervention, such as increased sociability
- 4) Veterans were strong and resilient and may not have been as forthcoming with symptoms such as depression

Lessick et al.
(2004)

- 1) Explored horseback riding therapy for women with disabilities
- 2) Exploratory article with exemplars (one not defined, another from the Vail Meadows Therapeutic Riding Center in Ohio, US). Discussed case studies and previous studies
- 3) Identified multiple physical, psychosocial and educational benefits of therapeutic riding. Identified multiple types of disabilities and conditions that could allow participation in therapeutic riding. Discussed intervention exercises with riding and contra-indications for therapeutic riding. Identified resources on therapeutic riding
- 4) Contraindications for riding included unhealed pressure sores, fragile bones, bleeding disorders, epilepsy uncontrolled by drugs, lack of desire by participant, and allergies

Macauley (2006)

- 1) Explored the effects and effectiveness of AAT (canine) for persons with aphasia
- 2) Baseline-treatment design with pre-, mid-, and post-testing. Sample consisted of 3 men with left-hemisphere strokes.
- 3) No significant differences between test results using the traditional speech language therapy vs animal assisted speech language therapy. The client-satisfaction questionnaire revealed that participants were more motivated, enjoyed the animal therapy, and found the atmosphere more conducive (lighter and less stressed) with animals than with traditional therapy alone

- 4) Indicated that qualitative data was needed for in-depth analysis of effectiveness
- MacDonald & Barrett (2015)
- 1) Evaluated and critiqued current knowledge regarding the role of animals in palliative care
 - 2) Literature review n = 4 critically appraised articles (limited number of literature found)
 - 3) The literature supported that animals had a positive impact on the patient experience (either companion or therapeutic)
 - 4) Highlighted the need for additional research into this area
- Marcus (2013)
- 1) Explored the role of volunteer services at cancer centres
 - 2) Summary/review article of complementary therapies (5 articles included AAT)
 - 3) Benefits of AAT were reduction in stress, mood disturbance, and loneliness; as well as relief in symptoms such as pain, poor sleep, and poor appetite
 - 4) Identified infection as a risk. Policies such as handwashing/hand sanitizer before and after touching canines as well as discouraging animal licking behavior helped reduce the risk of infection
- Marr et al. (2000)
- 1) Study on AAT in psychiatric rehabilitation
 - 2) 4 weeks of AAT that used dogs, rabbits, ferrets, and guinea pigs. Social Behavior Scale and monitoring used with two groups - an intervention group and a control group. ANOVA analysis. Control group n = 19, AAT group n = 18, age range 20-66.
 - 3) Initially no difference but by week four statistically significant findings that the AAT group were more interactive with others (p = 0.02) and smiling/displaying pleasure (p = 0.04)
 - 4) None noted
- Masini (2010)
- 1) Overview of equine assisted psychotherapy in clinical practice
 - 2) Review
 - 3) Equine therapy was an experiential approach that has learning/benefits during and after therapy
 - 4) Can be used with multiple populations
- Matuszek (2010)
- 1) Review of animal-facilitated therapy in various patient populations
 - 2) Literature review that used EBSCOhost, CINAHL, OhioLINK, Nursing and Allied health, and MEDLINE. Palliative care section had four references, two books, one website, and one article

- 3) Noted benefits of animal therapy were peace, joy, comfort, love, calming effect, combating loneliness, stimulating memories, and decreasing fatigue in clients
- 4) Identified that many articles do not mention if there were negative effects which raised the question: Were there no negative effects or were they omitted?
- Maujean et al. (2015)
- 1) Systematic review of RCTs of AAT on psychosocial outcomes
 - 2) Systematic review of 8 articles that met inclusion criteria out of the original search result of 180 potential articles. Of those 8 articles 7 were studies
 - 3) Review consistent with having a psychosocial benefit to various populations, including adults. An RCT design yielded significant results; however, the studies varied widely in their execution and were weak in some areas (e.g., presence of a control group, variation in measures used to measure outcomes)
 - 4) Identified the need for further RCT to support available data but noted the difficulties present with AAT and RCT, such as the issue of construct validity (being able to identify causation directly related to intervention)
- Nakano et al. (2013)
- 1) Looked at physician and nurse perspectives of what care strategies could be put in place to influence living and pleasure in daily life at the end of life in cancer patients
 - 2) Content analysis of semi-structured interviews
 - 3) 47% indicated AAT would be an appropriate strategy
 - 4) Briefly mentioned 2 strategies to provide AAT (1) to have a personal pet visit to spend time with patient and (2) allow therapy animals to visit patient rooms
- Nathans-Barel et al. (2005)
- 1) Effect of canine AAT on schizophrenia patients with anhedonia
 - 2) Pre-treatment and post-treatment testing that used an ANOVA analysis. 20 clients (8 female and 12 male) with at least two years of hospitalization
 - 3) “Hedonic tone” showed a significant difference posttreatment with increased motivation and increased leisure. Other areas in the measurements used showed no significant differences, either positive or negative
 - 4) Inclusion criteria of participants did not specify minimal levels of anhedonia
- Nurenberg et al. (2014)
- 1) Effect of animal assisted psychotherapy on behaviours of psychiatric inpatients
 - 2) RCT comparison of four groups over a period of 10 weekly sessions; equine assisted therapy group, canine therapy group,

enhanced social skills therapy group and regular hospital care group. n=90 psychiatric inpatients, 37% female, mean age 44
3) Equine assisted therapy group had decreased aggression and decreased violence-related incidents
4) None noted

Ockleford &
Berryman (2001)

1) To determine if companion animals have therapeutic value
2) Summary/review, had a section for palliative care that incorporated six articles
3) Animals provided stress reduction, humor, a sense of purpose, levity and pleasure, companionship, reduction of anxiety and despair, and improved morale
4) Noted that the palliative population can make obtaining a baseline difficult due to changing symptoms as well as client turnover

Pan et al. (2012)

1) Provided an overview of complementary and alternative therapies
2) Summary/review. Had a section on animal therapy that included both adult and pediatric populations. Reviewed historical use of animal therapy and then referenced 9 articles
3) Identified multiple types of animal therapy, from real, toy or robotic (or virtual) animals. Animal therapy offered motivational, educational, and/or recreational benefits in enhancing quality of life. Noted that older adults experienced an enhanced interest in themselves, others and the environment; and various types of 'animals' can decrease agitated behavior in dementia clients
4) Noted that the use of toy or robotic animals will negate the concerns regarding using real animals, and that preliminary research showed that toy or robotic animals are also effective

Reed et al. (2012)

1) Synthesized existing literature on the use of AAT as a complementary treatment among people living with chronic disease and applied it to the possible application for children with HIV.
2) Literature review that included both English and Spanish languages, databases used were Science Direct, Medline, Pubmed, PsychInfo, Ebsco, Cinahl and SAGE. 18 articles included that were original research articles, case studies, clinical trials, pilot studies or meta analyses. Articles included both adult and pediatric populations
3) Adult populations were found to have reduced anxiety, increased pleasure, increased coping, increased quality of life, and increased self-efficacy in response to AAT. Noted in one adult population article that there was no significant difference between

the positive results of a test group receiving AAT and the test group receiving human-assisted reading therapy; both yielded positive results. One article noted that the pain reduction in the pediatric population from AAT was comparable to if Tylenol had been administered

4) None noted

Richeson (2003)

1) Study on the effect of AAT on agitated behaviours and social interactions of older adults with dementia

2) n = 15 nursing home residents with dementia. The Cohen-Mansfield Agitation Inventory and the AAT Flow Sheet tools were used. Quasi-experimental time-series design, intervention (dog visit) occurred Mon-Fri for three weeks, three phases of data collection (baseline before intervention, post-test after intervention, follow up three weeks after intervention completed)

3) Found statistically significant decreases in agitation behaviours and a statistically significant increase in social interaction pretest to post-test

4) None noted

Romaniuk et al. (2018)

1) Evaluation of an equine-assisted therapy program for veterans who identified as 'wounded, injured or ill' and their partners

2) Non-controlled, within-subjects longitudinal design with a between-subjects analysis of an individual program (n = 25 veterans) and a couple's program (n = 22 veterans + significant other). Tools used were Depression Anxiety Stress Scale-21, PTSD Checklist for DMS-5, Oxford Happiness Questionnaire, and Quality of Life Enjoyment and Satisfaction Questionnaire-Short Form.

3) Paired sample t-tests showed significantly few psychological symptoms and significantly greater levels of happiness and quality of life. Reduced psychological symptoms (less symptoms of depression, stress and PTSD) were maintained at the three months follow up for the couples' group only

4) None noted

Rossetti & King (2010)

1) Explored the use of AAT in psychiatric clients

2) Literature review that used CINAHL, ProQuest, PsycINFO, MEDLINE, EBSCO, BIOSIS, PLoS, and ScienceDirect. 25 articles in review, did not specify inclusion or exclusion criteria. Articles contained both adult and pediatric populations

3) Notable improvement in participants' ability to communicate, interaction with others/socialization, and improvement in mood. Decrease noted in blood pressure, heart rate and anxiety.

Improved staff-patient interaction and humanizing atmosphere

present in an institutional setting. Participants were better able to control anger, had decreased depressive symptoms, and decreased feelings of distress. Noted an increase in self-awareness and staff morale as significant findings

4) Noted that when horses are used then participants needed to be well enough to go to the horse farm

Rugari et al.
(2013)

1) Article that helped nurses inform, refer, and support patients who may be candidates for equine therapy

2) Review of selected literature and interventions

3) Hippotherapy cited study with children, equine-facilitated psychotherapy that cited adult female survivors of abuse, brief introduction on the use of equine therapy

4) None noted

Schmitz et al.
(2017)

1) Looked at AAT at a university centre for palliative medicine

2) Qualitative content analysis of post-encounter protocols of AAT from June 2014-May 2015. Used canine therapy. n = 52 patients with a total of 84 AAT sessions (due to discharge or death only 18 patients received more than one AAT session)

3) AAT facilitated communication, positive emotional responses, enhanced physical relaxation or motivation for physical activation

4) None noted

Selby & Smith-
Osborne (2013)

1) Review of effectiveness of interventions involving equines

2) Systematic review. 14 articles met criteria for review, grey area (anecdotal evidence) also explored.

3) Of the 14 none were RCT, two reported moderate level of effectiveness, nine reported statistically significant positive effects, and three did not have statistically significant positive effects

4) None noted

Sharpe (2014)

1) Study on equine-facilitated counselling and women with eating disorders

2) Qualitative study that consisted of 6 weekday 2.5hr sessions that had both group and individual elements to the sessions. 14 women took part in the study, analysis focused on 5 women due to time constraints

3) Through verbal and nonverbal communication with their horses, the participants attuned to themselves and their worlds in different ways; this interrupted some of their habitual practices of disordered eating

4) None noted

- Shuler et al. (2001)
- 1) Presented an application of The Shuler Nurse Practitioner Practice Model with elderly patients using a gerontological holistic assessment
 - 2) Summary/review of selected articles as well as authors personal experiences
 - 3) Pet/animal therapy briefly discussed as an alternative therapy
 - 4) None noted
- Souter & Miller (2007)
- 1) Did AAA treat depression effectively?
 - 2) Meta-analysis of studies that had random assignment, intervention/control groups, use of AAA, self-report measure of depression, and enough information available on the study to analyze. 5 studies met the criteria (out of a potential 165)
 - 3) Results supported effectiveness of AAA in treating depression
 - 4) Highlighted design shortcomings in that most studies varied widely in execution which is why only 5 of 165 studies reviewed met this analysis's criteria
- Usadi & Levine (2017)
- 1) Review of an equine assisted psychotherapy program with veterans as to why the program did not involve riding therapy
 - 2) Review focused on Moral Injury – an existential/spiritual crisis that is the result of having been trained to override the instinctual aversion to the taking of human right that damages one's conscience and moral compass
 - 3) Notes the goal of psychotherapy is psychotherapy. Three reasons not to include physical riding 1) to learn how to ride required a great deal of instruction indicating the participant was doing it wrong, "The list of correctives is endless" (p. 376), 2) riding eliminated the eye-contact between horse and rider, and 3) horses are valued as an integral part of the therapy team in the program and one simply does not ride their therapists. Riding also involved catching the horse and the use of constrictive gear to ride – bits, bridles, saddles, and girths which further established the predator/prey relationship that the veteran has come home with, thereby increasing moral injury. Instead the use of psychotherapy with horses allows the horse to move freely and with liberty, which allows the participant and horse to have a more equal relationship
 - 4) None noted
- Van Hyfte et al. (2013)
- 1) Survey of use of complementary and alternative medicines
 - 2) Online survey of availability and use of complementary and alternative medicine. 108 responses from Illinois organizations (e.g., the National Hospice and Palliative Care Organization)

- 3) Pet therapy was most frequently offered (64.5 %), primarily canine therapy
4) None noted
- Vermohlen et al. (2018)
- 1) A multicenter randomized control trial on hippotherapy for patients with multiple sclerosis (MS)
 - 2) 70 adults from five German centers were randomly allocated to the intervention group (12 weeks of hippotherapy) or the control group. Berg Balance Scale was the tool used, as well as measures of fatigue, pain, quality of life, and spasticity
 - 3) Results were below threshold of minimal clinically important difference but did show improved balance, fatigue, spasticity, and quality of life for MS patients
 - 4) None noted
- Volicer & Hurley (2003)
- 1) Review of terms and frameworks for behavioral symptoms of dementia
 - 2) Summary/review
 - 3) The Eden Alternative had pets in the nursing home environment and identified that AAT decreased loneliness in residents
 - 4) Technically met inclusion criteria but was a limited resource
- Wehofer et al. (2013)
- 1) Study explored the use of riding therapy and activities to improve balance, postural sway, fear of falling, and participation in older adults.
 - 2) Primarily quantitative. One 76-year-old woman was used in the case study over 10 sessions in a 6-week period
 - 3) Improved static standing balance, postural stability, greater dynamic head and trunk control, decreased fear of falling, decreased back pain, increased ability to recover self after a fall, and increase in activity participation
 - 4) Only one participant was able meet the inclusion requirements for data analysis
- Williams & Jenkins (2008)
- 1) Literature review of dog therapy in dementia care.
 - 2) Literature review
 - 3) Studies showed significant influences on psychosocial well-being such as the improvement of motivation and incentive to participate.
 - 4) Identified methodologically that anecdotal evidence is prevalent with AAT, and few studies attempted to use experimental designs to provide academic evidence. Authors also noted that none of the studies used dementia care mapping (DCM)

Winkle et al.
(2014)

- 1) Summary/review of dogs' roles as pets, visitors, therapists, and assistants
- 2) Summary/review article that methodologically was not specified
- 3) Defined categories of companionship, AAT, and assistance dogs
- 4) None noted

Appendix C

Information Letter



The Experience of Palliative Care Patients with Equine Therapy

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The purpose of this proposed study is to understand the experience of the inpatient palliative client with equine (horse) therapy. For this study, we will recruit from the Provincial Palliative Care Centre (PPCC) in Charlottetown, PEI. The staff of the PPCC will help identify who would be able to participate. To be a part of this study will require you to be able to provide consent. Participants need to be able to speak English and can participate in the visits. Participants have the right to refuse to answer a question. Participants may also drop out of the study at any time with no penalty to their care routine at the PPCC.

Current horse therapies involve going to the farm to see the horse. As a client of the PPCC, you will have the option to have the horse come to you. You are invited to participate in the horse therapy and to share your input about it. Your input will provide insight to any benefits or disadvantages of using horse therapy in this setting.

The horse therapy consists of four visits with two visits per week. The first and third visits will be watching a 10-minute video of Billy (the horse) at his farm and clips from previous volunteer visits at the PPCC (no patients are seen in the video). For the second and fourth visits, Billy will visit you. These visits can happen through the window in your room and/or you can pet Billy at one of the entrances to the unit. The visit will take approximately 5-10 minutes.

Information from your chart that will be collected will be your pre-therapy ESASr (symptom assessment information) and medications. The ESASr tool is already a part of your care at the PPCC.

After the fourth experience with the horse, you will be asked to complete an additional symptom assessment information (ESASr). Within three days of the fourth visit you will have the opportunity to talk about your experience of horse therapy with me (the principal investigator) in an interview. You will also provide general information such as your age, diagnosis, and gender. The interview will be audio-taped and transcribed to paper by me, so I can review and fully understand your experience of horse therapy. A follow up interview will occur within a week to ensure the transcribed version of the interview is accurate with you and will take place at the PPCC or your home if you have been discharged.

Personal information such as names and places will be removed from the data to maintain your privacy. The only identifying factor in the study will be location, which will be described as a palliative care unit in Atlantic Canada. With your consent one set of anonymized data will be kept indefinitely. Initial data that can have identifying information will be kept in a secure location for seven years, then destroyed.

There are risks with horse therapy and every effort is made to reduce your risk. The horse, Billy, has over four years of experience with the palliative population. Billy is vaccinated and vet checked prior to the therapy. There will be a team of three people with every therapy session: one will focus on you, and two will focus on the horse. One of the team members, Dr. Mary McNiven, is certified with the Equine Assisted Growth and Learning Association. The PI is a Registered Nurse and the resources of the PPCC are available if needed.

If you choose to participate in this study, you may receive a copy and summary of your interview, and a summary of the research findings if you wish. It will be sent to you by e-mail or Canada Post. You merely need to check the box and provide your mailing (or e-mail address).

If you have any concerns about any aspect of this study, you may contact the following people who are not directly involved:

Dr. Steven Turner, Chair of the REB, and/or Renée Audet-Martel, REB
Coordinator, University of New Brunswick, (506) 453-5189, ETHICS@unb.ca

Appendix D

Informed Consent for Participants



UNB Experiences in Equine Therapy with the Adult Palliative Population

PARTICIPANT QUESTIONS

1. Has this study been explained to you? Yes No
2. Have you read this consent form, or had it read to you? Yes No
3. Have you had an opportunity to ask questions and discuss this study? Yes No
4. Do you understand the information provided? Yes No
5. Do you understand you are free to not participate in any part(s) of the study? Yes No
6. Do you understand you can withdraw from this study at any time without consequence? Yes No
7. Do you understand who has access to your personal data? Yes No
8. Do you understand that your medical records will be accessed for your medications and symptom assessment (ESASr)? Yes No
9. Do you understand you will receive a signed copy of this consent? Yes No
10. Do you consent to allowing your data (with no names included) to be used for research later? Yes No

PARTICIPANT STATEMENT

I have read the above information and understand the purpose of this research. I understand the possible benefits and risks of participation. I have had the chance to ask questions, and my questions have been answered. I have received a copy of the consent form. I give permission for the information I provide to be used for the purposes of this research. My signature confirms that I give my informed consent to be a participant in this study. Or, instead of my signature, I can give my consent (stating: "I consent to participate in this study") on tape before the interview starts.

I wish to receive a copy of the transcript from my interview. Yes No

I wish to receive a summary of themes identified in the interviews. Yes No

I wish to receive a summary of the completed research. Yes No

I wish to be invited to a presentation of the research findings. Yes No

I give permission for the researcher to keep and use my interview data (names removed) for future educational purposes or future research Yes No

In the event of discharge home, I give permission for the researcher to visit me to do the follow up interview Yes No

If yes to any of the above, how do you prefer to be contacted? Please give your contact information (e.g., email or mailing address, telephone number):

Email _____ Telephone _____

Address _____

Printed Name of Participant Signature of Participant Date

Printed name of Witness Signature of Witness Date
(The witness is 19 or older)

Appendix E

Video Visit Protocol

- At all times safety was priority, if needed discontinued visit early and alerted PPCC staff if medical intervention needed or environmental intervention (e.g., loose wires in electronics, water on floor)
- Occurred with principle investigator only
- Ensured informed consent has been obtained
- Introduced myself and why I was there
- Answered any questions that may have come up regarding the study
- Reminded participant of their right to withdraw from the study at any time with no consequence
- I had the video set up to watch in the participants' respective rooms and was present during each screening (that is one video at a time)
- Ensured participant was in a comfortable position to watch video (approx. 10 min in duration)
- Watched the video quietly with the participant. If the participant talks during video gently redirect him/her back to the horse in the video. Allowed conversation about the video (asking what the horse was doing, etc.).
- I focused on the participant, I was present as a researcher not a nurse. If participant required intervention I informed the staff of the PPCC asap.
- Thanked participants for their participation

Billy's Visit Protocol

- At all times safety was priority, if needed discontinued visit early and alerted PPCC staff if medical intervention needed or environmental intervention (e.g. loose wires in electronics, water on floor). If participant went outside to see Billy staff was made aware and were present in case participant needed help to transfer/ambulate
- Ensured informed consent has been obtained
- Introduced myself and why I was there
- Answered any questions that may come up regarding the study
- Reminded participant of their right to withdraw from study at any time with no consequence
- Required at least three people, one with participant during therapy and two handlers were with Billy
- Dr. McNiven (Billy's owner) had Billy up to date on vaccinations
- My focus was on the participant. I discontinued the visit with Billy and notified PPCC staff asap for intervention if needed.

- Horse handlers were appropriately dressed for being outside and wore proper foot wear (boots). If intervention needed for Billy they alerted me, and the visit was discontinued so Billy could be looked after.
- While at windows one horse handler focused on Billy while the other focused on external distractions for Billy (such as keeping Billy out of seasonal bird feeders and flowerboxes)
- Could not do hands-on therapy at windows due to not being able to safely do it
- When doing hands-on therapy, the two horse handlers both focused on Billy and increased distractions (walkers, wheelchairs, multiple people). I focused on participants. Hand sanitizer was available for participant's hands, and participants patted Billy one at a time. Participants were also appropriately dressed based on weather (usually had jackets or blankets, feet were covered). Ensured area remained de-cluttered (front door of building so no idling vehicles, etc.). Ensured staff was aware of where their patients were and that patients were able to safely ambulate or had staff assist them with ambulation.
- Thanked participants for their participation

Additional Protocol for Data Collection (Fourth visit only)

- Answered any questions that may have come up regarding the study
- Reminded participant of their right to withdraw from study at any time with no consequence
- Pre-therapy ESASr and medications obtained from medical chart. Initially I was directed by PPCC staff that their ESASr assessments were usually collected in the morning by day staff. The ESASr assessments were routinely collected by staff on evening shifts, and this was not realized until after a visit was completed. The pre-therapy ESASr had to be changed to the last ESASr collected from staff within 24 hrs of the post-therapy ESASr that was conducted by me.
- I conducted a post-therapy ESASr
- Conducted interview (was done asap after fourth visit, however depending on participant's energy could have been up to 72 hours after visit)
- Quickly became apparent with participant's energy levels that some required only a couple visits for data collection whereas others required multiple, short visits. Attempted to accommodate as best as possible.
- Fleshed out responses by using open ended terminology (e.g., "tell me more")
- Thanked participants for their participation

Appendix F

Table 3. *Participant Visit Day-to-Day Journal*

Participant	Consent	Visit 1	Visit 2	Visit 3	Visit 4	Hands	
						-on Visit	Data Collection
1	Nov 8/17	Nov 14/17 Video	Nov 16/17 Billy	Nov 21/17 Video	Nov 23/17 Billy	Yes	Nov 23/17, Nov 28/17, Dec 15/17
2	Nov 8/17	Nov 14/17 Video	Nov 16/17 Billy	Nov 21/17 Video	Nov 23/17 Billy	No	Nov 23/17, Nov 28/17
3	Nov 9/17	Nov 14/17 Video	Nov 16/17 Billy	Nov 21/17 Video	Nov 23/17 Billy	Yes	Nov 23/17, Nov 28/17, Dec 19/17
4	April 10/18	April 10/18 Billy	April 13/18 Video	April 19/18 Billy	April 21/18 Video	No	April 21/18
5	April 26/18	April 26/18 Video	May 1/18 Billy	May 5/18 Video	May 8/18 Billy	No	May 8/18, May 10/18
6	June 12/18	June 12/18 Billy	June 15/18 Video	June 19/18 Billy	June 23/18 Video	No	June 23/18, June 29/18, July 9/18
7	April 3/18	April 3/18 Billy	April 6 refused April 7/18 Video	April 10/18 Billy	Death occurred	No	None Removed from study
8	April 10/18	April 10/18 Billy	April 13/18 Video	April 19/18 Billy	Death occurred	No	None Removed from study

Appendix G

Demographic Data

Date of collection:

Age:

Sex:

Ethnicity:

Gender:

Education level:

Occupation(s):

English as first language:

Reason for admission:

Diagnosis:

Medications: (be sure to identify medications that can affect cognitive status)

Have you been around animals before? If yes, what kind?

Can you describe how they influenced your life?

Appendix H



**Edmonton Symptom Assessment System:
(revised version) (ESAS-R)**

Please circle the number that best describes how you feel NOW:

No Pain	0	1	2	3	4	5	6	7	8	9	10	Worst Possible Pain
No Tiredness <i>(Tiredness = lack of energy)</i>	0	1	2	3	4	5	6	7	8	9	10	Worst Possible Tiredness
No Drowsiness <i>(Drowsiness = feeling sleepy)</i>	0	1	2	3	4	5	6	7	8	9	10	Worst Possible Drowsiness
No Nausea	0	1	2	3	4	5	6	7	8	9	10	Worst Possible Nausea
No Lack of Appetite	0	1	2	3	4	5	6	7	8	9	10	Worst Possible Lack of Appetite
No Shortness of Breath	0	1	2	3	4	5	6	7	8	9	10	Worst Possible Shortness of Breath
No Depression <i>(Depression = feeling sad)</i>	0	1	2	3	4	5	6	7	8	9	10	Worst Possible Depression
No Anxiety <i>(Anxiety = feeling nervous)</i>	0	1	2	3	4	5	6	7	8	9	10	Worst Possible Anxiety
Best Wellbeing <i>(Wellbeing = how you feel overall)</i>	0	1	2	3	4	5	6	7	8	9	10	Worst Possible Wellbeing
No _____ Other Problem <i>(for example constipation)</i>	0	1	2	3	4	5	6	7	8	9	10	Worst Possible _____

Patient's Name _____

Date _____ Time _____

Completed by (check one):

- Patient
- Family caregiver
- Health care professional caregiver
- Caregiver-assisted

BODY DIAGRAM ON REVERSE SIDE

ESAS-r
Revised: November 2010

Figure 1. Edmonton Symptom Assessment System (revised version)

Please mark on these pictures where it is that you hurt:

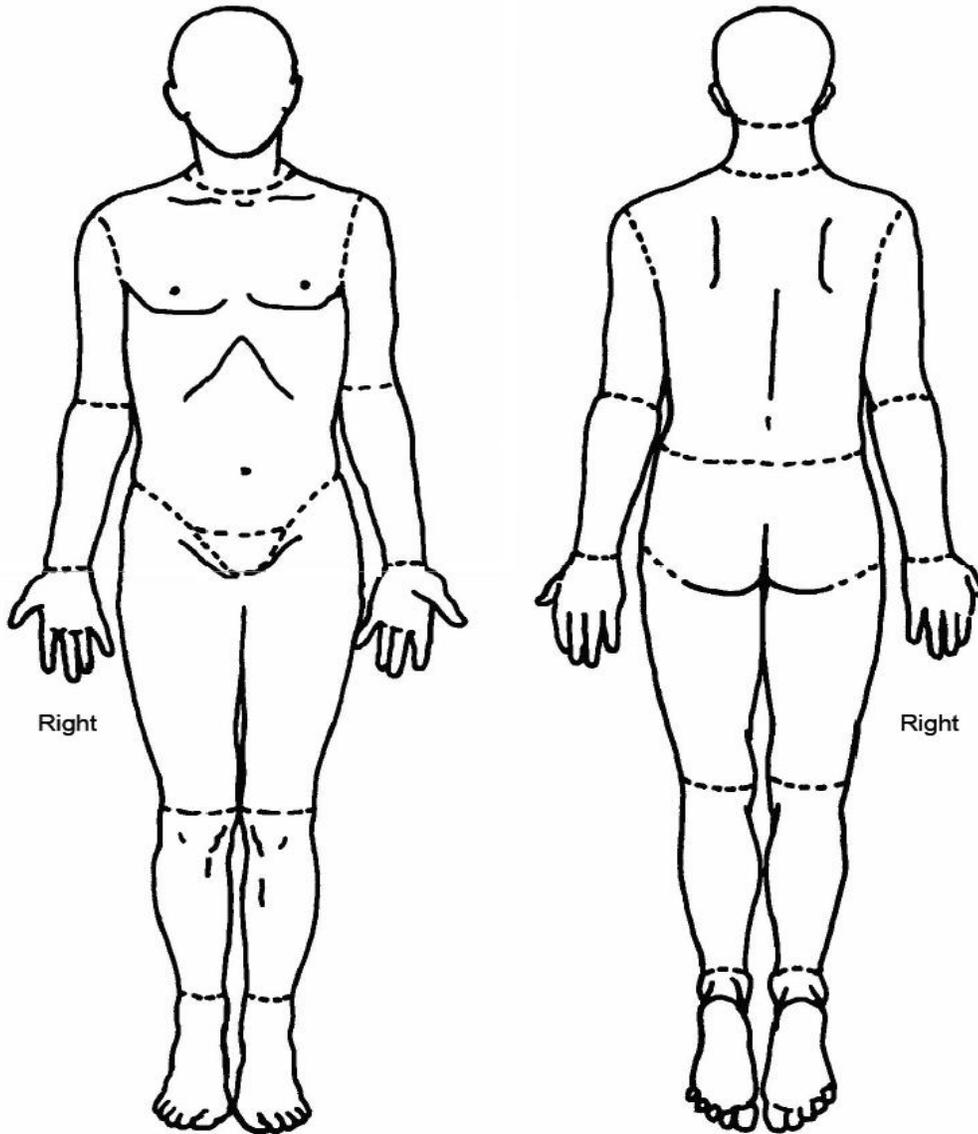


Figure 1. Edmonton Symptom Assessment System (revised version)

ESAS-r available freely to use courtesy of: Watanabe, S. M., Nekolaichuk, C., Beaumont, C., Johnson, L., Myers, J., & Strasser, F. (2011). A multi-centre comparison of two numerical versions of the Edmonton symptom assessment system in palliative care patients. *Journal of Pain Symptom Management*, 41, 456-468. Can be retrieved from http://www.palliative.org/newpc/_pdfs/tools/ESAS-r.pdf

Appendix I

Interview

Date:

Did participant do hands-on therapy? Yes/No

Thank participant for taking part and remind them of voluntary nature of the study and right to withdraw consent or not answer a question. Duration of interview 5-30 minutes.

Tell me about participating in this study. What is your experience with Billy? What stood out for you about the horse therapy?

How/did the visits have an influence on your symptoms? How so? Tell me more...

-e.g., pain, tiredness, drowsiness, nausea, appetite, shortness of breath, depression, anxiety, well-being, and other

How/did other factors affect your symptoms other than the horse therapy? How so? Tell me more...

-e.g., medications, visitors, recent events

What does quality of life mean to you? How/did the horse therapy influence your quality of life? How so? Tell me more...

Having met Billy, did the visit with Billy have a similar effect as being around the other animals in your life? (see demographic info) A different effect? No effect?

How did you feel when you watched the video of Billy?

How did you feel when you visited with Billy?

Is there anything that you would change about the horse therapy provided in this study?

Appendix J

Individual Core Stories

Participant 1's Core Story

The first visit was a little bit startling for me, but also wow, almost like a novelty. After that first visit, I knew what to expect. It was a bit of excitement and you can feel it in the building. Like the nurses will be saying, "Billy's coming today, Billy's coming today!" It sort of got everybody earmarked for "ok, Billy's coming today." It was like an awareness for him, which was good. Billy is something to look forward to, a change in things. Something different from the usual. Billy's visits were above and beyond normal care. Like who would expect to have a horse visit them in a day?

Billy's visits were a positive experience. I feel it was rewarding to me as well as to Billy it was rewarding. The hands-on visit with Billy stood out for me and him. Billy put out his snout, because he wanted my hand to keep petting him. He wanted to maintain that one-on-one, the contact with me. That day I was really tired coming back to the centre [from home], but when I saw that Billy was here for the visit it sort of gave me a burst of energy. Some people say "oh why don't you go out shopping" but even a trip to Giant Tiger is a big trip, a big outing for me. So, if that's the highlight for my day, that's it. When seeing Billy one-on-one is hard [tiring] then seeing him at the window is great, that's what it's all about [conserving energy when needed for important things]. (Husband [present during the interview] added that when Billy's here, she gets a little burst of energy even though she usually sleeps most afternoons. Also, you get to see the big smile on the grandkids' faces when Billy is here.)

Quality of life to me means being able to enjoy family and friends. To be relatively pain free. Billy's visits made me enjoy life a little bit more. [Husband] is here every day and some family members are not, and so it's like we can share Billy's visits with them. Like from our family here, and for our family in [large metropolis city], we send pictures of the raccoon, squirrels and Billy that we see here. [Husband] took a picture, where it looks like Billy is giving me a kiss, that was sent to family; they haven't responded back yet. Sharing Billy's visits provides like a connection with family. [Husband] was saying "Billy recognized you!" and he was very excited about that. He [husband] said "he came right up to the window, he knew ya" and like he did, Billy came right up to the window.

We had two indoor dogs as pets, they made the children happy and were part of the family. Billy had a different effect than my pets, because it wasn't constant, every day in my own home. It was nice to see Billy was being so well cared for in the video, I preferred the actual visits with Billy over the video visits. A change I would make in the current horse therapy offered would be to have the one-on-one visit from Billy right at the beginning.

Participant 2's Core Story

I didn't know there was such a beautiful horse [Billy, the therapy horse]. I'm not familiar with the horse world. And he just strikes me that he's got to be the prettiest one ever to look at, and he just looks so lovable. You want to keep him; he's a keeper. Just to have the horse up that close - I've never been close to big animals, so it was new, a novelty to have him in my window. It was just a little joy. Having Billy visit was part of a little something to look forward to and I enjoyed seeing him. Oh, I could almost feel him. When I watched Billy on video it was fun to see him romp around. I liked his attitude when he couldn't get with the other horses; it was funny. I loved to look at him, admired him, and I was in awe of the fact that he's even here. I loved the horse therapy the way it is. It works for me.

I have been around dogs and cats before as family pets. They were like children, part of the family. My animals loved me. Seeing Billy is different than the family pets I have had, I just didn't have long enough to get to know him.

I think the medication is certainly making a difference in my symptoms. The medications help my breathing and relaxing the muscles in my body and the medications have their place. I was always anti-medication: I never took a Tylenol in my life. Now I'm on morphine, I'm a drug addict. I'm only kidding. You gotta do what you gotta do. The medications are keeping me comfortable. It is important to be without pain and without nausea and be able to enjoy what the average well person does - Socializing, friends, phone calls, and visitors. Everything that I can enjoy doing while I am here [PPCC].

Participant 3's Core Story

I was glad to see Billy come. I liked to see him get out of the truck, and then it made me feel good when he was jumping around to come see me. I felt when he came over to me to say hi that he was glad to see us. It also made me sad though. Because I thought of my sickness - I have brain cancer - and how Billy can't tell anybody if he has a sore hip, or a back injury. Billy can't tell us what's wrong with him, like if he's having a bad day. You don't like seeing them bandaged up or something. I was anxious to see him coming I guess. But more anxious to see that he's feeling all right. Just the feeling of not knowing if they're suffering. They can't tell you themselves what is going on with them and they're not able to express, as far as I know, what is bothering them. Like if a horse has a sore stomach, it can't come out and talk to me. Some days Billy might be perfect and then he may have an illness another time. Some days when he comes in, some part of his body might be aching, his hip or something, and I wouldn't know. It sort of bothered me to think about that. I could be concerned about Billy's hip because of my own hip. I have a hip replacement and I guess I did think of it that way to. You wonder with Billy, what his future is and how long he'll live for, and you feel sorry about thinking that way because he's doing very well, as far as I'm concerned, where he is right now.

I think some people suffer in silence. They just don't want to come out and tell somebody they're sick one day or if something's bothering them. I express myself, and my wife expresses herself because she's got to meet the doctor today about her knee. She must have surgery and she's looking forward to getting it done, but she does say it's very painful. You just don't know how the future will turn out. Like with my wife's operation, there could be an infection or anything afterwards. My wife also has a heel spur that's very painful. I know my mother, I'll ask her how she's feeling today, and she'll say, "oh it's all right" and really won't come out and say it, although I know something is bothering her.

I enjoyed seeing Billy even though it made me sad by times, just thinking that he couldn't speak if something was wrong. The other animals (cows, cats and rabbits) didn't enthuse me as much as Billy. Horses influenced my life more than any other animal. I loved to see them running and everything. I just like the affection of a horse. I mean it seems like they're more lovable to me than other animals. I feel if I was going to hug anything it will be a horse more than a dog or a cat, I could wrap my arms around a horse. The strength of Billy to come and visit us. I felt peaceful. Billy's a very nice horse; he was very gentle. He felt like a true companion. I enjoy him coming to see me. It felt good to have him around; he was gentle, and he let you rub his head. Billy doesn't let my condition affect how he sees me. This makes me feel fine. When I'm around people they see all the scars, whereas Billy just sees me. Having Billy visit here up close is my type of thing.

The video was nice. The only thing I thought of was that he couldn't get to the other side of the fence where the other horses and the grass were. I feel better when it's

on a windy day for a horse, the wind would help with the flies. I preferred hands-on visiting with Billy. I like to get out, put my coat on, say hello to him, and touch and pet him. I like to feel his hair. He looks great in the eye. I felt like I could see what he looked like, that he was well groomed and everything. I think he's taken care of, he looks like he's eating well and everything. It means a lot to have Billy going from window to window, but there isn't as much of a connection or fellowship as going out and visiting with him. I prefer the actual visits with Billy over the video.

I'm doing my best every day to try and keep a good attitude. You just got to go on after you have a bad day. Tell yourself you can't have a good day every day. Being able to go to sleep, and rest, and knowing that I have another day coming if it's meant to be. Billy had some effect on my tiredness. My tiredness is more or less from my medications and things. With the cancer, if I have a busy day with something like a get-together I can sleep for the next day or two. It takes all my energy. Billy's visits are fine with my energy. I find my energy's probably better because I'm so glad to see him and that he comes around and visits. I don't sleep anymore than usual the next day after a visit with him. I enjoy every day as much as I can because I believe it's good to stay as positive as we can. I was a very small twin, quite a bit smaller than my brother. I survived up until now. Every day is a gift of life for me that I'm thankful for. My future... every day is different. To know Billy's coming, I enjoy seeing him brighten my day even if it is a bad day for me. I feel a new day is a gift from God. Getting up in the morning, seeing the sun shine. Knowing one brighter day and my sickness is staying the way it is for the time being.

Some days you could kind of get down, because you think about your future and what's ahead of you. The unknown. That's the only thing that makes me get thinking [depressed] sometimes. You got to put your health out of your mind some days. Because if you dwelled on your health, you'd go nuts to be honest. It's important to be kind. Be merry. Be compassionate. Everybody would deal with the same things, but mine's more because I'm terminal. I wonder how many more Christmases I'll have, and if this is my last one? This Christmas I'm spending time with family, and Billy will be eating in the barn. Some people are without families, where they're really sick. And that would make them depressed. They have no visitors. I know some family members don't always treat one another the same, it's sad. Some families are very close, which is good. I'm very close with my family. I like being with family, because they really help when they're visiting. I went with them Friday night, at our apartment, we had a big get-together, and I felt really good afterwards. I like to socialize, I'm always glad when family says, "We're having a get-together, come over some night now." It makes me excited. My twin brother's the best friend. He takes me out for rides and takes me out around to my mother's and visits.

Participant 4's Core Story

It started in October that I was getting more and more short of breath, I had thought I was coming down with pneumonia. I went to the doctor, they did an x-ray, and there was a spot on the x-ray that they weren't sure exactly what it was. They wanted me to do another x-ray after a little bit of time to see if it was still there or not, so I was thinking that it might be a clot or an infection; but in the back of my mind that it might be cancer. I had the second x-ray in January and they immediately put me through to a CT the very next day, I was then diagnosed with lung cancer. It took me back to when I had cancer the first time. When I was pregnant with my last child, I was diagnosed with cervical cancer. I wanted to carry my daughter to term so nothing was done initially. Once she was born I had a hysterectomy, chemo, and radiation and I beat it. This time I know this is going to be the end of the road, I won't be going home. I try to stay positive and take it one day at a time. It is very difficult to be so dependent on everybody. I was an assistant manager, and everyone would come to me with problems and I helped them. Now I'm at the point where I can't do anything. I try to keep a positive attitude and take one day at a time, that's kind of how I got through life.

I enjoyed seeing Billy, but I've never had an extraordinary interest in horses. I know my sister does, but I never did. I used to live in an apartment and there was a field across from us and there used to be a field of horses and they used to run across the field and we'd see the manes and the tails streaming out. And we used to really enjoy that. I've never really been up close with a horse or anything. I enjoyed looking at Billy when he came. It was something different. Billy brightened my day, I just looked at him. The video of Billy was interesting to see how they live. You know, like the barn there and that. Loading them up on the trailer. But other than that, it's just watching a video.

Billy wasn't like my dogs, I had a closer relationship with them, they were our pets. My Baby [dog] used to get in under the covers and sleep down by my feet until she got too hot and then she'd come up and sleep on the pillow beside me. Baby always seemed to know when I was down, and she'd come up and lie right beside me in my chair and snuggle up right close. I was the one to take care of Baby, so my relationship was closer with her. I had dogs all the time, [pointing to a picture] that's my Baby up there, I had her from a puppy until she had to be put down. She was deaf, but you can live with that, but then she lost control of her bladder. She was my baby, a real good companion. I had my son take her to put her down.

I don't even know how to answer the quality of life question. I just guess a score on the other thing [sense of well-being on the ESASr]. Spending time with family is important, and independence. I'm not independent or anything, I'm dependent on everybody now. You do get used to it. Depends on, you know, your personality. I've been taking medication for pain. I always told my family when the horse came, and they were googling the breed and stuff to share with the grandson.

Participant 5's Core Story

I love them. I always did love horses. I fell in love with them. And one day my dad brought me a big apple, and I had my hand too far out of the window, and so the horse grabbed the apple and he ate it. My brother laughed and said, 'There you lost your apple' and I said 'that means I lost an apple to a horse...' so he was making fun of me eh? But I didn't mind, I was like go ahead and eat it! I fell in love with horses when they were tiny, like I saw them being born. I grew up on a big farm. They had sheep, cows, pigs, chickens, horses there, they had everything. Seeing Billy brings back very good memories about growing up on the farm.

I fell in love with Billy. Oh my god, he's so lovable. My sister's going to be here Tuesday. She's never saw a real one [horse] so I said to come in Tuesday and you'll see Billy and you'll love him. I said between one and two be sure to come. You can tell just from looking at his face, how sweet he is. And the way he was brushed, I found that he was really really like appreciating the people. You could tell that on him. Billy relaxed me. I preferred the visits with Billy over the video.

Seeing my great-grandkids growing up is important to me. Hopefully I'll live longer. I'm doing everything I can right now, like going through my will and that. It's not easy. They said it had to be done though because they don't know how long I got. When the cancer doctor left, he said enjoy your summer. I don't know what he meant by that, if I would have the summer or not. I take each day as you can. It is important to enjoy every day that you have. You only got today, you don't got tomorrow, or tomorrow's never going to come. When tomorrow comes it's always today. I've been in the AA program for 30 years; all the kids love it [by the tone is very proud of being sober].

Participant 6's Core Story

Animals made money. I always put a steer aside, a calf, and I raised it until about 800 lbs. Then I would have it butchered, half of it in the freezer and half of it I sold. I enjoyed working with animals. I don't have a boss over me on the farm. I liked both the visits with Billy and the video visits. Seeing Billy reminds me of when I was out riding. If I was able to I would want to be out there and try to ride him. I've ridden before. When I first came to Canada we used to go out on Sundays and rent trail horses. I liked it; it was relaxing. You let the horse do the work. The only work with those horses you have is to keep them on the trail because if you let them go just for one second, they have a way to turn around and go back home. I got lost one time. You know I didn't exactly remember when, but it was getting dark. So, I just let the reins go. In no time I was home. I didn't let him run home like he wanted, this bugger was trying to run along the barbed wire fence—he was going to try to get my leg caught up!

Billy did not influence my symptoms. A new set of lungs is what I need. Billy's visits are a distraction from my symptoms. Anything that is a distraction is good. I can also get on my computer. I got my own music on my computer.

When you're in a place like this [inpatient unit] it's a hell of a lot better having a horse visit than having people visit you because you don't have to talk to the horse. You just look at him and the horse looks at you. If Billy could talk to me, he would say "What's that idiot doing on that other side of the window?" I'm not quite sure what Billy would think. You know when he sees me with a tube stuck up my nose. I imagine he would focus on the oxygen tube. Most of the time he sees people without the tube. And then he comes in here he sees people with a tube stuck up his nose. What do you expect him to say, eh?

Horses have half a brain. I like some animals. I don't particularly like dogs. Dogs like me. I don't particularly like dogs, yet I never got bit by a dog. Dogs don't have as much brains as a cat. A lot of people like dogs, and they get attached to people, but so do cats. At least the cats I used to have, up to 17 cats at one time. My way of naming every animal pretty well was to call them Fuckler. "Come on Fuckler, let's go." It saved me remembering different names. I was in dairy, and in the evening if the cows didn't come down I'd have to go get them. All I had to say to my cat was "come on let's go get the cows" and the cat would come up the hill with me to get the cows. People think I'm crazy when I tell them this. If my cat wanted to come into the house, she would sit on the kitchen windowsill outside. Once I saw her I would say "go around to the front, I'll let you in" and by the time I got to the door she had moved off the sill, around the house and was waiting at the door to be let in.

That's the fox I raised behind my house [pointed to a picture of a fox]. The fox's mother got shot. She took off one Saturday and took one of the pups to go hunting, and I heard some gunshots, and neither she nor the pup ever came back. So, I fed the remaining fox. I wouldn't touch him, for the simple reason of I wanted him to stay wild. But I had

him this close [gestured a close distance]. And I played with him. I laid down on the ground, moved my hand out of sight. He'd take off and come back, you know.

I was independent and active. When I came to Canada the end of July 1958, we camped on the forestry road just west of Calgary that fall. We camped overnight, and we went mountain climbing. I enjoyed being active, I became seriously active after I sold the farm in 1994. I knew a woman then, and her kids bought her a bike, so I bought a bike too. One of the heavy CCM bikes, you know, at Canadian Tire. And we biked everywhere. I biked Newfoundland in 4 days or 400 km, I biked the Magdalene Islands. When I tell people what I did, you know most of them say I'm full of shit, that's why I saved all these pictures [multiple pictures of his trips on his computer]. Have you ever biked the Cabot Trail? I've only biked it eight times, four times all the way, and four times I got them to take me up the hill. Cheated a little bit. The very first time, 2005, I did it on my own in three days, I think I was 67. With all my gear on the bike, so I walked every hill. Any other time I did it with Cycling PEI in 3 days, but you don't have to worry about the gear as it's in the truck. The last time I did the Cabot Trail was five years ago, 2013. I had to stop biking in 2013 but I continued kayaking until two years ago, summer of 2016. Listen to me. See that flashing light on top of the computer? Take the mouse and left click to see the picture. I made that double kayak by hand three years ago. I made a single kayak too.

I won't live that long. A good day to me means that I don't get short of breath. That I don't get nausea, like I did today. That I don't throw up, like I did today. The medication for nausea has helped. That I don't fart and soil my underwear which I did an hour ago. I want to be independent. After soiling I wash the underwear myself, and I then ask them [staff] for clean underwear. You know what I mean? I'm just independent. Always was. And it's not easy for me to just do whatever staff say. If I don't do things my way, staff will put the frigging brakes on this wheeled chair - I got them educated now. This other nurse, I was in the bathroom. She stepped on the brake. I was like 'lady, don't put the brakes on!' The lady says, "I'm responsible for you" so I say 'Lady, I've been doing it for two weeks, you know?' I don't want to annoy staff [to take the brakes off to reposition chair every time he wants to move]. I must be independent. I cannot take the brake off. The only way I can take it off is to get off the chair, walk around it, step on it, and if I don't have my slippers on, which happened before, I get my socks caught in the damn thing. And then what? And then I'm standing there. Today I turned on the computer. And the player I had, I can't find it. They [computer update] put another player in there. I get so mad at MSN sometimes you know, it's unreal what they do to you. It's frustrating.

This whole thing started in 1992 when I had Farmer's Lung. And every time I had pneumonia afterwards, on the x-ray it always showed the little bit of scar tissue of one of the lobes. I sold the farm in 1994. I figured I don't need this, get rid of it. From 1994 up until five years ago I bicycled more than 50,000 km. I cross country skied. Five years ago, I had to quit biking. I went to see the internal medicine doctor. His words at the time "if you bike, you need to have a bottle of oxygen with you". I responded that 'I'm going

to look awfully funny with a bottle of oxygen on my back.’ The internal medicine doctor talked to me about OFEV during this visit five years ago. Nothing ever happened. Last year, it must have been around March or April, I was getting a bit short of breath, so I told my NP. I told her about my breathing and I told her about the internal medicine doctor’s visit five years ago. A week later I was given another appointment time with the internal medicine doctor. At this second appointment four years apart, he was talking about this OFEV again and I was like “yeah, you know, if it helps, you know, the progression” and then he finally got me on it on November 15. This was four years after OFEV was first mentioned. I don’t want to say too much for fear of it affecting my current care, but you get the idea, the four-year delay.

Anytime something happens with pulmonary fibrosis, it takes a jump for the worse. This is what’s happening every time you get severely aggravated, your new ‘normal’ is worse than it was before the aggravation [exacerbation]. On Nov 15 last year I got the OFEV prescription, on Nov 21 I had a problem breathing so I went to the hospital. That was before I was on home oxygen. I got into the emergency, I had three nurses and a doctor working on me because my breathing sounded so bad and I couldn’t get any air no matter what I did. They gave me prednisone, they gave me all kinds of other stuff. They treated me, and the same day (Nov 21) I got a bed at unit 8, room 823. They treated me well, they put me on oxygen. My family physician and staff were talking about home oxygen. Then they had a guy from the government, he was arguing about it, that I don’t need oxygen, and the internal medicine doctor agreed saying “sorry but I gotta say now, you don’t need oxygen”. The internal medicine doctor and the government guy wasn’t listening to me about my breathing problems. There is nothing wrong with my memory. I may be 82 years old, but there is nothing wrong with my memory. Don’t ever forget that. So, the internal medicine doctor finally agreed to the oxygen, he phoned the government and they agreed to 50% of the oxygen up to \$200 a month. And then the oxygen company gave me the tanks, and I’ve been on oxygen ever since. What I am trying to tell you is that when you have something like this, every time you get a severe aggravation it takes a big jump on your health.

Last spring, end of July, and early August, I still kayaked independently. I had my house for sale because the lady I was dating at the time, she wanted me to move to town. Now the thing was, we were going to get a mini home and she was going to move in with me. Then she left me. Some people are special. Some are not. The non-special ones try to walk out, which is not easy. So, all through August, I had the trouble of packing up, selling and/or moving the contents of my entire house alone to the mini home. You can imagine what it was like all through August last year. I’m not talking about the big furniture, I got a moving company for that. But the things you gathered over the years is a lot of stuff. Every time I have an aggravation the scar tissue on my lungs grows a little more. It doesn’t get better, only worse. Looking back if I wouldn’t have sold the house I probably wouldn’t be in the shape I’m in now.

Aggravation is the worst thing for pulmonary fibrosis. On Feb 20 they have a program at [university] for lung disease people. You know pulmonary fibrosis is not the

only lung disease, there are several. Anyway, they have this rehab there. And they started a new group on Feb 20, and I took part in it as long as I could. I was doing pretty good at the rehab. And then by April I could not go anymore. On the morning of April 4, it took me an hour and a half to get dressed due to my breathing, so I checked my oxygen [SpO2] and it was down to 45. I figured it's time to go to the hospital, I was there four days. Just bear with me for a second. [needed additional time to catch breath, obviously very short of breath]. Let me find this letter I wrote on the computer:

[start of letter, addressed to hospital]

April 4 2018 - After I got dressed that morning, I felt there was something wrong with my oxygen level. It was 50% it took about half an hour to get it barely over 90%. I phoned the girls at rehab at [university] and they advised me to go to Emergency. When I got to the hospital that afternoon they put me on oxygen and wheeled me into a waiting room from about 3:30 to 7:30pm. The room was freezing. They put a few blankets over me. Sitting in a wheelchair with a lumpy seat for four hours is not pleasant. They finally got me into a room and the emergency doctor was looking at me. He ordered an x-ray and admitted me. The nurse made a couple slices of toast with peanut butter and jam, the room was cold, and five blankets did not keep me warm.

April 5 – No sleep with all the noise all night. Finally got breakfast the next morning, the first real meal since the day before. My family physician came to visit and confirmed that I had pneumonia.

April 6 – They put me into room 24 which was a lot quieter but just as we got there word came that there was a bed at Unit 8. Just before we left, the nurse put two bags on the drip post, one to drip and the second for after the first one was empty. When I got to the room 823 (which is the same I had been at November 21) the troubles started. There was a rubber mat on my bed. I asked the nurse for a sheet to put over it. Her words “that’s the way it’s going to be”. I never had to sleep on a bare rubber mat. Needless to say, very uncomfortable. Got supper, which was good as always, everyone turned the lights off at just after ten, so I figured I’d try to sleep too. After half an hour I woke up because the drip thing started beeping because the butterfly did not like my arm kinked. After a few hours, I must have dozed off, two nurses started to put a third drip bag on. I told them that two bags was the order and should there have been three the nurse in emergency would have put three bags on it instead of two. But logic does not seem to occupy those two nurses’ skill. They left giggling. Here goes another sleepless night.

April 7 – When I went to the bathroom I had to drag this drip thing with me. I asked the nurse to disconnect it, but the doctor has to do that. A nurse put it on, and a doctor has to take it off? At one point one of the nurses took the oxygen tubing off my face, saying you don’t need that your oxygen is up. I tried to tell her that the doctors and everyone else says I have to be on oxygen all the time. One time I came back from the bathroom and she put the oximeter on my finger and before she was able to read it I told her it was 87. It was 86. I started saying, let me explain this to you – she stomped off “I don’t need this abuse!” Did I abuse her? I think not. If anyone abused anyone it was she abusing me. This is the first time I ever had any problems with any nurses. I felt like I was being treated like a piece of garbage and I told my family physician that I had enough and asked him to sign me out. It seems to me that some of the nurses don’t have a

clue what it is like to live with pulmonary fibrosis. In light of my experience of my recent stay at the [hospital], I would like to think really hard before I would admit myself into the [hospital] care in case of an emergency. [End of letter]

A week after I sent the letter, somebody called me from the [hospital] and they apologized. What I am trying to tell you here, after I got out of the hospital, I got diarrhea for a week and a half and was trying to fight it. Finally, I got over it. No appetite. I ate very little all of April. Now I am here and won't be going home [June].

Appendix K

Krisandra Cairns - Assumptions on Horse Therapy

-I have a strong personal connection with horses. Interacting with my own horses brings that to an even deeper level, I am more affected by my own horses than unknown horses. However, I am still affected by unknown horses, and have many years of experience in interacting with horses that I have met for only a glance through a window up to interacting with for a few minutes/hours/days. My assumptions vary depending on the therapy.

Companion/Distracted

-Hope. I see a horse, and I think of freedom and power despite it being an extremely domesticated animal in most circumstances. A horse is much more powerful than a human, yet often does as the human requests. It does so for food, shelter, and love. Surprisingly not always in that order. I have seen horses in dire circumstances, yet their inner strength is astonishing. It gives me hope that I could overcome anything.

-The give and take of partnership. In a healthy human-horse relationship, the two are partners who work together. When you see that teamwork, that trust in each other, is awe inspiring. When a child is learning how to work with a horse on the ground it is amazing to see the look in the child's eyes when the horse works with them for the first time. The horse responds to the human's behaviour, not just the words. It helps humans to acknowledge the nonverbal cues and realize what their own nonverbal communication is (or is not) saying to others. As the child grows and learns more, the cues become subtler, and the child's confidence grows. When watching a true show jumping champion and rider partnership, it is beyond awe inspiring – to the untrained eye it looks easy!

Physical – on the ground with horses

-The above partnership example, except with me as the child/human and not the watcher. Working in tandem and getting to the point of trust with a large animal is an amazing feeling. The ulterior motives of a horse are for food, shelter, and attention so it simplifies the relationship process which helped me to develop the basic (but important) communication strategies with humans.

-The exercise generally is beneficial overall. There's catching the horse in the field, then brushing and saddling up. This gets the blood flowing and helps with your range of motion. Or you could lunge the horse or lead the horse. Then there are the chores associated with horses, mucking out, cleaning up, feeding, etc. I find these chores can be methodical and be a kind of meditation-type time.

-Simply touching and smelling a horse makes me feel more grounded. Having a large animal right beside me coexisting peacefully reminds me that it's not all about me and us humans. The world is a much bigger place than whatever my little world entails. It sometimes highlights to me how much emphasis I placed on a small portion of my life, and question whether that much emphasis is necessary in the larger picture. There are entire species that I have never seen/heard about. Worrying about whatever stupid little thing in my life that I was blowing out of proportion doesn't seem to be as big when I am

at the barn petting my horse. When I am watching a horse that is running/bucking this even more inspires me that there is more to the world than whatever I've limited it to.

Physical – on the horse

-The exercise generally is beneficial overall. It can help more so in specific areas, such as balance, strength, range of motion, and works core muscles. From personal experience, I could argue that in some cases riding reduces pain but in other areas it was the cause of pain too. It brings on a tiredness but a "good" kind. Sometimes you can feel extremely tired before you even get to the barn thinking of everything that needs to be done, but once you get there you get a second wind to keep going.

-Riding a horse brings the partnership to a higher and more personal level.

Social – in all type of horse therapy

-There are social aspects too, whether it's just you and the horse(s) or everyone at the barn. The confidence from successfully working with a large animal can spill over into human relationships where people become more confident and willing to try new things. When a horse helps a human realize how the human's nonverbal behavior affects the horse, it allows the human to realize how the nonverbal behavior may be interpreted by other humans. This allows us to be able to adjust our nonverbal cues to portray what we want the cues to portray. For example, when I was younger I was shy, and would back away if anyone approached me. When I started working with horses I realized that I was portraying to others that I did not want to interact with them. I learned how to portray aggression and assertiveness quickly with horses, and it eventually spilled over into my social life with humans.

Appendix L

Table 4. *Descriptive Statistics (for 6 participants)*

Characteristic	Range
Age	58 years – 82 years
Sex	66.7% Female 33.3% Males
Gender	66.7% Females 33.3% Males
Ethnicity	83.3% Caucasian 16.7% Acadian
Education	Grade 7 – Bachelor’s
English as first language (all were fluent in English)	66.7% English 16.7% French 16.7% German
Diagnosis	83.3% Cancer 16.7 % Respiratory
Animal experience?	100%
Type of animal experience?	100% Domestic Animals 50% Agricultural Animals
Animals influence life?	100%
Window visits with Billy?	100%
Hands-on visits with Billy?	33.3% Participated 66.7% Did not participate

Appendix M

Visual Representation of the Raw ESASr Data via Bar Chart

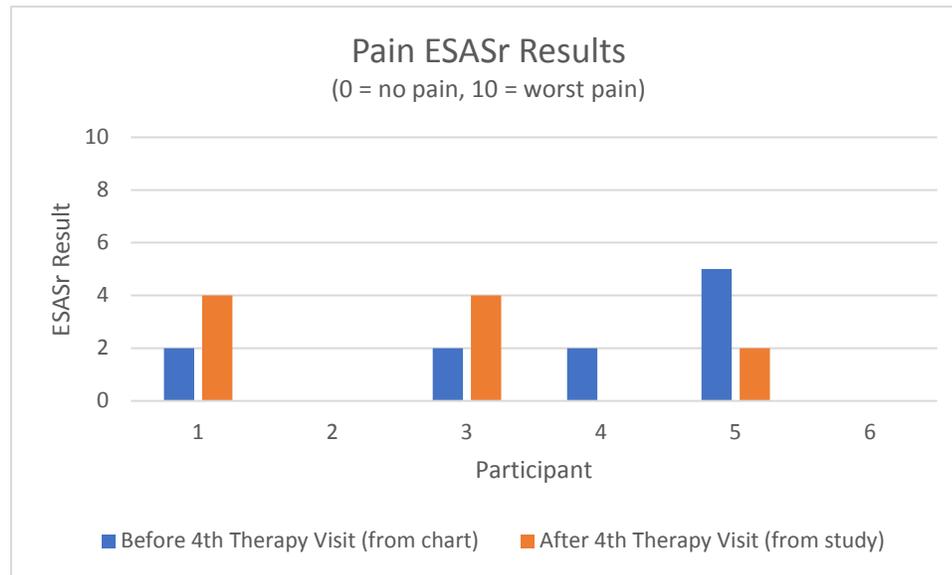


Figure 1. Visual representation of raw ESASr data for each participant before and after fourth horse therapy visit for the symptom of pain.

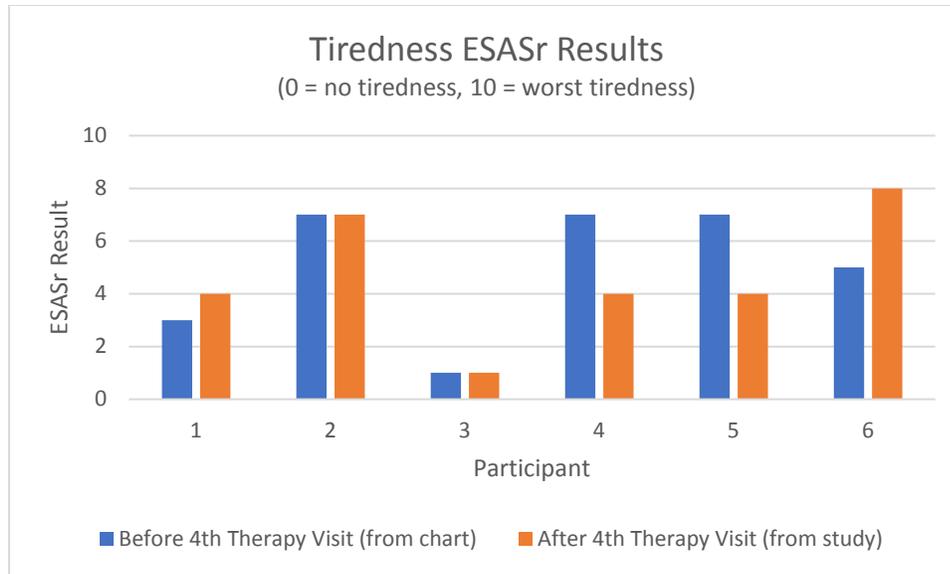


Figure 2. Visual representation of raw ESASr data for each participant before and after fourth horse therapy visit for the symptom of tiredness.

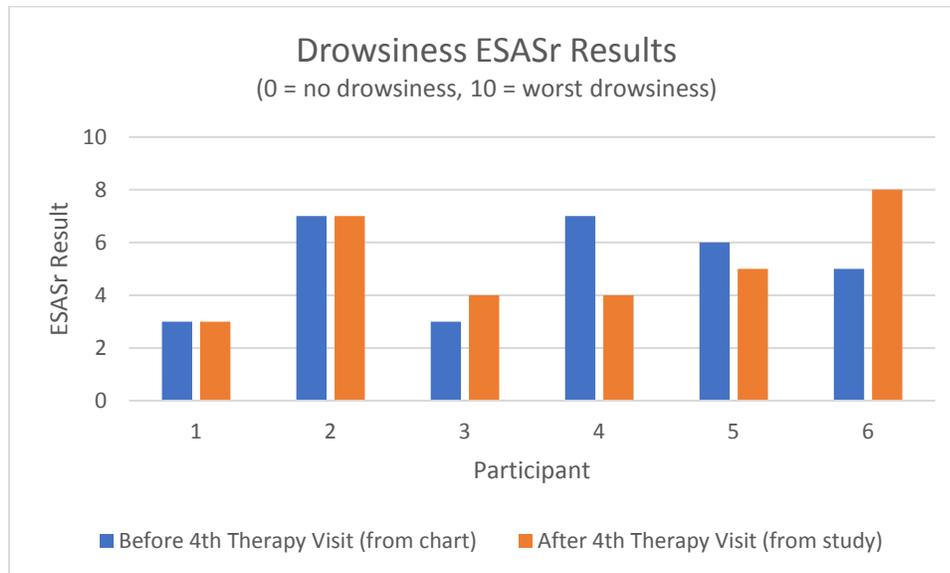


Figure 3. Visual representation of raw ESASr data for each participant before and after fourth horse therapy visit for the symptom of drowsiness.

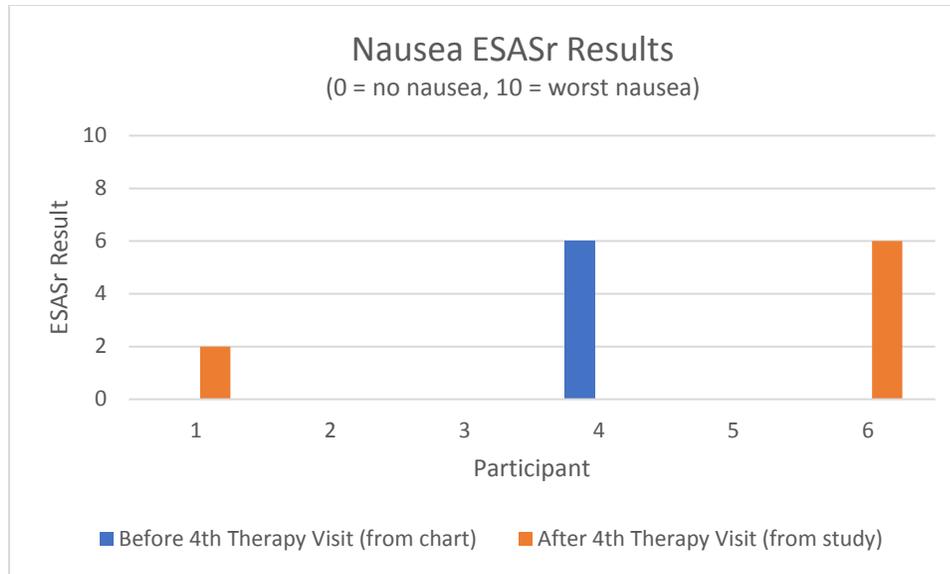


Figure 4. Visual representation of raw ESASr data for each participant before and after fourth horse therapy visit for the symptom of nausea.

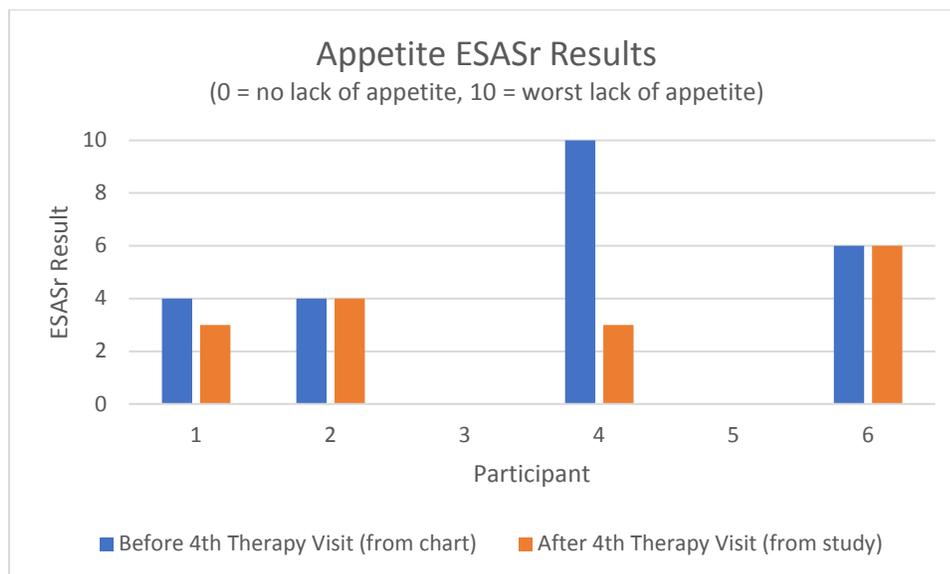


Figure 5. Visual representation of raw ESASr data for each participant before and after fourth horse therapy visit for the symptom of appetite.

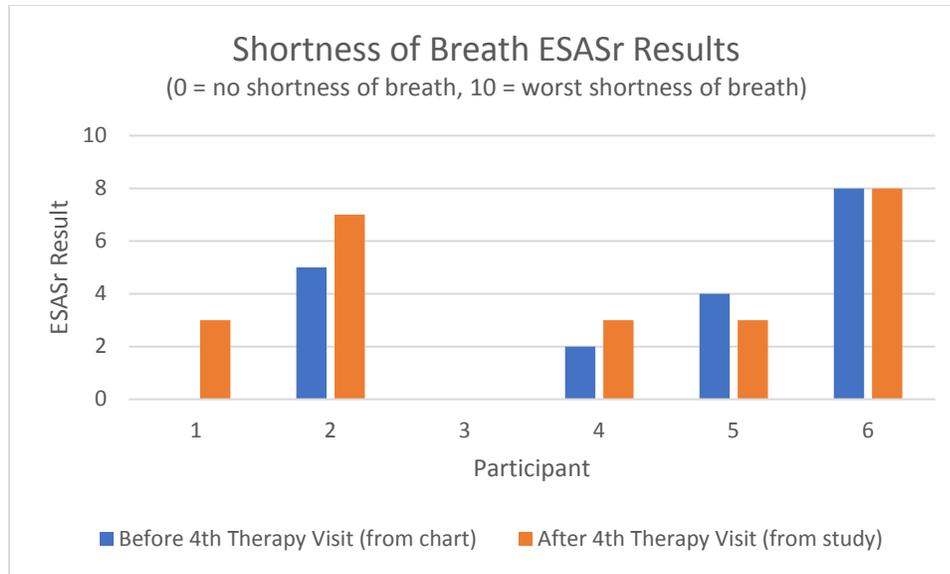


Figure 6. Visual representation of raw ESASr data for each participant before and after fourth horse therapy visit for the symptom of shortness of breath.

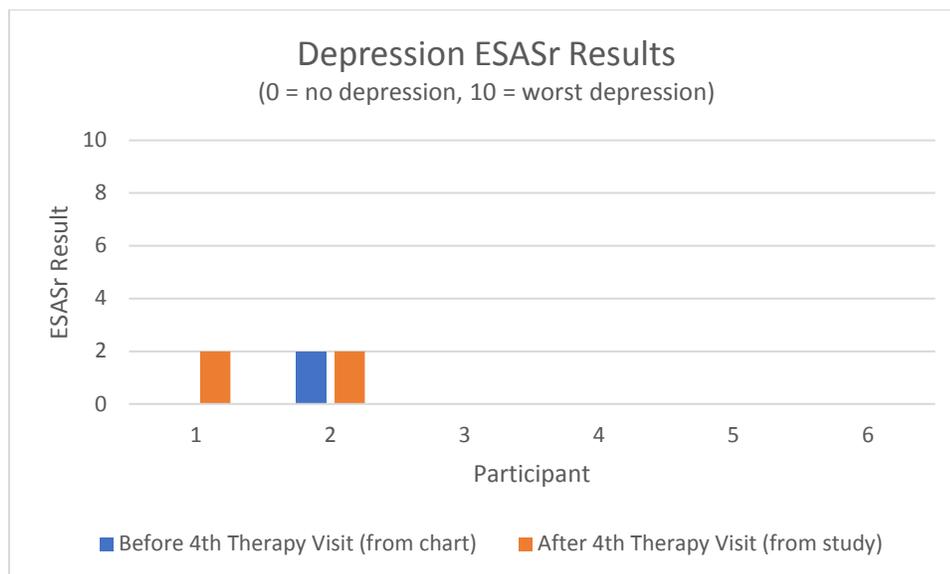


Figure 7. Visual representation of raw ESASr data for each participant before and after fourth horse therapy visit for the symptom of depression.

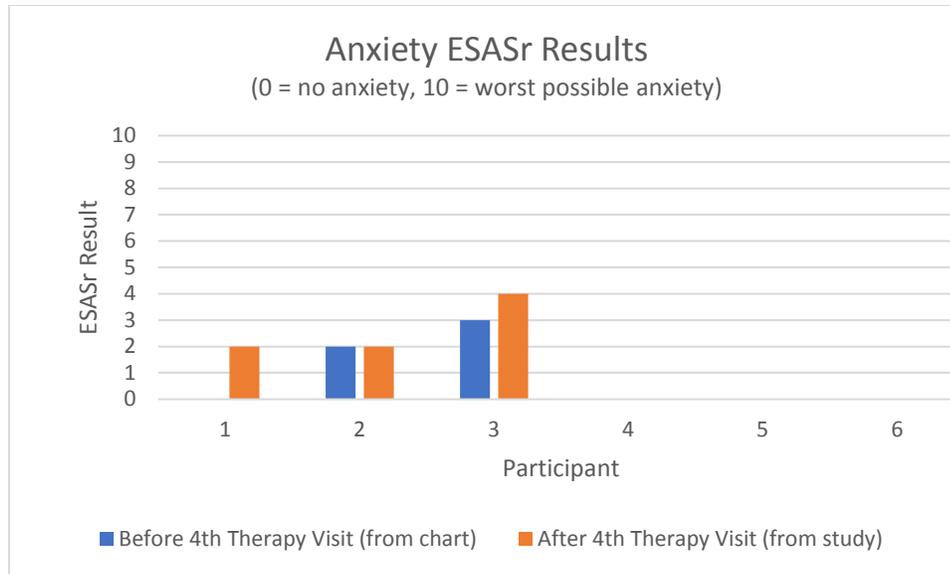


Figure 8. Visual representation of raw ESASr data for each participant before and after fourth horse therapy visit for the symptom of anxiety.

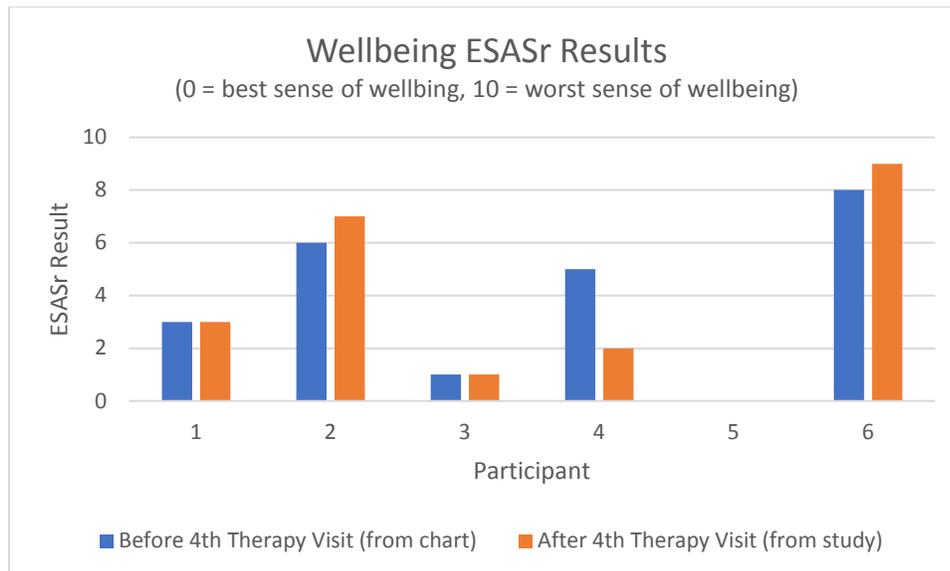


Figure 9. Visual representation of raw ESASr data for each participant before and after fourth horse therapy visit for the symptom of pain.

Appendix N

Table 5. *Sign Test^a of ESASr Symptom*

Pain **p = 0.3750** (n = 4, k = 2)

Participant	Before	After	After - Before	Sign
1	2	4	2	+
2	0	0	0	NA
3	2	4	2	+
6	2	0	-2	-
7	5	2	-3	-
8	0	0	0	NA

Tiredness **p = 0.3750** (n = 4, k = 2)

Participant	Before	After	After - Before	Sign
1	3	4	1	+
2	7	7	0	NA
3	1	1	0	NA
6	7	4	-3	-
7	7	4	-3	-
8	5	8	3	+

Drowsiness **p = 0.3750** (n = 4, k = 2)

Participant	Before	After	After - Before	Sign
1	3	3	0	NA
2	7	7	0	NA
3	3	4	1	+
6	7	4	-3	-
7	6	5	-1	-
8	5	8	3	+

^a Moore, D. S., McCabe, G. P., & Craig, B. A. (2010). Introduction to the practice of statistics (7th Ed.). New York: W.H. Freeman.

Nausea $p = 0.3750$ (n = 3, k = 1)

Participant	Before	After	After - Before	Sign
1	0	2	2	+
2	0	0	0	NA
3	0	0	0	NA
6	6	0	-6	-
7	0	0	0	NA
8	0	6	6	+

Appetite $p = 0.2500$ (n = 2, k = 2)

Participant	Before	After	After - Before	Sign
1	4	3	-1	-
2	4	4	0	NA
3	0	0	0	NA
6	10	3	-7	-
7	0	0	0	NA
8	6	6	0	NA

Shortness of breath $p = 0.2500$ (n = 4, k = 1)

Participant	Before	After	After - Before	Sign
1	0	3	3	+
2	5	7	2	+
3	0	0	0	NA
6	2	3	1	+
7	4	3	-1	-
8	8	8	0	NA

Depression **p = unable to calculate** (n = 1, k = 0)

Participant	Before	After	After - Before	Sign
1	0	2	2	+
2	2	2	0	NA
3	0	0	0	NA
6	0	0	0	NA
7	0	0	0	NA
8	0	0	0	NA

Anxiety **p = 0.2500** (n = 2, k = 0)

Participant	Before	After	After - Before	Sign
1	0	2	2	+
2	2	2	0	NA
3	3	4	1	+
6	0	0	0	NA
7	0	0	0	NA
8	0	0	0	NA

Well-being **p = 0.3750** (n = 3, k = 1)

Participant	Before	After	After - Before	Sign
1	3	3	0	NA
2	6	7	1	+
3	1	1	0	NA
6	5	2	-3	-
7	0	0	0	NA
8	8	9	1	+

Note. p = probability is in boldface, n = total number of participants who showed a difference (+ or -) in symptoms before and after horse visit, k = number of participants who showed a decrease (-) in symptoms

Appendix O

Table 6. *Quality of Life (QOL) Participant Description*

Participant	QOL Definition	Billy's Influence on QOL
1	- being able to enjoy family and friends. To be relatively pain free.	- It made me enjoy life a little bit more. - a connection [something to share with family both on PEI and from away]. - [noted that with energy levels appreciated that Billy was available to be seen either at the window or at the front door, depending on what participant felt she could do that day].
2	-Being without pain and without nausea and being able to enjoy what the average well person does. Socializing, and friends, and phone calls, and visitors, everything that I can put a spin on.	- it was part of a little something to look forward to and enjoy seeing him. -I could almost feel him.
3	-Well getting up in the morning, seeing the sun shine. Knowing one brighter day and my sickness is staying the way it is for the time being. I feel it's a gift from God [a new day]. - Just getting, being able to go to sleep, and rest, and knowing that I have another day coming if it's meant to be. Or well I enjoy every day as much as I can, I believe it's good to stay like what you said, as positive as we can.	-It made me feel good to know that he was there - the strength of him to come and visit us - I feel if I was going to hug anything it will be a horse - Peaceful. It was... I felt like wrapping my arms around his head, but I didn't. -He felt like a true companion. -I'm sure it did [Billy impacted his QOL]. Uhhh I guess he was able to come around and visit and got me thinking brighter. My future... every day is different. To know he's coming, and it might be a bad day for me and I enjoy seeing him to brighten my day.

Participant	QOL Definition	Billy's Influence on QOL
4	<ul style="list-style-type: none"> -Spending time with family - And the independence thing too. I'm not independent or anything. But anyway, I'm dependent on everybody now. -Takes it one day at a time 	-He brightened my day
5	<ul style="list-style-type: none"> - That would be that hopefully I'll live longer - So that I can see my great-grandkids growing up -[takes] each day as you can 	<ul style="list-style-type: none"> -Well he showed me that you can... enjoy every day that you have. You only got today you don't got tomorrow or tomorrow's never going to come. When tomorrow comes it's always today. -He relaxed me.
6	<ul style="list-style-type: none"> -A new set of lungs -A good day to me means... that I don't get SOB. That I don't get nauseas, like I did today. That I don't throw up, like I did today. That I don't fart and soil my underwear which I did an hour ago. And then I got to get in there, you know, and I don't want everybody getting into the... I do it myself. I wash the underwear, and I then ask them for clean underwear, you know. You know what I mean? I just, I'm just independent. What can I say? Always was. And it's not easy for me to uh, to just do whatever they say. You know what I mean? 	-Anything is a distraction

Note. [Square brackets] indicate additional information that may be helpful and are not the participant's direct quote.

Curriculum Vitae

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Conference Presentations:

Cairns, K. J. (accepted abstract). Experiences of Palliative Inpatients with Equine Therapy. The XXXVIth International Congress on Law and Mental Health. International Academy of Law and Mental Health, Rome, Italy. July 23, 2019 (Abstract published in Conference Proceedings, p. 375).

Cairns, K. J. (2017). Experiences of Palliative Inpatients with Equine Therapy. University of New Brunswick Master's in Nursing Day, Fredericton, New Brunswick. August 28, 2017.