

DISSERTATION

RIDING IN THE MOMENT: AN EXPLORATORY MIXED METHODS CASE STUDY OF
ACTIVITY SITUATIONS AND QUALITY OF LIFE OF INSTITUTIONALIZED ADULTS
WITH DEMENTIA

Submitted by

Beth E. Fields

Department of Occupational Therapy

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Colorado State University

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Doctoral Committee:

Advisor: Wendy Wood

Jason Bruemmer

Barb Hooper

Gene Gloeckner

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ABSTRACT

RIDING IN THE MOMENT: AN EXPLORATORY MIXED METHODS CASE STUDY OF ACTIVITY SITUATIONS AND QUALITY OF LIFE OF INSTITUTIONALIZED ADULTS WITH DEMENTIA

The number of adults with some form of dementia is growing, and growing remarkably fast (MBA Healthcare Management, 2017). As adults experience the progressive nature of dementia and consequently, lose functional abilities, many turn to long-term care (LTC) facilities for health care assistance. Unfortunately, LTC facilities experience challenges in providing activities to residents that allow them to participate fully and promote the use of their remaining abilities (Chung, 2004). This exploratory, mixed methods case study sought to investigate the influence of routine activity situations, in particular, an equine-assisted intervention, called Riding in the Moment (RM), on quality of life (QoL) for institutionalized adults with dementia. I used the Activity in Context and Time (Wood, 2005) to record behavioral observations of the institutionalized adults with dementia during routine activity situations at Seven Lakes Memory Care and Hearts and Horses Therapeutic Riding Center for eight weeks, four hours each day. Semi-structured interviews with five key informants from both study sites along with field notes were also gathered. First, I analyzed both data sets separately; for the quantitative data, I used nonparametric statistical testing and descriptive statistics and for the qualitative data, I employed a basic qualitative description approach. Next, I merged findings from both data sets together using a joint display method. This convergence allowed me to compare and contrast the prevalence of dementia-specific QoL indicators across routine activity situations as well as to

investigate the impact of the unique activity situation, RM, on the QoL of residents with dementia. Results revealed that RM was the only activity situation that gave rise to all optimal QoL indicators captured. As suggested in this study, residents' involvement in activity situations, a unit of analysis, can provide a detailed understanding of their dementia-specific QoL. Moreover, RM may be an effective environmental intervention that allows institutionalized adults with dementia a means to return to nature. Overall, this study aligns with and further supports that nature constitutes an important basis for institutionalized adults with dementia to thrive and attain individual fulfillment.

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Thank you for continually being my spark--your endless support and thoughtful and challenging guidance throughout my program of study inspired me to be the best version of myself.

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DEDICATION

This dissertation is lovingly dedicated to my grandmothers, Susan Minder and Evelyn Hoesly and my parents, Dale and Dawn Hoesly. Their values, encouragement, and endless love have sustained me throughout my life.

TABLE OF CONTENTS

ABSTRACT.....	ii
ACKNOWLEDGEMENTS.....	iv
DEDICATION.....	v
LIST OF TABLES	ix
LIST OF FIGURES.....	x
DEFINITION OF KEY TERMS	xi
CHAPTER ONE: INTRODUCTION	1
Background and Statement of Problem.....	2
Purpose Statement.....	6
Research Questions	6
Significance of the Study	7
Researcher’s Perspective	8
Ethical Considerations.....	9
CHAPTER TWO: LITERATURE REVIEW.....	12
Background.....	12
The personal experience of dementia	13
Environmental influences on quality of life	14
How is dementia-specific quality of life measured?.....	16
Call for more sources.....	18
Theoretical Framework	18
Meaningful occupations are necessary for quality of life.....	18
Supportive environments are necessary for quality of life.....	19
Indicators of quality of life for people with dementia.....	20
The Lived Environment Life Quality (LELQ) Model.....	23
Conclusion.....	27
CHAPTER THREE: METHODOLOGY	28
Paradigm Positioning and Fusing.....	29
Post-positivism.	30
Constructivism	31

Research Design.....	32
The case: residents with dementia involved in riding in the moment.....	33
Study sites	33
Research Implementation	34
Quantitative strand.....	35
Qualitative strand.....	43
Data Analysis.....	45
Quantitative strand.....	45
Qualitative strand.....	50
Converging the Data	52
Summary of Methods.....	52
CHAPTER FOUR: RESULTS	54
Participant Descriptors: Residents	54
Occupational profiles	54
Participant Descriptors: Key Informants	57
Quantitative Strand: Research Question One.....	57
Time use: Conversation	58
Quality of life: Apparent affect	59
Time use: Gaze.....	61
Time use: Participation	62
Time use: Position and movement.....	64
Time use: Agitation	66
Qualitative Strand: Research Question Two.....	67
Riding in the moment description	67
Describing, classifying and interpreting qualitative data sources.....	72
Merging the Strands: Research Question Three.....	83
CHAPTER FIVE: DISCUSSION.....	94
Occupationally Deadening Activity Situations	95
Occupationally Enlivening Activity Situations.....	96
Riding in the Moment.....	97
Valuing the person.....	97
Valuing nature.....	102

Strengths and Limitations of the Study	107
Relationship of Study to Occupation and Rehabilitation Sciences	111
Implications for Future Research.....	112
Implications for Practice.....	113
Researcher Revelations	115
Conclusion.....	117
REFERENCES	119
APPENDIX A: QUANTITATIVE STRAND CODING GUIDE	133
APPENDIX B: INTERVIEW GUIDE.....	136
APPENDIX C: FIELD NOTES GUIDE.....	140
APPENDIX D: MACRO ANALYSIS CROSS TABULATION RESULTS.....	141
APPENDIX E: QUALITATIVE STRAND CODING GUIDE.....	142

LIST OF TABLES

TABLE 1 CORRESPONDING LEVELS FOR THIS RESEARCH STUDY.....	29
TABLE 2 MODIFIED ACTIVITY IN CONTEXT AND TIME (ACT) TOOL.....	39
TABLE 3 PRE-ANALYSIS USING CHI-SQUARE	48
TABLE 4 POST-ANALYSIS USING CHI-SQUARE AND PHI COEFFICIENT	49
TABLE 5 QUANTITATIVE STRAND: DESCRIPTION OF RESIDENTS	54
TABLE 6 QUALITATIVE STRAND: DESCRIPTION OF KEY INFORMANTS	57
TABLE 7 PRE-ANALYSIS STAGE, STEP TWO: CONVERSATION.....	59
TABLE 8 PRE-ANALYSIS STAGE, STEP TWO: APPARENT AFFECT	60
TABLE 9 POST-ANALYSIS STAGE, STEP THREE: APPARENT AFFECT AND ANOVA TEST	60
TABLE 10 PRE-ANALYSIS STAGE, STEP TWO: GAZE.....	62
TABLE 11 PRE-ANALYSIS STAGE, STEP TWO: PARTICIPATION.....	63
TABLE 12 PRE-ANALYSIS STAGE, STEP TWO: POSITION AND MOVEMENT.....	65
TABLE 13 PRE-ANALYSIS STAGE, STEP TWO: AGITATION.....	66
TABLE 14 CODES AND SUB-CODES FROM OPEN-ENDED QUESTIONS (N=165)..	73
TABLE 15 FINDINGS FROM THE ACT CORRESPONDING WITH INTERVIEWS AND FIELD NOTES	85

LIST OF FIGURES

FIGURE 1. LIVED ENVIRONMENT LIFE QUALITY MODEL (LELQ).....	23
FIGURE 2. OCCUPATIONALLY ENLIVENING TRANSACTION.....	24
FIGURE 3. OCCUPATIONALLY DEADENING TRANSACTION.....	25
FIGURE 4. MIXED METHODS CONVERGENT IMPLEMENTATION.....	35
FIGURE 5. QUANTITATIVE DATA ANALYSIS PROCESS.....	47

DEFINITION OF KEY TERMS

1. Ability to function: “The quality of people’s functioning as calibrated to their dementia severity” (Wood et al., 2016).
2. Affordance: “Possibility of an action on an object or environment” (Gibson, 1977).
3. Alzheimer’s disease and related dementias: Characterized as a group of symptoms that are often progressive in nature resulting in loss of memory, judgment, language, and complex motor skills (Fraker, 2012).
4. Animal-assisted intervention: “Goal orientated and structured interventions that incorporate animals in health, education and human service for the purpose of therapeutic gains and improved health and wellness” (Pet Partners, 2017).
5. Caregiver: “The person who takes responsibility for someone who cannot carefully for themselves” (USLegal.com, 2016).
6. Caregiving microsystem: “The immediate face-to-face settings of daily life with physical, social, and cultural environmental features” (Wood et al., 2016).
7. Dementia: An umbrella term for a decline in mental functioning that ultimately reduces one’s ability to perform their daily activities (Alzheimer's Association, 2016).
8. Environmental approach: Therapeutic strategies that incorporate a person’s surrounding physical and social environments to elicit functional outcomes (Padilla, 2011a).
9. Environmental channeling: “Two requirements are necessary for environmental channeling: a relatively static environment that offers few opportunities for action coupled with duration of time in that environment” (Wood, 2005).

10. Environmental press: “The interaction of any context, physical, social, and interpersonal environmental stimuli that serves to elicit or press toward the expression of some behaviors and suppression of others” (M.P. Lawton & Nahemow, 1973).
11. Equine environment: Encompasses the social and physical elements typical to the setting such as the horse, barn, pastures, riding trails, volunteers, horse leader, and grooming equipment.
12. Equine-assisted intervention: A sub-type of animal-assisted intervention that incorporates equine activities and/or the equine environment to meet therapeutic goals related to the client’s needs and the professional’s standards of practice” (Professional Association of Therapeutic Horsemanship International, 2017).
13. Excess disability: Any incapacity beyond that which can be accounted for by the dementia disease, such as irreversible cognitive, physical, and affective impairments (Kahn, 1965).
14. Long-term care: “Range of services and supports a person may need to meet their personal care needs. Most long-term care is not medical care, but rather assistance with the basic personal tasks of everyday life” (U.S. Department of Health and Human Services: Administration on Aging, 2016).
15. Neuropsychiatric symptoms: Behavioral and psychological problems commonly experienced by individuals with dementia (Lyketsos et al., 2011).
16. Occupation: ‘Chunks’ of activity that are meaningful and given value by the individual and their surroundings (Law, Steinwender, & Leclair, 1998).

17. Person-centered care: “A way of providing care to people in which the unique person and their preferences are emphasized, instead of the disease, its expected symptoms and challenges, and the lost abilities of the person” (Kitwood, 1997, p. 119).
18. Personhood: “A unique sense of self that is conducive to positive experiences including feelings of confidence and competence” (Wood et al., 2016).
19. Relative being: Concerned with personhood and emotional experiences of the individual with dementia (Wood et al., 2016)
20. Time use: An individual’s relative engagement or disengagement, or how the person occupies time in given activity situations (Wood et al., 2016).

CHAPTER ONE: INTRODUCTION

People have an innate need to engage in occupations that are meaningful to them (Wilcock, 1993). *Occupations* can be referred to as ‘chunks’ of activity that are meaningful and given value by the individual and their surroundings (Law et al., 1998). For illustration, feeding animals, tending to yard work, and helping around the house could be the occupations of an elderly man. The prevalent human need for meaningful activity goes back to writings from Montaigne in the 16th century; he emphasized that engagement in life is the essence of well-being. Although *Alzheimer’s disease and related dementias*, referred to simply as ‘*dementia*’ in this dissertation, are progressive conditions marked by declining cognitive functioning, people with dementia still have an innate need for meaningful activity. Unfortunately, *long-term care* (LTC) facilities, where many people with dementia reside, experience challenges in providing activities to residents that allow them to participate fully and promote the use of their remaining abilities (Chung, 2004). As a result, people with dementia can become disengaged, depressed, and lose functional abilities. These negative effects coupled with the progressive nature of dementia are detrimental to the overall quality of life (QoL) experienced by people with dementia. Recent LTC efforts have begun to search for innovative and therapeutic activities that aim to meet the needs and desires of their residents with dementia in order to optimize QoL (Sloane et al., 2005).

My dissertation explored a promising and unique nonpharmacological approach to improving the QoL of people with dementia. This approach engaged residents from a LTC facility in direct experiences with horses at an established therapeutic riding center. Moreover, this dissertation has two aims: (1) to compare and contrast the prevalence of dementia-specific

QoL indicators across routine activity situations for adults with dementia in an institutional home, and (2) to investigate the impact of a unique activity situation, an *equine-assisted intervention* (EAI), on the QoL of residents with dementia. The study could help to legitimize the perspectives and health concerns of the residents involved in the study and, moreover, have positive translational impacts. That is, if improvements in QoL due to participation in the EAI are realized, then findings may inform the development of innovative interventions tailored to the interests of people experiencing dementia.

This chapter begins with a brief background of dementia and LTC. Next, *animal-assisted interventions* (AAI), a promising therapeutic approach for enhancing the QoL of people with dementia in LTC, is presented. This information is followed by the study's statement of purpose, the definition of key terms, and significance. I then share a personal account related to the study and its context. Lastly, I provide some ethical considerations for the study.

Background and Statement of Problem

Today, 5.4 million Americans are living with Alzheimer's disease and this number is expected to increase dramatically to 13.8 million by 2050 (Alzheimer's Association, 2016). Consequently, dementia care cost the United States more than 236 billion dollars in 2016 (Alzheimer's Association, 2016). Admission into LTC facilities continues to grow each year where the majority of residents, roughly 60-80%, are diagnosed with dementia (Centers for Disease Control and Prevention, 2013). Due to the progressive nature of dementia, there becomes an increased need to monitor and supervise people with dementia for safety and optimal functioning. As a result, *caregivers* of those experiencing dementia often turn to LTC facilities when symptoms become too difficult to handle at home. Additional predictors of LTC placement for those with dementia include an increase in a caregiver's burden, depression, and work-related

stressors (Lee, Hui, Kng, & Auyeung, 2013). Likewise, Gaugler, Duval, Anderson, and Kane (2007) found that older adults with dementia who are more dependent on self-care tasks and have severe cognitive impairments were more likely to be admitted into LTC facilities.

Therefore, individuals admitted into LTC facilities characteristically require 24-hour specialized care for extended or indefinite periods. Typically these individuals do not experience functional recovery and are unsafe at home (Roberts & Evenson, 2009).

In addition to growing reliance on LTC residential facilities, more and more individuals continue to be diagnosed with dementia. Unfortunately, many people with dementia residing in LTC facilities experience a degraded QoL. For these reasons, health-related disciplines have escalated efforts to treat dementia. Within the last decade, care efforts have shifted from how care is delivered to how care affects residents with dementia (Sloane et al., 2005). Given this shift in focus, outcomes do not solely center on the quality of care but also consider the QoL of residents. QoL is frequently linked to the quality of care persons with dementia experience on a regular basis (Robnett, 2002). M.P. Lawton (1991), a leading researcher in examining QoL specifically for people with dementia, suggests that QoL should be viewed as multidimensional in nature. That is, the focus should not be on just one factor related to health but, rather, it should be comprehensive and holistic in nature. Specifically, M. P. Lawton (1994) shares four areas for evaluation of QoL: psychological well-being, behavioral competence, environment, and perceived QoL.

In an attempt to begin to comprehensively understand and care for people with dementia, research studies have focused on analyzing the many factors contributing to a person's QoL including environmental influences. In 1997, a consensus statement was published in the *Journal of American Medical Association* that encouraged *environmental approaches* to treating people

with dementia as alternatives to over-reliance on psychotropic medications (Small et al., 1997). In 2011, six systematic reviews published in the *American Journal of Occupational Therapy* similarly generated strong evidence that occupational therapists ought to focus on the personal contexts and environments of people with dementia, rather than restorative treatments (Padilla, 2011b).

One nonpharmacological and unique environmental approach that is gaining popularity for enhancing QoL for people with dementia are AAIs, or goal-oriented, structured interventions that incorporate animals to promote a person's mental, physical, social, and emotional functioning (Pet Partners, 2017).

When used in dementia care, AAIs are often implemented to elicit human-animal bonds that may reduce problem behaviors and facilitate engagement and communication (Nordgren & Engström, 2012). By acting as a “bonding agent,” the animal places “elders with dementia at ease, in a state of immediate intimacy, and positions the professional as less threatening,” thus creating a welcoming environment for behavior change (Sellers, 2006, p. 63). Nordgren and Engström (2013) found that incorporating a dog as part of an intervention enhanced QoL as gauged by increases in observable participation in activities and emotional well-being for institutionalized individuals with late stage dementia. Studies have also shown that with AAI, individuals with dementia experienced significant decreases in agitation and other problematic behaviors (McCabe, Baun, Speich, & Agrawal, 2002; Richeson, 2003). Other findings illustrate that AAIs can result in more engagement, often observed through smiling, language expression, touch, and other social behaviors among individuals with dementia (Churchill, Safaoui, McCabe, & Baum, 1999; Greer, Pustay, Zaun, & Coppens, 2002; Kongable, Buckwalter, & Stolley, 1989).

For the past two years, I was part of a research team that conducted a systematic mapping review to comprehensively describe, categorize, and evaluate the knowledge base of equine-assisted activities and therapies (EAAT). EAAT are a subset of AAI that enable physical, cognitive, and psychosocial abilities of participants through the use of the horse and larger *equine environment* (Professional Association of Therapeutic Horsemanship International, 2017). I identified only one paper for the dementia population in the literature on EAAT (Dabelko Schoeny et al., 2014). This study investigated the effectiveness of equine-assisted therapy (EAT) to improve the physiological and behavioral states of individuals with dementia. Indeed, Dabelko Schoeny et al. (2014) found that people with dementia who participated in an equine program engaged positively with the horses and demonstrated fewer behavioral problems. In addition, in comparison to other forms of AAIs, this study noted the influence of the equine environment:

the positive impact could be the result of an enriched environment such as the barn with a woods environment...this provided a surrounding that was complex, facilitated learning, and was socially stimulating, and therefore was not reliant on a single factor such as the horse, but rather a combination and interaction of several factors that appeared to stimulate change (p. 151).

While these findings are promising, the authors suggested that future research should next investigate if the behavior changes during the program generalize to an individual's home environment, determine what elements of the equine program promote positive behaviors and for which kind of participant, and explore additional dementia-specific QoL measures that record not only personal affect but environmental experiences.

The limited research in this area presents two main concerns: (1) a lack of knowledge to guide professionals caring for institutionalized people with dementia involved in EAAT, and (2) an ethical dilemma in the use of an EAI that is not evidence-based for the dementia population. First, given the lack of literature about EAIs for older adults with dementia, little information is

available to professionals to guide their treatment or activity planning. The scarcity of research hinders program development and leaves much up to a professional's discretion for planning. Secondly, professionals face an ethical dilemma with the limited research: health professionals are strongly encouraged to implement evidence-based approaches to provide quality care. In order to guide professionals and promote evidence-based practice, considerably more research is needed in the area of EAIs for older adults with dementia.

Purpose Statement

The purpose of this exploratory, mixed methods case study was to investigate the influence of routine activity situations, in particular an EAI, on the QoL for adults with dementia residing in an institutional home. Specifically, interrelationships among routine activity situations at a LTC facility and QoL indicators, daily time use and apparent affect, were investigated. Routine activity situations are “bouts of time that are readily recognizable because they routinely happen at designated times of a day in specific facilities” (Wood, Harris, Snider, & Patchel, 2005, p. 123). For instance, meal and snack times are activity situations that occur in the LTC facility, and an EAI is an activity situation that occurs at a therapeutic riding center. Direct behavioral observations of people with dementia and their involvement in daily activity situations were collected. In addition, interviews were conducted with key informants most familiar with the people with dementia and the EAI to explore their perceptions of the environmental influences with QoL for people with dementia along with field notes.

Research Questions

Three broad research questions were asked:

- 1) What associations, if any, exist among routine activity situations in a LTC facility and dementia-specific QoL?

- 2) How do key informants (i.e. those frequently involved in the daily lives of individuals with dementia) perceive and explain the impact of the EAI in comparison to activity situations that occur in the LTC facility on the QoL of residents with dementia?
- 3) How do the perspectives of key informants and field notes help to explain the influence of an EAI on dementia-specific QoL?

Significance of the Study

The premise of this study was based on previous studies that suggest benefits of AAIs and environmental strategies on problem behaviors for people with dementia (Hoppes, Davis, & Thompson, 2003; Sellers, 2006; Wood, Fields, Rose, & McLure, 2017) suggesting the possibility that EAIs may also favorably enhance QoL. These positive outcomes are promising, given that many dementia studies have shown that problem behaviors such as agitation, apathy, and irritability negatively impact QoL (Lyketsos et al., 2011; Samus et al., 2005; Wetzels, Zuidema, de Jongbe, Verbey, & Koopmans, 2010). Correspondingly, an EAI may provide those with dementia an opportunity for purposeful and meaningful engagement. That is, horses and their environments offer opportunities for nontraditional therapeutic activities; the person with dementia is taken away from a facility associated with disability and impairment to experience a natural environment that elicits more meaning for the individual.

With this study, I hope to advance knowledge of institutionalized dementia care through understanding the interrelationships among the social and physical stimuli of routine activity situations and their impact on QoL of adults with dementia. In particular, exploring an EAI may illuminate similar or different environmental influences on QoL in comparison to activity situations that occur in a LTC facility. Therefore, findings may augment the daily lives of people with dementia and could add to the current AAI literature and provide health care professionals

an increased understanding of environmental influences on QoL. As a researcher, I anticipate that findings may also guide enhancements to programming that fosters unique opportunities to maximize functioning and optimal well-being for those residents with dementia in LTC.

Researcher's Perspective

My decision to become a scholar of dementia care is personal. Several years ago, my grandmother was diagnosed with Alzheimer's disease that quickly progressed to the point where she needed 24-hour LTC assistance. Thinking back to various moments spent with my grandmother, the deficits of my grandmother's dementia obscured my view of her as the woman I had once known and loved. As the disease progressed and her cognitive capacities dwindled, she found herself having less motivation and lost her interest in activities that she had once loved. I rarely observed any of her formal caregivers encourage her to pursue past or new occupations. Eventually, she would only leave her room for meals and sometimes even this was a challenge. After a year in the facility, she fell asleep one night and never woke up. For a long time, all I could think of was my grandmother and how she spent the last year of her life in a way that I know she would not have wanted to live.

My perception of dementia quickly changed as I became an occupational therapy student. Early in my career, I had the opportunity to assist LTC residents in Riding in the Moment, an EAI offered at Hearts and Horses Therapeutic Riding Center in Loveland, CO. I observed a session one Friday morning and witnessed the residents engaged and participating in activities with the horses and others involved in the program. A staff member from the LTC facility described the program's impact on one of the residents: a woman, observed to nap in her wheelchair during in-facility activities, who decided to stand up, groom a horse, and hum a song aloud in the arena, eliciting many functional behaviors plus seemingly emotional well-being!

This moment sparked my interest in devoting my career to help people with dementia and their families.

Reflecting on my early experiences of dementia through my grandmother's course with the disease, I now see that many of the challenges that she regularly encountered were not due to the progressive nature of the condition alone. I firmly believe that "people thrive when their personalities and needs are matched with environments or situations that enable them to remain engaged, interested, and challenged" (Christiansen & Townsend, 2010, p. 26). It is my responsibility as a researcher to continue to search for ways that enable people with dementia to "thrive" such as through positive human-animal interactions; something I wish had been available for my grandmother.

Ethical Considerations

When conducting human subject research there are many ethical considerations to review prior to initiating a study. In 1979 the United States National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, now the Department of Health and Human Services, published a document highlighting three basic ethical principles involving human subjects: (1) respect for persons; (2) beneficence; and (3) justice (Kielhofner, 2006).

The first principle, respect for persons, "asserts that human persons must be respected in terms of their right to self-determination" (Kielhofner, 2006, p. 468). More so, this principle emphasizes the importance of the participant's ability to make his or her own choices and provide consent. For this study, I recognized the need to obtain assent of the participants to the extent they are able to provide, as well as the permission of a health care proxy due to the cognitive decline of the participants.

The second principle, beneficence, stresses that research minimize risk and maximize potential benefits of participation in the study. Here, the “risks must be reasonable in relation to the potential for benefit to be derived from the research” (Kielhofner, 2006, p. 478). Reflecting on my research design, risks that I considered included physical and mental discomforts that may have been experienced by those involved in the equine environment. Being around a large animal such as a horse poses a safety concern. I also understood that participants may not have regularly attended the equine intervention (i.e. the Riding in the Moment program) due to physical or mental related problems on a given intervention day. It was my responsibility to take every precaution and make every effort to anticipate and prevent participant discomfort or harm throughout the study process.

Lastly, principle three, justice, “requires that the research impose the burden of risk and the potential for benefit upon the same groups of people” (Kielhofner, 2006, p. 479). Here, I specifically examined the composition of each group within the study. That is, the opportunity to participate in the study was open to all people with dementia at the LTC facility that met safety screening considerations. To follow these principles and ensure research integrity in the conduct of human subject research I completed the following:

- 1) Communicated research study objectives to involved participants, including those with dementia, primary caregivers, and staff at study sites.
- 2) Received informed assent and surrogate permission in writing before the initiation of the study.
- 3) Completed an Institutional Review Board (IRB) and Institutional Animal Care and Use Committee (IACUC) protocol through the Colorado State University’s Research Integrity & Compliance Review Office.

- 4) Provided participants and study sites detailed descriptions of data collection methods.
- 5) Offered all participants involved in study access to reports and findings from the study.
- 6) Communicated to participants their rights to remove themselves from the study at any time.

CHAPTER TWO: LITERATURE REVIEW

This literature review begins with an in-depth review of dementia and its relationship to quality of life (QoL). Next, QoL measures for dementia are explored to illuminate the complexity of defining and understanding QoL for people with dementia. Lastly, the theoretical framework and rationale for the study are described.

Background

As introduced in chapter one, the number of Americans living with some form of dementia is growing, and growing fast. Worldwide, there are 7.7 million number of new cases of dementia each year and this number is expected to increase to 135 million by 2050. More startling there is a new case of dementia somewhere in the world every four seconds (MBA Healthcare Management, 2017). In the United States, Alzheimer's disease, the most common form of dementia, is the sixth leading cause of death (Alzheimer's Association, 2016).

Unfortunately, as the condition progresses, people require more assistance with daily needs and activities and, hence, they and their caregivers often turn to long-term care (LTC) facilities for care. In recent decades, LTC efforts have reflected a growing recognition and understanding of QoL, in order to promote respect for residents with dementia and guide care and treatment (Moyle, 2010; Sloane et al., 2005). Yet while providing a good QoL for institutionalized people with dementia epitomizes an important aim, it also presents many challenges. These challenges pertain to the variety of factors that influence the QoL of people with dementia residing in LTC facilities, including their personal experience of dementia and various environmental factors.

The personal experience of dementia. Dementia is characterized as a group of symptoms that are often progressive in nature, resulting in loss of memory, judgment, language, and complex motor skills (Fraker, 2012). Besides these hallmark characteristics, individuals may experience behavioral and psychological problems, also known as *neuropsychiatric symptoms* (Lyketsos et al., 2011). These assorted challenges interfere with daily life as they affect the individual's ability to initiate, effectively perform, and engage in desired activities. As a result, people can feel sad and depressed, nervous and fearful, and angry and agitated, among other negative emotional experiences such as bored, lonely or abandoned. Generally, dementia progresses slowly through mild, moderate, and severe stages. While people in the mild stage can function independently, they may experience memory lapses, word-finding difficulties, executive function challenges; they may also frequently lose or misplace objects. The moderate stage is characterized by more noticeable impairments that require increased assistance with daily activities. Common symptoms include forgetfulness about one's life story, disorientation, incontinence, disruptive behaviors, and changes in sleep patterns. In the severe stage, individuals lose their ability to control movement, effectively communicate and continue to lose their memory and cognitive skills, making it very difficult to respond to their surrounding environment. Individuals in the severe stage require full-time assistance with all daily tasks, as they not only lose cognitive capacities but also experience declining physical functioning (Fraker, 2012).

While each person experiences dementia differently as the disease progresses, those experiences are often difficult and painful, and thus negatively affect their QoL. For instance, in the mild stage of dementia, people may feel a sense of frustration when they are not able to balance their checkbooks accurately, or they may experience a sense of uselessness when they

are unable to complete housework tasks that they were once able to do. Research shows that up to 90% of people with dementia experience depressed feelings and apathy, and such conditions affect QoL (Moyle, 2010). Coupled with experiences of negative affect are a lowered self-esteem and a decreased sense of belonging. That is, many individuals, especially those residing in LTC, face challenges in developing relationships with other residents and staff, lose the ability to express their identities or hold onto some semblance of themselves, and are limited in their autonomy or their rights to make choices in directing their own care (Kane, 2001).

Environmental influences on quality of life. “There is ample evidence that the social and physical environments can influence QoL for better or worse” (Kane, 2001, p. 299). The social environment is multilayered and includes (1) interpersonal relationships such as those with caregivers and friends; (2) social groups to which an individual belongs; and (3) on a larger scale, cultural systems that can impact an individual’s daily life (Lysack & Adamo, 2014). As Kane (2001) noted, “Relationships make life worth living” (p. 297). Thus, to enhance QoL, residents with dementia need to receive support and confidence from not only family and friends, but also other residents and paid caregivers. Yet empirical evidence suggests that caregivers interact significantly less with people with dementia as the cognitive decline progresses (Kane, 2001). Correspondingly, residents experience lengthy periods without companionship or opportunities for social engagement. For instance, a participant with dementia in the study by Moyle et al. (2011) stated, “It’s a bit boring just sitting here, I’ll be sitting here now until tea time” (p. 974).

People with dementia are also vulnerable to the prevailing cultures of care of their LTC facilities, whether pessimistic or optimistic. Wells and Dawson (2000) described a pessimistic approach to care for people with dementia as such: “If professionals believe that there will be a

progressive loss of human abilities (cognitive and functional) based on general descriptions of dementia...professionals may perform caregiving activities that the residents have the ability to do” (p.7). Moreover, caregivers’ negative reactions to dementia-related behavioral and psychological symptoms, or their lack of understanding or misconceptions of dementia, can increase residents’ isolation. Burnout, a common phenomenon experienced by caregivers in LTC, is often due to the emotional and physical challenges of working with individuals with dementia. In addition to burnout, LTC facilities can face challenges in implementing care that is individualized to the LTC resident. Indeed, research has demonstrated that LTC caregivers pay insufficient attention to learning about who the resident with dementia *is* as a person (Moyle et al., 2011). Caregiver retention is also often low in LTC facilities due to increased work intensity. Likewise, activities offered in LTC are often limited due to available staff. Moyle et al. (2011) reported that many staff feel too busy completing tasks around the LTC facility to be able to engage residents in meaningful activities. Instead, the prevalent go-to solution for caregivers in “treating” many of the symptoms associated with dementia (i.e., problem behaviors) involves the use of psychotropic drugs (Schneider, Dagerman, & Phillip, 2005). This solution does not reliably improve QoL, as many of these drugs cause adverse side effects such as worsened temporal orientation and increased functional dependence (Padilla, 2011b).

On the other hand, the culture of care can be optimistic, in which residents in LTC facilities are recognized as people with a past, a present, and a future (Lawton, Van Haitsma, & Perkinson, 2000). Many LTC facilities are beginning to place an emphasis on *person-centered care* (Kitwood, 1997). Here, caregivers strive to develop a relationship with the person with dementia that encourages meaning-making through an understanding of the person’s past. An example of person-centered care is when a family member communicates to staff that his mother

enjoyed listening to Patsy Cline, and, as a result, this music is played during his mother's morning routine. Also, a person-centered approach to care focuses on the resident's needs, preferences, and expectations. LTC facilities implementing person-centered care will base key decisions around the person including how meals are served and how bathing is offered to how activities are structured. This optimistic care approach is integral to the concept of culture change in LTC, and is increasingly viewed as a crucial aspect of delivering quality care to residents.

Elements of the physical environment can also impact a resident's QoL both negatively and positively (Dilani, 2001; Zeisel, 2006). Physical environmental elements, including the layout of a space, personal items, and adaptive equipment (Seamon, 2014), can hamper a person's ability to participate in daily activities. For example, a person residing in LTC may frequently get lost and not find the correct room due to unfamiliar aesthetics. In addition, facilities can be limited in financial resources. For instance, a facility may not be able to afford a bus for transportation to outings. As a result, residents will have fewer opportunities for engaging and interacting with others in the world beyond their LTC facilities. The physical environment can also enable participation. That is, a person may be more motivated to participate in an activity if photographs or signs are used to help cue the individual during the task, or if distractions such as sounds and clutter are eliminated (Padilla, 2011a).

How is dementia-specific quality of life measured? Given the difficulties that people with dementia can experience, especially when residing in a LTC facility, it is important to measure QoL. To date, the exploration of the conceptualization of QoL in residents with dementia has been multifaceted given the continually growing literature base. There exist broad definitions of QoL; however, many definitions have been influenced by the work of Lawton (1994). He suggested that QoL is best understood through what a person experiences (i.e.,

objective component), as well as through how a person feels about the experience (i.e., subjective component); therefore, QoL should include aspects related to (1) well-being (e.g., positive and negative affect); (2) behavioral competence (e.g., functional abilities); (3) environment; and (4) perceived health.

There are a range of dementia-specific QoL assessments that incorporate a number of QoL domains such as behavioral competence and perceived health. For instance, one assessment, the Alzheimer's Disease Related Quality of Life (ADRQL), asks that a caregiver describe behaviors related to five QoL domains: social interaction, awareness of self, feelings or mood, enjoyment of activities, and response to surroundings. While this measure incorporates diverse domains of QoL, one limitation of the tool is that it lacks the QoL perspective from the resident with dementia. Conversely, Albert's (1996) Quality of Life in Dementia (QOL-D) questionnaire can be completed by either the resident or a caregiver. This questionnaire measures memory, functional abilities, interpersonal relationships, mood, and ability to participate in meaningful activities. However, when using the QOL-D, questions capture little information pertaining to environmental influences and their potential to support or hinder overall QoL.

Two common direct observational measures for dementia-specific QoL are Dementia Care Mapping (DCM) (Bradford Dementia Group, 1997) and the Philadelphia Geriatric Center Affect Rating Scale (PGC-ARS), developed by Lawton et al. (1996). DCM captures three domains of QoL: activity, well-being, and ill-being. The PGC-ARS measures QoL by observing facial expression, communication, and body movement. Direct observation measures such as DCM and PGC-ARS are advantageous for the dementia population, as many residents face difficulties responding to QoL measures due to lack of memory, awareness, and language skills.

However, using direct observation takes a great deal of time and also increases the possibility of bias from the observer.

Call for more sources. The progressive nature of dementia and increasing need for care presents a challenging issue for understanding and improving QoL. To date, there is no “gold standard” for measuring the influences on QoL for residents with dementia (Sloane et al., 2005). However, Lawton (1997) called for exploration of multiple instruments and sources in order to capture the experience of dementia comprehensively and both objectively and subjectively. Sloane et al. (2005) further added that “by looking for congruence and incongruence between sources and by attempting to explain observed differences in QoL scores,” (p.38), QoL can ultimately be better interpreted. A clearer understanding of QoL throughout the progression of dementia can guide treatment and improve the everyday experiences of people with dementia.

Theoretical Framework

A theoretical framework, one that integrates key occupational, environmental, and QoL concepts, guides this exploratory case study. Together, this framework accentuates the meaning of an occupational perspective for understanding experiences of adults with dementia and their surrounding environments.

Meaningful occupations are necessary for quality of life. Even though people with dementia experience declines in cognitive and other functional abilities, their innate needs for meaningful occupations remain (Chung, 2004). *Occupation* can be described as activities of daily life that are given meaning by an individual (Law et al., 1998). Several examples of occupations include a mother who prepares meals every night for her family, and a professor who grades final exams at the end of the semester. Indeed, the need for meaningful occupation can be illuminated by a statement by Davis and Polatajko (2010), that humans “derive meaning

in their lives through what they do” (p. 137). The ability to “do” is shaped by an individual’s preferences, needs and desires, habits, retained capacities—whether physical, cognitive, sensory, perceptual, or social—as well as by the surroundings in which the individual is exposed. Correspondingly, Wood, Lampe, Logan, Metcalfe, and Hoesly (2016) found that care practices that do not support or sustain the person’s existing skills or provide activity opportunities that tap into the person’s full range of skills and capacities suppress that person’s expression of positive behaviors. Moreover, people, their everyday occupations and environments, are inseparable. That is, Hooper and Wood (2014) shared that “occupations that are meaningful to clients . . . occur in an interconnection between the environment and the client” (p. 43). Notably, Hasselkus (2011) suggested that viewing individuals as tightly connected with their environments can positively influence health and overall QoL.

Supportive environments are necessary for quality of life. The environmental perspective of this study draws specifically on the concepts of activity situations and environmental press from the Lived Environment Life Quality (LELQ) Model (Wood et al., 2016). Staff and administrators of LTC facilities determine the timeframes, the purposes, and the forms of daily activity situations, which may include television time, story time, exercise groups, music groups, and even an equine-assisted intervention (EAI).

The daily experiences of residents with dementia are presumed to be influenced by the fit for the person with dementia and his or her participation in activity situations—a function of an environmental press. The term *environmental press* refers to the interaction of any context, physical, social, and interpersonal environmental stimuli (M.P. Lawton & Nahemow, 1973) that “serves to elicit or press toward the expression of some behaviors and suppression of others” (Wood, Womack, & Hooper, 2009, p. 338). A study conducted by Wood et al. (2009) illustrates

the concept of environmental press. These researchers found that environmental presses generated by the physical and social stimuli of certain activity situations had direct positive and negative influences on QoL. For instance, the physical and social stimuli of meal and snack times positively elicited residents' abilities to engage in the "overlearned repetitive tasks of eating and drinking," whereas, the "physical stimulus of television time tended to overwhelm and immobilize residents" (p. 347). Another example of a supportive environmental press might be two residents who both grew up on a ranch, and are encouraged by a caregiver to go into a common room, look at different ranch photos, and converse with one another about their shared experiences. Physical environmental elements of this ranch example included: the built environment as the facility and common room, and physical objects representing the photos being discussed. Social environmental elements of this ranch example included: the encouragement from the caregiver and the discussion among the residents. In addition, this example included an interpersonal environmental element: ranching experience.

Another environmental concept similar to environmental press is *affordance*. The affordances of the environment influence the occupational engagement available to LTC residents with dementia, or more simply, the possibilities for specific actions. Wood et al. (2005) shared that QoL is associated with supportive environments that enable meaningful engagement for people with dementia. To illustrate the concept of affordance an example is provided. One staff member learns that a resident loves to garden. On a beautiful, sunny day, the staff member sets up a table with gardening tools and helps the resident outside to the 'gardening area'. The resident immediately begins to plant a flower in a small pot.

Indicators of quality of life for people with dementia. The environmental press of specific activity situations can be observed based on how people with dementia typically occupy

their time and their related apparent affect, two indicators of QoL (Wood, Womack, & Hooper, 2009). *Time use* refers to an individual's relative engagement or disengagement, or how the person occupies time in given activity situations (Wood et al., 2016). For example, say a LTC resident is very organized and structured, as observed by his tidy bedroom. Yet, this same resident dislikes participating in activities offered throughout the day, as evidenced by his displayed agitation. An activity situation that promotes engagement through meaningful activity would be cleaning up and organizing materials after certain groups. According to Wood et al. (2009), it is crucial that LTC residents with dementia be able to occupy time in meaningful and purposeful occupations throughout the day. Christiansen and Townsend (2010) further described meaning in occupations related to time by stating, "Individuals understand the meaning of their lives by considering their occupations as part of their life story, and these occupations gain meaning over time by becoming part of an individual's unfolding autobiography or personal narrative" (p. 13).

Unfortunately, residents can also experience missed opportunities that would have supported engagement and preserved capacities through meaningful participation. For instance, a resident might not be encouraged to participate in a morning routine; instead, the staff at the LTC completes self-care for the resident. Altogether, 'doing' self-care for the resident can contribute to *excess disability*. Excess disability is any incapacity beyond that which can be accounted for by the dementia disease, such as irreversible cognitive, physical, and affective impairments (Kahn, 1965). Over time, and even though this resident had previously retained some of the capacities needed to actively participate in his own self-care, he becomes dependent due to excess disability, ultimately fueled by the force of *environmental channeling*.

Environmental channeling elevates the significance of the environment's role on individuals with dementia in LTC. According to Wood, Towers, and Malchow (2000), two requirements are necessary for environmental channeling: "a relatively static environment that offers few opportunities for action coupled with duration of time in that environment" (p. 13). Wood et al. (2005) suggested that environmental channeling can heighten excess disability. That is, over time, the environment can influence daily time use patterns of a LTC resident with dementia in ways that accelerate the decline of functional abilities, health, and overall QoL. For example, before moving into a LTC facility, Margo loved to garden, sing and complete craft projects. After six months of living in the LTC facility and being disengaged during activity groups that did not interest her, she no longer continued her hobbies. In effect, Margo's environment channeled her previously broader range of skills into a prevailing narrow habit of sitting alone in her bedroom.

An individual's relative being can be observed based on his or her apparent affect (Wood et al., 2016). *Relative being* is concerned with personhood and emotional experiences of the individual with dementia. Hasselkus (2011) described the importance of a person's ability to engage in life's daily activities in order to support well-being. Moreover, being able to do what one chooses, and to continue doing that for as long as possible, ensures a sense of personhood, or "a unique sense of self that is conducive to positive experiences including feelings of confidence and competence" (Wood et al., 2016, p. 16). During such experiences, people often exhibit positive affects indicative of, for instance, interest, satisfaction, pleasure, or happiness. Moyle (2010) described positive affect as "the subjective experience of feeling happy, content, and having hope" (p. 248). However, people with dementia can also experience a sense of ill-being, as observed through negative affect. Negative affect encompasses feelings of worry, depression,

anxiety, and nervousness. A person’s apparent affect in the moment can come and go depending on internal and external situations (M.P. Lawton, Van Haitsma, Perkinson, & Ruckdeschel, 2000). For example, a person during an exercise group may show interest through smiling and participating in a balloon toss; however, that same person—after a short time in the exercise group—may become anxious as more people begin to join the group. Altogether, how a person occupies time and the person’s related apparent affect are observable, and they provide a means for understanding the QoL of residents with dementia in LTC.

The Lived Environment Life Quality (LELQ) Model. The LELQ Model is a conceptual practice model that was developed to help guide health services for institutionalized adults with dementia (Wood et al., 2016). There are two primary domains of the LELQ Model (Figure 1). The lived environment domain, which is the focus of assessment and intervention, encompasses the subdomains of the *caregiving microsystem*, the person with dementia, and an environmental press. The quality of life domain, which is the focus of intervention goals and outcomes, includes subdomains related to time use, *ability to function*, and relative being.

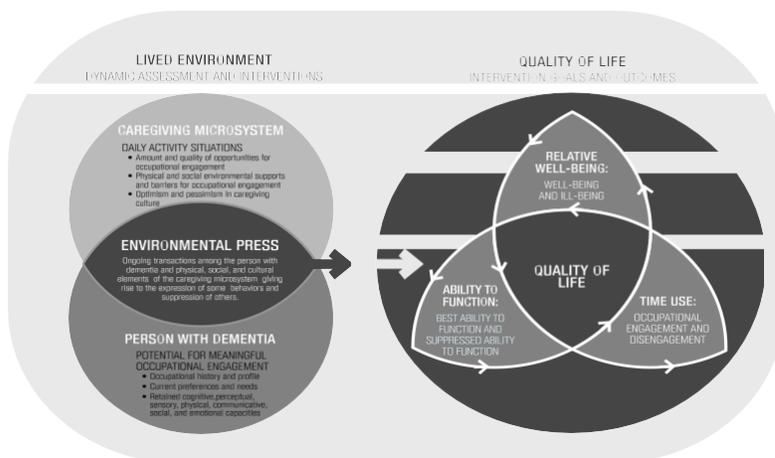


Figure 1. Lived Environment Life Quality Model (LELQ)

While key concepts from the LELQ Model (Wood et al., 2016) (i.e., activity situation, environmental press, etc.) were expounded in previous sections, a detailed explanation of the transactional nature of the LELQ Model has yet to be explained. A transactional perspective views the individual and context as a co-constituted whole ((Dickie, Cutchin, & Humphry, 2006), where context and an individual’s behavior are viewed as codependent components. Therefore, the LELQ Model suggests that environmental presses shaped by interdependent aspects of the individual-environmental stimuli of activity situations may have immediate influences on QoL, ranging from occupationally enlivening to occupationally deadening experiences.

Figure 4 and Figure 5 illustrate this relational conceptualization. When the lived environment circles are overlapped to a greater extent, then an occupationally enlivening environmental press towards more positive QoL experiences occurs (Figure 2). Occupationally enlivening presses are more probable in supportive caregiving environments, where attention is paid to physical, social, and interpersonal environmental stimuli. The strong overlap generated from the lived environment domain, is suggestive that the woman may be experiencing occupational engagement, functional competence and relative well-being in the moment.



Figure 2. Occupationally enlivening transaction

On the other hand, Figure 3 illustrates little overlap of the lived environment domain, consequently generating an occupationally deadening environmental press, suppressing QoL. Occupational deadening presses are most likely to occur when environmental elements interact in such a way that the person with dementia is unsupported.



Figure 3. Occupationally deadening transaction

Altogether, the LELQ Model augments my theoretical rationale and further, serves to guide my understanding of the influence of activity situations on QoL for adults with dementia. In particular, this study emphasizes the significance of meaningful occupation and supportive environments as influences on daily time use and apparent affect, two indicators of QoL. Residents with dementia were the source of inspiration for this study. It is important to remember that each individual is unique and thus will perform differently from others as the dementia disease progresses. For this reason, the quality and consistency of presented opportunities tailored to residents' preferences and past experiences are of paramount concern for supporting meaningful time use, positive emotional experiences, and a sense of personhood. Moreover, to prevent excess disability and enhance QoL, residents with dementia need opportunities that matter to them and that encourage use of their physical capacities and skills during everyday activities. While some

studies have examined the activities that residents with dementia engage in and their states of well-being as associated with QoL (Chung, 2004; Moyle et al., 2011; Wood et al., 2009), the implementation of meaningful occupations and supportive environments has been neither consistently nor strongly associated with QoL outcomes.

Given this lack of definitive findings, for this study I employed a case study approach to explore the influence of routine activity situations on QoL of residents from one LTC facility, the mission of which was consistent with the promotion of person-centered care and, thereby, enlivening environmental presses. That is, I strived to understand each resident's past and current preferences in order to discern the resident's potential for meaningful engagement in various activity situations.

As introduced in Chapter One, a unique activity situation for which the LTC facility played an instrumental part in determining the timeframe and purpose for the residents was an EAI called *Riding in the Moment*, or simply RM as referred herein. Rich explanations of the expression and suppression of behaviors during various activity situations, including RM, illustrate environmental dynamics that influence QoL. Specifically, behavioral observations were collected along with in-depth interviews to comprehensively capture the interrelationships among chosen activity situations, time use and apparent affect.

This study's emphasis on discerning the interrelationships of the physical and social natures of activity situations and the QoL of residents with dementia informed the selection of the Activity in Context and Time (ACT) (Wood, 2005) as the study's primary measure.

Specifically, the ACT, grounded in an occupational science perspective, is an observational measure of patterns of time use and emotional well-being in context of specific activity situations. Key informant interviews were used to obtain different, and perhaps complementary,

data to best understand environmental influences on QoL of residents with dementia. Moreover, these interviews engaged key informant's in discussions about their perceptions on how residents occupy time and the residents' related apparent affect during activity situations at both a LTC facility and a therapeutic riding center.

Conclusion

Residents with dementia experience a challenging lifestyle. Not only do they struggle with the progressive condition, but they also encounter environmental limitations. With the number of people with dementia growing, more people will require institutional care, such as that from LTC facilities. Many LTC facilities recognize the need to understand how their care efforts affect residents. It has become essential to explore the QoL of residents with dementia to not only better understand the experience of dementia but also, most importantly, assist in improving care and treatment.

Researching the daily experiences of residents with dementia illuminated interrelationships among routine activity situations at a LTC facility and QoL indicators: daily time use and apparent affect. Moreover, studying routine activity situations of institutionalized persons with dementia may provide health professionals with a greater understanding of the needs and preferences of the residents and enable those professionals to provide more alternative environmental approaches, such as the activity situation of RM. An EAI presents a fruitful opportunity to paint a more holistic picture that encompasses the transactional nature of individual factors, occupations, and the surrounding environment in pursuit of positively influencing QoL for people with dementia residing in LTC. The following chapter examines the paradigmatic approach and proposed methods that guided the study.

CHAPTER THREE: METHODOLOGY

This chapter elucidates the methodology of the study. The study utilized guidelines of a mixed methods approach presented by Creswell (2013) and Creswell and Plano-Clark (2011). Thus, based on this approach, the study's paradigmatic positioning, research methods, quality indicators and implications are highlighted.

This exploratory, mixed methods case study illustrated interrelationships among routine activity situations at a long-term care (LTC) facility and quality of life (QoL) indicators: daily time use and apparent affect. In particular, the activity situation of the equine-assisted intervention (EAI), RM, was accentuated to discern the influence of the equine environment upon QoL for people with dementia in LTC. These broad research questions were asked:

- 1) What associations, if any, exist among routine activity situations in a LTC facility and dementia-specific QoL?
 - a. Hypothesis 1: There will be significant associations between the activity situation of RM and positive dementia-specific QoL indicators in comparison to other typical activity situations in a LTC facility and dementia-specific QoL indicators.
- 2) How do key informants (i.e. those frequently involved in the daily lives of individuals with dementia) perceive and explain the impact of the EAI in comparison to activity situations that occur in the LTC facility on the QoL of residents with dementia?
- 3) How do the perspectives of key informants and field notes help to explain the influence of an EAI on dementia-specific QoL?

To answer the research questions, Crotty (1998) argues that there are four components in developing an effective proposal (Table 1). Initially, the first level addresses philosophical

assumptions, or paradigms, behind the study. In other words, the first level addresses “how researchers’ gain knowledge about what they know” (p.38). The paradigms informing this study are post-positivism and constructivism, the assumptions of which are detailed below. These assumptions inform the theoretical lens, otherwise known as the positioning the researcher chooses to employ. For this study, occupational, environmental, and QoL concepts were developed and integrated to create an occupational and contextualized perspective on routine activity situations’ influence on adults with dementias’ QoL. In combination, these paradigmatic assumptions and theoretical stances informed the course of action, or choice of research methods. Therefore, the methodological decisions for this study incorporated various techniques to gather, analyze and interpret data.

Table 1 Corresponding Levels for this Research Study

Levels for Developing this Research Study	
Paradigm (beliefs and assumptions)	Post-positivism and Constructivism
Theoretical lens (theoretical frameworks)	Integration of Occupational, Environmental, and QoL Key Concepts
Methodological approach	Mixed Methods Case Study
Methods of data collection	Behavioral Observation Instrument, Field Notes, and Interviews

Note. Adopted from Crotty (1998).

Paradigm Positioning and Fusing

Research studies are influenced by philosophical *paradigms* comprised of the beliefs and assumptions held by the researcher. These assumptions describe how one is influenced by topic and process. That is, researchers explicitly or implicitly lay out the paradigm to convey the characteristics of: (1) ontology, or the nature of reality; (2) epistemology, or how we know knowledge; (3) axiology, or what values go into knowledge construction; and (4) methodology,

or the processes involved in the study (Creswell, 2013). Several paradigms exist from which researchers can choose to better align the study with their study aims and questions. In regard to my dissertation, two paradigms appeared to correspond, post-positivism and constructivism. The rationale for combining the paradigms of post-positivism and constructivism is that neither is sufficient by itself to capture the details of the research problem. Therefore, this study consisted of a quantitative and a qualitative strand. The paradigm of post-positivism is represented through the quantitative strand. Conversely, the paradigm of constructivism characterized the qualitative strand.

Post-positivism. The paradigm of post-positivism suggests a scientific approach to research to produce objective knowledge. In this case, the ontological assumption emphasizes that the nature of reality is “a single reality that exists beyond ourselves. In other words, researcher’s capabilities to understand or get to the reality is hindered by the lack of certainties or absolutes that exist” (Creswell, 2013, p. 36). In relation to ontology, this study hypothesized that there will be significant associations between the activity situation of RM and positive dementia-specific QoL indicators in comparison to other typical activity situations in a LTC facility and dementia-specific QoL indicators.

Further developing this post-positivist framework, the epistemological assumption focuses on the theory of knowledge and can be determined by examining what knowledge is most important to know for a given situation and how knowledge is acquired, organized, and used (Hooper & Wood, 2014). For the quantitative strand, the researchers objectively collected data, distancing themselves from the participants to remain impartial. The axiological assumption acknowledges the role of values. Here, emphasis is on the objective researcher, indicating that researchers are to remain “value free” while collecting data (Syed, 2010).

Lastly, this paradigm aims to create new knowledge through deductive reasoning, where the researchers “work from the top down; from theory to hypotheses to data to add to or contradict the theory” (Creswell & Plano-Clark, 2011, p. 41). Information was acquired from both the equine and LTC environments; analyses of results were associated with concepts presented in preceding chapters (i.e. dementia, environmental press, etc.) to better understand observed behaviors.

Constructivism. The paradigm of constructivism espouses that individuals generate knowledge and meaning through the interaction of experiences and ideas (Creswell, 2013). The ontological focus with constructivism takes a relativist stance. Here, reality is understood to be co-constructed through social relationships and collaborations. Moreover, these constructions are more or less informed, not true or false (Lincoln, Lynham, & Guba, 2011). Researchers enter the study with specific, in-depth questions aimed at creating multiple interpretations of reality from each individual’s perspective (Bunniss & Kelly, 2010). This study illustrated different perspectives of key informants from both the equine and LTC environments.

The epistemological and axiological assumptions, however, suggest dualism be replaced with an emphasis on interaction. That is, the interaction between researcher and research focus needs to be recognized and utilized to best understand values that ensue throughout the research process. This is achieved by actively talking about biases and interpretations with participants (Lincoln et al., 2011). This study performed in-person interviews with key informants from both the equine and LTC environments. In turn, the researchers and the participants developed a close relationship to better understand values and interpretations of the influence of RM on QoL for persons with dementia.

Lastly, constructivism's methodological focus stresses that inquiry occur in natural contexts. Doing so allows the study to occur naturally, capturing realities holistically, and discerning meaning implicitly through human activity. Lincoln et al. (2011) further explains that the methods of constructivism "must be hermeneutic and dialectic with a focus on social processes of construction, reconstruction, and elaboration" (p. 78). Perspectives of key informants from both equine and LTC environments were sought to develop a rich interpretation of the findings.

Research Design

A mixed methods case study design was selected to investigate the influence of routine activity situations, in particular RM, with QoL for adults with dementia residing in an institutional home. A case study design features "the deliberate intense focus on a single phenomenon while understanding its real-world, dynamic context" (Yin, 2013, p. 16). This design is particularly useful when boundaries between phenomenon and context are not clearly evident (Stake, 1995). The complex phenomenon I attempted to understand was people with dementias' experiences in activity situations, in particular RM; the real-life contexts were the LTC facility and the equine environment.

The design of case studies may combine "elements of quantitative and qualitative research approaches for the purposes of breadth and depth of understanding and corroboration" (Johnson, Onquegbuzie, & Turner, 2007, p. 123). A mixed methods case study design depends on multiple sources of evidence, including theoretical propositions to guide data collection and analysis. Of note, Kielhofner (2006) suggests that case studies are "most valuable when the information reported is comprehensive in that it provides data on several variables or provides repeated measures of some variable over time" (p.62). Multiple sources, therefore, provide more

evidence for studying environmental influences of different routine activity situations on QoL compared to quantitative or qualitative methods alone. This case study provided a detailed description of routine activity situations of people with dementia through behavioral observations, field notes and interviews with key informants from both environments, represented in the quantitative and qualitative strands, respectively. In addition, this design appeared more practical, as it allowed me to employ skills in observing institutionalized adults with dementia as well as recording key informants' insights and perspectives of environmental influences on QoL.

The case: residents with dementia involved in riding in the moment. When conducting case study research, it is essential to define and bound the case (Yin, 2013). The case that this study explored was a small group of residents from a LTC facility that were involved in a variety of activity situations, including RM. Bounding the case refers to differentiating people that are to be included within the group from those outside of the group (Yin, 2013). Thus, bounding the case assists in determining the scope of data gathered, or how the phenomenon is distinguished from the context of the case. In particular, this study's topic of interest was the group of residents that have a preference or desire to participate in RM; the study's context encompassed the actual LTC facility where these residents live and the therapeutic riding center at which they participated in RM.

Study sites. The routine activity situations occurred at two study sites: a therapeutic riding center and a LTC facility. Hearts and Horses Therapeutic Riding Center, or simply Hearts and Horses as referred herein, is a non-profit center located in Northern Colorado. Hearts and Horses established RM in 2011 to help promote physical and psychosocial benefits for older adults with dementia. Two certified therapeutic riding instructors provided RM. Therapeutic

riding instructors are trained to conduct safe and basic equestrian lessons to people with disabilities (PATH Int., 2017). Residents were accompanied to each session by at least two volunteers as well as one or two LTC staff members. Caregivers (e.g. family members) were also given the opportunity to join sessions. During the program, residents were introduced to one or more horses, completed various groundwork activities such as grooming and tacking the horse, and had the opportunity to ride if desired. Hearts and Horses was chosen as a site for the study based on its established dementia-specific program and accreditation as a PATH Intl. Premier Accredited Center, the highest level of accreditation possible for therapeutic riding centers.

Seven Lakes Memory Care, or simply Seven Lakes as referred herein, is a for-profit LTC facility that receives private, Medicaid, and Medicare funding. This facility, which is located in northern Colorado, provides full memory care services to residents with dementia, offering a home-like community with various activity situations. Staff at Seven Lakes can provide residents with assistance with medication, bathing, dressing and grooming, meals and snacks, and housekeeping. This site was chosen due to its staff's enthusiastic support of RM as well as their dedication to providing personalized care that, "keeps residents connected to what matters to them most" to experience an optimal QoL each day (MBK Senior Living, 2016, para. 1). Furthermore, Seven Lakes and the Hearts and Horses' RM have had a longstanding positive relationship.

Research Implementation

This mixed methods case study consisted of two strands: one quantitative and one qualitative. After data collection, these strands were *converged* to comprehensively understand the real-world, dynamic context of routine activity situations and the QoL of people with dementia in LTC involved in RM (Figure 4, adopted from Creswell & Plano-Clark, 2011). To do

so, both data sets were compared and contrasted for validation of the interrelationships among routine activity situations at a LTC facility and the equine environment and resident QoL indicators: daily time use and apparent affect.



Figure 4. Mixed methods convergent implementation.

Quantitative strand. A post-positivist, exploratory quantitative approach was used to answer the first research question. The hypothesis that I intended to elucidate with this strand was: There will be significant associations between the activity situation of RM and positive dementia-specific QoL indicators in comparison to other typical activity situations in a LTC facility and dementia-specific QoL indicators.

Residents. After approval from Colorado State University’s Institutional Review Board was obtained, residents were chosen using both theoretical and convenience sampling techniques. I used a theoretical sampling technique to choose residents on the basis of their relevance to my research purpose (Gibson & Brown, 2009). Namely, I wanted to capture specific details of the unique activity situation, RM, therefore, I intentionally selected residents with an interest or experience with horses. A convenience sample of eight residents was selected in order to keep data collection and analysis manageable. Residents were identified through a two-stage screening process. This screening process allowed the researcher to gather preliminary data on the residents.

The first stage consisted of a brief in-person meeting with an administrator from Seven Lakes. During this time, the administrator and I identified residents that met the inclusion criteria. Inclusion criteria consisted of: (1) age of 45 years or older, (2) ability to ambulate with minimal assistance from a caregiver (by walking or wheelchair), (3) stable regimen of medications (including psychotropic medications), (4) diagnosed with mild-moderate stage dementia, (5) LTC resident at facility for four weeks or longer prior to the study, (6) not allergic to horses, (7) English-speaking, and (8) interest in horses or RM. A screening log was utilized to help track which residents were and were not eligible for the study. Once eight residents were identified, I used the *face sheet*, or introductory information sheet from the facility to collect additional information about each included resident such as demographics, daily activities and function, communication and vision, mood and behavior, medications, physical functioning, and other pertinent health conditions.

This second stage was a critical step in the study as it allowed me to explore who the eight residents in the study are as ‘occupational beings’ (Chung, 2004; Hooper & Wood, 2014; Wilcock, 1993; Yerxa, 1998). Being that this study emphasizes the importance of activities that ‘tap’ into what matters most to people with dementia in order to encourage ‘doing’ and ultimately enhance their QoL, this study sought to gather the participants’ occupational profiles. Here, I dove into each residents’ medical chart and other intake forms that Seven Lakes utilizes for assessing each resident. Gathered details included history and physical, precautions, habits, roles, routines, and past and present occupations. Residents and proxy (primary caregiver) consents were obtained. Participation in the study was voluntary and the residents were able to withdraw from the study at any time.

Assessment measure. The Activity in Context and Time (ACT) is a computer-assisted observational tool (Wood, 2005). It was designed to record environmental correlates of time use and apparent effect upon people with dementia. The tool encompasses nine domains. Three of the domains serve to measure aspects of the environment: activity situations, physical environmental affordances, and social environmental affordances. In regard to capturing information on the environment, I only used the activity situation domain as the qualitative strand captured information related to the physical and social environmental affordances (Table 2).

Four other domains measure time use in positive behaviors including gaze, position and movement, participation in conversation, and participation in activity. Another time use domain records problem behaviors such as agitation, behavioral distress, and resistance to care. The last domain incorporates Lawton et al.'s Apparent Affect Rating Scale (M. P. Lawton, 1994) to measure apparent affect. Because these domains were established based on "grounding the ACT in credible and relevant scholarship," they demonstrate content and construct validity (Wood, 2005, p. 125). Each of these domains contains optimal codes, or codes that indicate the participant's ability to function favorable to an enhanced QoL. For instance, one code described as optimal is engaged gaze, where the participant is visually oriented to an object, person, or event. Contrarily, a person who is not engaged may be observed dozing off or staring blankly into space. The ACT was further adapted for the study to include characteristics of the activity situation of RM and to capture precise details about gaze and participation, which contained two modifier groups (Table 2). Modifiers are factors that describe the behaviors in more detail (Noldus Information Technology, 2015). For the sub-domain gaze, I wanted to capture where the residents' gaze was directed. That is, if researchers observed an engaged gaze, they then were

directed to answer if the gaze was single (i.e. directed toward one person, animal, or nonsocial object in the environment) or multiple (i.e. directed toward more than one person, animal, or nonsocial object in the environment). Likewise, for the sub-domain of participation, I wanted to capture what the residents were doing, which could be coded as simple or complex participation. Some examples of simple participation included eat/drink, dress self, sing, dance, ride horse, groom horse, and pet animal. When residents were demonstrating more than one behavior concurrently, (i.e. grooming and petting horse), researchers coded their observation as complex participation. I presumed that a multiple engaged gaze and complex participation would be conducive to experiencing a more optimal QoL.

Table 2 Modified Activity in Context and Time (ACT) Tool

Environmental Domain	Sub-domain: Activity Situations	Downtime	
		Television	
		Meals and Snacks	
		Music Group	
		Physical Therapy	
		Games	
		Joke and Riddle Time	
		Bus	
		Riding in the Moment (RM)	
Time use Domain	Sub-domain: Gaze	Engaged gaze	
		Single	Gaze directed at one person, animal, or object
		Multiple	Gaze directed at more than one person, animal, or object
		Eyes closed	
		Unengaged gaze	
	Sub-domain: Position and Movement	Walking/Standing	
		Lying/Sitting	
	Sub-domain: Conversation	No participation in conversation	
		Participation in conversation	
	Sub-domain: Participation	No participation in activity	
		Participation in activity	
		Simple	One behavior observed
		Complex	Multiple behaviors observed concurrently
	Sub-domain: Agitation	No evidence of agitation or behavioral distress	
		Evidence of agitation/distress	
Quality of Life Domain	Sub-domain: Apparent Affect	No affective expression is apparent	
		Interest	
		Pleasure	
		Anger	
		Anxiety/fear	
		Sadness/depression	

Note. Adapted from Wood (2005).

The ACT was selected because its premises embrace much of the same literature upon which this study is based. Notably, the ACT is comprehensive in nature, meaning that it assesses

an individual's time use, affect, and interactions with the surrounding environment. In addition, the measure can be used to record indicators of QoL, positive, negative, or no affect, in context of specific activity situations. For instance, the ACT is based on the assumption that "the environment influences everyday behaviors, including positive behaviors such as participation in meaningful activities or relationships and problematic behaviors such as agitation and distress" (Wood et al., 2005, p. 106). In regard to this study, using the ACT allowed the researchers to explore the residents' uses of time in positive or problematic behaviors in various activity situations. It was assumed that a predominant activity situation would allow or promote displayed behaviors.

Besides relating to the theoretical rationale for this study, the ACT also lent the following advantages to the study: (1) ease of use in natural settings, (2) non-reliant on reports by proxies, and (3) receptive to the instantaneous sampling strategy employment, which records current, individual behavior patterns at preselected moments in time. This type of sampling allows repeated observations capturing precise, daily life details and related QoL issues experienced by people with dementia (Wood, 2005).

Using Noldus, an observer software system, I programmed hand-held computers with the modified ACT (Noldus Information Technology, 2015) and an instantaneous sampling strategy. An instantaneous sampling strategy was chosen to capture the sequence of direct observations at regular intervals of time. To illustrate, one complete observational string was collected on each resident every ten minutes from 9am to 1pm each day of the study. This time remained consistent throughout all aspects of the study. An observational string consists of one code from each ACT domain (Wood, 2005). An example of an observational string completed between 9:00 and 9:10am of a man having breakfast in the LTC facility could be as follows: *Activity*

situation-meals and snacks; *gaze*-engaged gaze; *position and movement*-sitting; *conversation*-no participation in conversation; *activity*-participation in eating and drinking; and *apparent affect*-no affective expression is apparent. Of note, the Noldus software system was designed and developed specifically for behavioral research.

Data collection. I and one other researcher collected behavioral observations of the residents in both environments, Seven Lakes and Hearts and Horses. Behavioral observational data were collected on Thursdays and Fridays for eight weeks for a total of four hours each day. Two days were chosen to observe behaviors for the following reason: to assess behaviors prior to and on program day. On Thursdays, residents were observed during activity situations at Seven Lakes. On Fridays, residents were observed during activity situations at Seven Lakes but also during the unique activity situation of RM at Hearts and Horses. Behaviors on the bus to and from Hearts and Horses were observed to gather any aspects of anticipation of the program and immediate effects post-equine environmental approach, respectively. Of note, activity situations that occurred at Seven Lakes progressed over the course of this study. That is, residents at Seven Lakes were presented a variety of opportunities for engagement each day of the week throughout the course of the day. Two examples from the existing activity calendar at Seven Lakes illustrate the progression of activity situations. The progression for Thursday, August 4th is as follows: (1) sing with melodies with Alan at 10am, (2) visit with Potter the puppy at 11am, (3) bowl with the Seven Lakes league at 3:30pm, and (3) join in with the jokes and riddles group at 6pm. For Friday, August 5th residents have the opportunity to: (1) go to RM at 10am, (2) have some root beer floats at 1:45pm, (3) listen to Seven Lakes singers at 3pm, and (4) watch a classic movie at 6pm.

During observations, researchers did not engage with residents. In addition, observations only occurred in public areas within both environments in order to remain as unobtrusive as possible. Given the number of residents and timeframe of the study, it was anticipated that researchers would complete 384 observational strings on each resident: 6 observational strings per hr. x 4 hr. per day x 16 days of observations.

Quality criteria: Reliability. In the first four weeks of the proposed study, I and one other researcher underwent extensive training in the use of the ACT to ensure inter-observer reliability. First, we independently watched and applied the modified ACT codes to roughly four hours of video footage of residents from previous RM sessions. Next, we met to determine our level of agreement and discuss sources of disagreement. One area of disagreement pertained to coding pleasure versus interest. Strict definitions were applied to codes and general coding guidelines were created to assist the researcher's in their coding decision process (see Appendix A for quantitative strand coding guide). In addition to the video coding, approximately eight days consisting of 32 hours of preliminary behavioral observations of the residents with dementia at Seven Lakes and at Hearts and Horses were recorded. These field-experiences allowed us to record observations of the included residents in this study, compare each other's results, and further discuss disagreements to better understand each other's use of the tool. In addition, these field experiences revealed some other coding concerns. For example, we were uncertain how to code a sub-domain if you could not see a resident's face (i.e. their back was turned towards the coders or they were in their room). This discussion influenced the decision to create a 'missing observation' code for each of the sub-domains in the ACT; accordingly, the hand-held computers were updated to contain and describe these decisions.

After we completed initial coding using the videos as well as field experiences, we checked our precision and consistency of applying the ACT using the reliability analyze function in Noldus. Specifically, weighted kappa coefficients for inter-observer reliability across all sub-domains of the ACT were calculated. These calculations take into account chance agreement between researchers and the associated challenge in quantifying the number of times an individual with dementia displays a behavior (Cyr & Francis, 1992). Inter-observer reliability was obtained during the first four weeks of the study to ensure that the data collected during week's five to eight were reliable. Across all domains, weighted kappa coefficients ranged from .92-.96, indicating substantial agreement.

Qualitative strand. A constructivist, exploratory qualitative approach was used to give meaning and aid understanding of the phenomenon, as well as to answer the research question: how do key informants (i.e. those frequently involved in the daily lives of individuals with dementia) perceive and explain the impact of the equine environment in comparison to the LTC facility on the QoL of residents with dementia? In particular, interview questions were designed to probe informants' understanding of the residents, their experiences with RM, and perceptions of environmental influences on QoL for the residents.

Key Informants. Key informants for individual interviews were identified through purposive sampling, a strategy that is the "deliberate selection of individuals by the researcher based on certain predetermined criteria" (Kielhofner, 2006, p. 522). This sampling strategy was employed to recruit 2-5 administrators and frontline caregivers from both study sites who had been extensively involved with RM. A total of five informants were selected to keep data collection and analysis manageable. Exclusion criteria for all key informants, both administrators and frontline caregivers, included those who do not speak English.

Data collection. This study used semi-structured individual interviews to explore key informants' perceptions of the influence of activity situations, in particular RM, with QoL for people with dementia. The purpose of these interviews was to obtain detailed descriptions of the ideas of the interviewees pertaining to interrelationships among routine activity situations at Seven Lakes and QoL indicators: daily time use and apparent affect (see Appendix B for interview guides). All five individual interviews occurred immediately after RM had finished in order to capture a more accurate depiction of the key informant's perceptions, attitudes, and beliefs about influences on QoL for residents with dementia. More so, interviews were conducted face-to-face at a desired location specified by the key informant; lasted about 30-60 minutes; and were audio recorded.

In addition, field notes were gathered in this study. Field notes provided running descriptions of the setting, people and their behaviors, and activities. Schwandt (2015) further describes field notes as a way "to produce meaning and an understanding of the culture, social situation, or phenomenon being studied" (p.26). Field notes included both descriptive and reflective information. Descriptive information included factual data such as the date and time, settings, behaviors, and observed conversations. Reflective information included the researcher's thoughts and ideas, as well as any questions and concerns during the observation. This study approached writing field notes following suggested guidelines from University of Southern California Libraries (2016) (see Appendix C for field note guidelines). In addition to the two researchers collecting behavioral data using the ACT measure, one researcher completed field notes for the entire length of the study. Specifically, field notes were recorded of the four-hour period, both days of the study immediately after each day.

Data Analysis

Quantitative strand. All quantitative data were managed in Noldus, which stored the data as a file for this study. After all data were uploaded from the hand-held computers and saved to the file in Noldus, I then exported and uploaded this file into SPSS, a statistical software program (Leech, Barrett, & Morgan, 2015). Before beginning inferential statistics, it was necessary to conduct exploratory data analysis (EDA) on the entered data. EDA consists of computing various descriptive statistics and graphs to get to know the data. Here, I ‘cleaned up’ the data file and accounted for any of problems in the data such as outliers and missing values following guided steps from Leech et al. (2015). For example, I looked over the raw data against the data in the SPSS data file and examined to see if SPSS revealed a lot of missing data. At this point, I corrected typo errors in the coding. In addition to checking for errors, it is important to check assumptions. Assumptions of statistics describe when it is and is not reasonable to complete a specific statistical test (Leech et al., 2015). Once the data set had been checked for assumptions, I ran nonparametric statistical tests. Nonparametric testing was ideal for this study as they have fewer assumptions and do not require homogeneity of variances.

Composition of the data. The distribution of the data was two-dimensional. In general, rows represent nine observed routine activity situations and were categorized as:

1. Downtime
2. Meals
3. Television
4. Music Group
5. Jokes and Riddles Group
6. Games
7. Physical Therapy
8. Bus
9. RM (equine-assisted intervention)

Columns represent the six behavior dimensions (i.e. sub-domains from the ACT measure):

1. Gaze
2. Position and Movement
3. Conversation
4. Participation
5. Agitation
6. Apparent Affect

While the quantitative strand contained a small sample size, it is of note that hourly observations of behavior within various activity situations generated 3,555 active cases—a ‘large scale sample’ in any statistical application.

To answer the first research question and richly describe the participants’ responses to the activity situations, I employed three distinct steps that progressed through three stages of analysis (Figure 5).

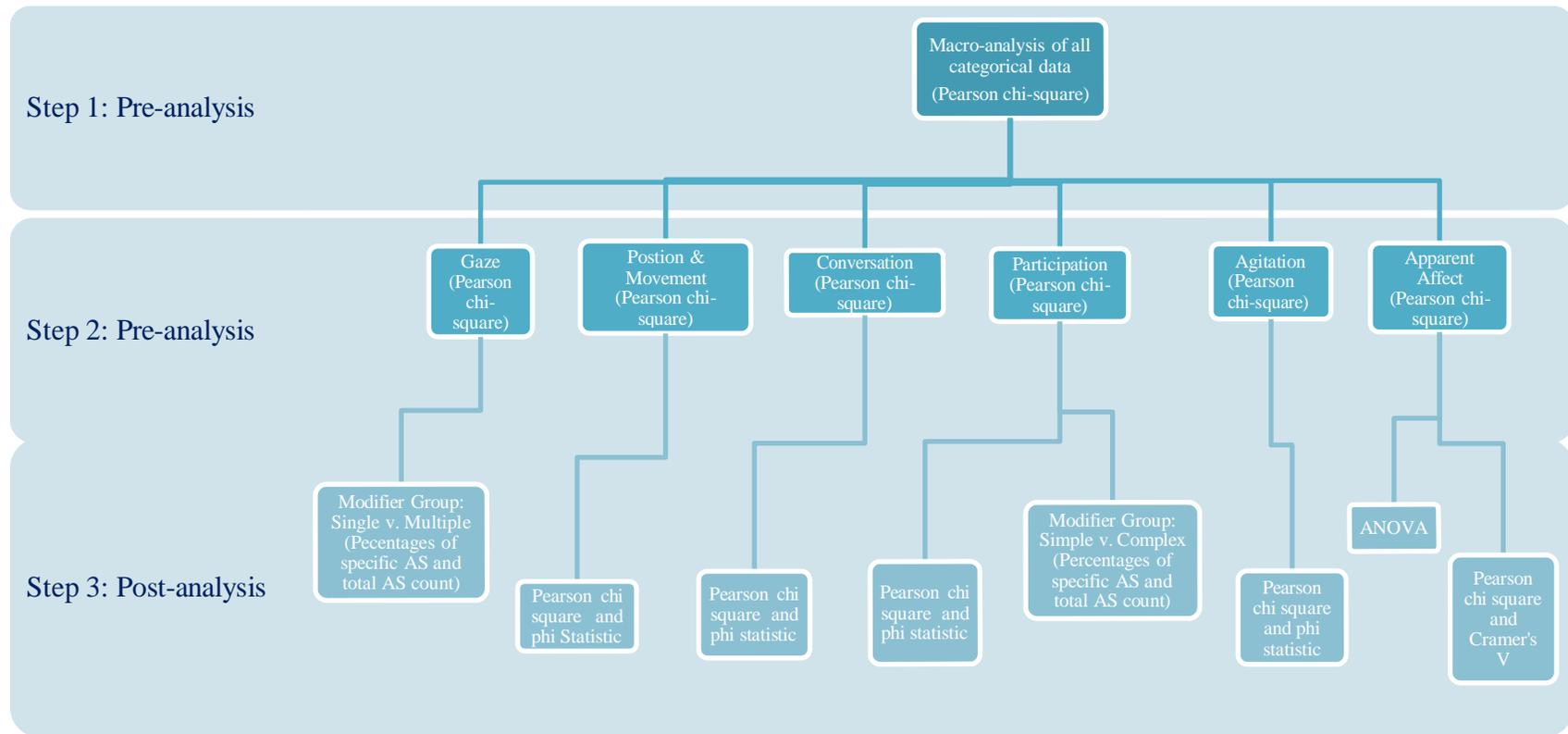


Figure 5. Quantitative data analysis process.

Step one consisted of a macro-analysis of all categorical data (i.e. sub-domains from ACT) for all activity situations using the Pearson chi-squared test. This pre-analysis stage was conducted first to determine if there was a relation between various activity situations and the observed behavior dimensions; however, it did not specify where the relations existed. All tests were two-tailed and were set at $p < .05$.

Correspondingly, step two of the pre-analysis stage investigated the significance of relationships between two (or more) nominal-level variables (i.e. activity situations and sub-domains of the ACT). Here, I reorganized the data and separated the categorical data by sub-domain (see Table 3 for example of one Sub-domain, Participation). If the chi-square test revealed a significant association between a given sub-domain and activity situations, I proceeded to the post-analysis stage to determine if there was an association between the activity situation of RM and the specific behavior in comparison to all other activity situations for behavioral manifestations.

Table 3 Pre-analysis using Chi-square

Activity Situation	Behavior	
	Participation	No Participation
Downtime		
Meals		
Television		
Music Group		
Joke/Riddle Group		
Games		
Therapy		
Bus		
RM		

I reorganized the data where RM data represented category one, and all other activity situations represented category two. After this data rearrangement, I re-ran chi-square tests to discern the significance of associations between the categorical data. I also used the phi

coefficient and Cramer’s V coefficient to determine if the association was strong or weak. Because the phi coefficient is used to express the degree of association between two nominal variables in a 2x2 table (Table 4), it was utilized for all sub-domains except apparent affect.

Table 4 Post-analysis using Chi-square and Phi Coefficient

Activity Situations	Behavior	
	No Conversation	Conversation
Other LTC		
RM		

Like the phi coefficient, Cramer’s V coefficient examines the strength of association but for tables larger than 2x2 and that are asymmetrical (e.g. sub-domain of apparent affect). To test for further consistency of the findings from the Pearson chi-square test, I applied a one-way ANOVA to examine differences between the apparent affect sub-domain categories of the ACT and the activity situations. Here, I ordinally coded the various affects from low to high (i.e. 1=sadness/depression and 6=pleasure).

Besides the nonparametric statistical testing, the post-analysis stage also consisted of a step three using descriptive statistics for two sub-domains that contained modifier groups (i.e. gaze and participation). First, I organized all modifier data corresponding to activity situation data in a tabular formant in Microsoft Excel. This master table allowed me to use the pivot tool function in order to drill down the data to see the sub-domains of gaze and participation in more detail. In particular, I created four distinct worksheets that represented single gaze, multiple gaze, simple participation, and complex participation. In each worksheet, the pivot table function allowed me to filter for a specific sub-domain (i.e. gaze or participation), and then select rows to represent activity situations, columns to represent the specific modifier group (i.e. single gaze or multiple gaze), and values to represent count of all subject observations. With these precise

selection criteria, I summarized the data in a table as proportions, or the share of one value for a variable in relation to a whole. For example, in 46 total activity situation observations for conversation where there are 12 yes conversation and 34 no conversation, the proportion of conversation is .261 or expressed as a percentage as 26.1%. Alternatively, the proportion of no conversation is .739 or 73.9%.

Qualitative strand. I transcribed the interviews and field notes verbatim and uploaded them into the qualitative software, NVivo (Edhlund & McDougall, 2012), for qualitative analysis. The NVivo software program helps researchers organize and analyze unstructured information. Benefits of using NVivo can include working in a systematic manner, eliminating missed results, managing all project materials for effortless data-sharing, and justifying findings with evidence (Edhlund & McDougall, 2012).

I analyzed all interview data using basic qualitative description (BQD). This method is unique from other qualitative methods in that analysis aims to provide a rich description of an experience or an event. That is, BQD attempts to uncover participants' experiences through multiple sources (e.g. field notes and interviews). Thus, BQD was selected as the researchers sought to richly describe routine activity situations influence, in particular RM, on the QoL of residents with dementia. Moreover, BQD is characterized as *low inference interpretation*, where researchers attempt to stay close to the data, presenting facts of the experiences through everyday language (Neergaard, Olesen, Andersen, & Sondergaard, 2009). Therefore, the analytic process does not aim to develop concepts or confirm existing theories (Sandelowski, 2000), but rather to understand and explore complex experiences that are rooted within the human context (Sullivan-Bolyai, Bova, & Harper, 2005).

Several analytic strategies for BQD from Neergaard et al. (2009) guided my coding process. Reviewing the field notes and interviews, I first generated empirical codes, or codes that emerged through the exploration of data (Gibson & Brown, 2009). I developed these codes on the basis that they occurred more than once across the data set, there was an obvious presence of strong emotions or indication that something is particularly important, and/or the data revealed something in agreement or something that went unnoticed. Next, I revisited all of the data and applied this coding scheme accordingly to further examine the impact of the newly conceived empirical codes. I then created subdivisions, or sub-codes, within these ‘main’ codes as a way of producing further nuances (see Appendix E for empirical codes, sub-codes, and their definitions). Lastly, I recorded my insights and reflections of the data in light of my existing knowledge base. Accordingly, the expected outcome was an authentic description of participants’ experiences. Supporting quotes from both the interviews and field notes elucidated the scope or substance of each experience in order to capture and portray the participants’ voices.

Quality criteria: Validity. This study implemented several validation strategies (Creswell, 2013). First, I underwent prolonged engagement and persistent observation. Here, rapport was established with key informants as well as an understanding of caregiving culture of the LTC facility of Seven Lakes and Hearts and Horses. Another strategy that was employed is triangulation. Specifically, I made use of several different sources such as the methods, investigators, and guiding theoretical frameworks to assist in providing validity to the qualitative findings. Additionally, I along with another researcher recorded field notes and used the peer debriefing strategy. This strategy is similar to that of inter-rater reliability for quantitative research in that it keeps the researcher honest and allows check-in meetings to discuss interpretations and meanings of the data (Creswell, 2013). For qualitative research, it is also

important to address reflexivity to clarify researcher bias. That is, I made it a point to address my orientation and past experiences that could potentially shape my interpretation of the data.

Converging the Data

Inferences or conclusions were drawn by following procedures listed from Creswell and Plano-Clark (2011). To answer research question three, both sets of data, quantitative and qualitative, were initially analyzed separately and then merged together to richly describe the influence of RM on QoL for the residents with dementia. Specifically, in my results section I first present the quantitative results followed by the qualitative results and then present the findings together in a joint display so that both data sets can be easily compared. This process allowed me to discern to what extent the qualitative findings enhance the understanding of the quantitative findings. In addition, the summary table provides a visual to the reader on how both data sets, side by side, provide evidence for the phenomenon under investigation.

Summary of Methods

This chapter provided details pertaining to the research issue and questions, inquiry paradigms, study rationale, research strategies, selection of participants, data collections and analyses, and quality criteria. This exploratory study of the influence of activity situations on the QoL of institutionalized people with dementia, aligns with the paradigms of post-positivism and constructivism and used a mixed methods case study approach to collect, analyze, and interpret the data. The study was informed by the theoretical rationale, intended to elucidate elements and implications of RM on enhancing QoL. Data collection occurred at two sites, Seven Lakes and Hearts and Horses, encompassing residents with dementia residing in LTC as well as key informants from both environments. Theoretical and convenience sampling techniques were used to identify residents for the quantitative strand and the purposive sampling strategy was used to

identify key informants for the qualitative strand of the study. Data for the first strand were analyzed using non-parametric and descriptive statistics and, for the second strand, through BQD. Findings from both strands were converged to ‘paint’ a more complete picture of the influence of RM on QoL for residents with dementia.

CHAPTER FOUR: RESULTS

Chapter four presents results from this exploratory mixed methods study. Participant descriptors for both the quantitative and qualitative strand are presented first. Given the data analysis process described in chapter three, I synthesized findings by research questions.

Participant Descriptors: Residents

Initially, eight residents were deemed potentially eligible for the study through the screening process. Of those, two did not participate due to exclusion for non-attendance. Two residents failed to attend RM for more than two consecutive weeks; one resident experienced health problems not associated with RM and staff at Seven Lakes considered the other resident unsafe to partake in the program due to his lack of safety awareness. Of note, all residents had previously participated in RM and reported that they enjoyed the equine-assisted intervention (EAI). Table 5 provides descriptors of the six residents with dementia residing at Seven Lakes.

Table 5 Quantitative Strand: Description of Residents

Description	
N	6
Age	M=83.3; Range=71-95
Ethnicity	White=6
Gender	Female=4; Male=2
Dementia Stage (Mild, Moderate, Late Moderate)	Mild=1; Moderate=3; Late Moderate=2
Experience with Horses	No experience=0; Some experience=4; Much experience=2

Occupational profiles. This next section provides information related to each resident's education and work, social participation, functional performance abilities, habits and routines, leisure activities, and diagnoses and past medical history. This summary helped generate a sense of connectedness with the residents in order to tell a comprehensive story.

Opal is a 71-year-old female who has worn many hats. In her past, she was a realtor, a secretary for the registration office at a university, the secretary chief of highway state patrol, and an artist. Preferences include being vegetarian and trying to sleep-in. Past and current interests are exercising, volunteering, animals, dancing, and music. *Opal* is a very cheerful individual, however, when her family comes to visit and then leaves, she becomes very anxious and then sad. She is able to walk with no assistive device and is very communicative. Her primary diagnoses include Alzheimer's disease and generalized anxiety disorder; *Opal* is in the early stage of dementia. Secondary diagnoses include history of lumbar surgery, skin cancer, and short bowel syndrome.

Rose is 91-year-old female that earned a Bachelor's degree in Education and a Master's degree in Library Science. In her past, she worked as a home economics teacher and enjoyed planning events. Past and current interests include crafts, spirituality, and socializing. Recently, *Rose* was wheel-chair bound as she was recovering from a hip fracture. She now walks with a four-wheeled walker, is on continuous oxygen, and is communicative. At times, she will display signs of paranoia with family members such as stealing. Her primary diagnosis is dementia, not otherwise specified; she is in the moderate stage of dementia. Secondary diagnoses include lower back pain, osteoporosis, and keratitis.

Evelyn is 95-year-old female, who was a previous secretary of a college and then for a governmental office. Interests include listening to music and being around animals. She walks with a four-wheeled walker and has a difficult time with communication. Sadness and agitation can be triggered by family and friend visits, as she can be easily overstimulated. Her primary diagnosis is dementia, not otherwise specified; *Evelyn* is in the latter point of the moderate stage

of dementia. A secondary diagnosis is bursitis to the right elbow. In the afternoon, she tends to wander a lot and check doors.

Henry is an 81-year-old male who ranched and owned cattle and horses. He enjoys dancing to polka music, spending time outdoors, and woodworking. He is able to walk with no assistive device and is communicative. Henry was the most recent participant to move into Seven Lakes Memory Care. Prior to the move, he was living with his spouse but began to wander quite a bit, resulting in safety issues. His family frequently comes to visit. His primary diagnosis is dementia, not otherwise specified; he is in the moderate stage of dementia. Secondary diagnoses include glaucoma, type II diabetes, and a stroke.

Gertrude is a 79-year-old female that earned a Bachelor's degree in English and was very involved in her church. Interests include attending social gatherings, reading, and playing piano. Gertrude walks with no assistive device and is communicative, however, does so in a soft whisper. Occasionally, she exhibits signs of paranoia and attempts to be very private with things. Her primary diagnoses include Alzheimer's disease and generalized anxiety disorder; Gertrude is in the latter point of the moderate stage of dementia. Secondary diagnoses include hypertension, low back pain, hip pain, type II diabetes, and edema.

Dennis is an 83-year-old male who worked for a startup company as a factory worker, was in the army, and owned farmland with horses. He has a degree in Engineering and previously enjoyed traveling and construction type work. Dennis' interests include exercising and spending time with animals. He is able to walk with no assistive device, however, uses furniture to help with balance. When he does communicate, he has difficulty finding words. He experiences issues with anxiety and often needs to be redirected when he has a breakdown with his understanding. He has a primary diagnosis of Alzheimer's disease; Henry is in the moderate

stage of dementia. Secondary diagnoses consist of Parkinson’s, gout, hypertension, insomnia, stroke, and coronary artery disease.

Participant Descriptors: Key Informants

The purposive sampling method led to a selection of five unique professionals. Table 6 provides descriptive information of the key informants.

Table 6 Qualitative Strand: Description of Key Informants

Participant	Current Role	Dementia Experience (Years)	RM Experience (Years)
TM	Director of Special Programs	5	Less than 1
MK	RM Riding Instructor	2	2
DL	RM Riding Instructor	4	4
LK	Director of Connections for Living	4	2
JL	Director of Activities	Less than 1	Less than 1

Quantitative Strand: Research Question One

What associations, if any, exist between routine activity situations in a LTC facility and dementia-specific QoL? The hypothesis that there will be significant associations between the activity situation of RM and positive dementia-specific QoL indicators in comparison to other typical activity situations in a LTC facility and dementia-specific QoL indicators was partially supported. That is, the positive QoL indicators of participation in conversation and the apparent affect of pleasure were significantly more frequently observed during RM in comparison to all other activity situations. On the other hand, the ACT sub-domains of gaze, participation, and position and movement did not reveal a significant association between RM and the positive QoL indicator in each of these sub-domains in comparison to all other activity situations.

However, other positive findings were demonstrated in the sub-domains of gaze and participation during RM in comparison to other activity situations. And lastly, while there was a significant association between the sub-domain of agitation and all activity situations; further analysis revealed that there was no difference between RM in comparison to all other activity situations.

The first step of the pre-analysis stage, or the macro-analysis, revealed a strong relation between various activity situations and participant behaviors ($\chi^2=446.05$, $df=162$, and $p=.000$) (see Appendix D for wide cross tabulation of all activity situations and behaviors). This power analysis suggested the need for further granularity and therefore, I proceeded to step two of the pre-analysis stage. For each ACT sub-domain, results are presented in tables in order of the most frequently observed activity situation to the least frequently observed activity situation.

Time use: Conversation. Step two in the pre-analysis stage indicated significant associations between activity situations and the conversation sub-domain (Table 9). The highest proportion of observations corresponding with conversation, the positive QoL indicator in this sub-domain, were found during the activity situations of RM (78.9%), Physical Therapy (66.7%) and Downtime (33.3%). The activity situations of Bus (2.4%), Meals (17.1%), and Television (18.5%), produced the lowest percentages of conversation in comparison to all other activity situations.

Table 7 Pre-analysis Stage, Step Two: Conversation

Activity Situation	Behavior		Total
	(Count & Percent within Activity)		
	Conversation	No Conversation	
Meals	33	160	193
	17.1%	82.9%	100.0%
Downtime	56	112	168
	33.3%	66.7%	100.0%
Music Group	20	73	93
	21.5%	78.5%	100.0%
Bus	18	23	41
	2.4%	56.1%	100.0%
RM	30	8	38
	78.9%	21.1%	100.0%
Television	5	22	27
	18.5%	81.5%	100.0%
Joke/Riddle Group	5	17	22
	22.7%	77.3%	100.0%
Games	3	3	6
	50.0%	50.0%	100.0%
Physical Therapy	2	1	3
	66.7%	33.3%	100.0%

Note. For Pearson Chi-Square $df=8$ and asymptotic significance (2-sided) was $p<.001$.

To reinforce this finding and further investigate the strength of association between RM and conversation in comparison to all other activities and conversation, I proceeded to step three of the post-analysis stage. Step three in the post-analysis stage revealed a statistically significant relationship between RM and conversation ($\chi^2=44.3$, $p<.001$, $\phi=.274$, and $p<.001$).

Quality of life: Apparent affect. Step two in the pre-analysis stage indicated that in the apparent affect sub-domain, a significant association was observed between routine activity situations (Table 12). The highest proportion of observations corresponding with pleasure, the positive QoL indicator in this sub-domain, were found during RM (60.5%), Music Group (44.1%), and Bus time (39.0%). The activity situations of Physical Therapy (0.0%), Games (0.0%), Television (14.8%), and Meals (18.0%) produced the lowest percentages of pleasure in comparison to all other activity situations.

Table 8 Pre-analysis Stage, Step Two: Apparent Affect

Activity Situation	Behavior (Count & Percent within Activity)						Total
	Sad/Dep	Anger	Anxiety/ Fear	No Apparent affect	Interest	Pleasure	
Meals	2 1.0%	5 2.6%	9 4.6%	2 1.0%	141 72.7%	35 18.0%	194 100.0%
Downtime	2 1.2%	0 0.0%	14 8.4%	12 7.2%	89 53.3%	50 29.9%	167 100.0%
Music Group	2 2.2%	1 1.1%	2 2.2%	4 4.3%	43 46.2%	41 44.1%	93 100.0%
Bus	0 0.0%	0 0.0%	0 0.0%	1 2.4%	24 58.5%	16 39.0%	41 100.0%
RM	0 0.0%	0 0.0%	0 0.0%	0 0.0%	15 39.5%	23 60.5%	38 100.0%
Television	0 0.0%	0 0.0%	0 0.0%	4 14.8%	19 70.4%	4 14.8%	27 100.0%
Joke/Riddle Group	0 0.0%	0 0.0%	0 0.0%	0 0.0%	18 81.8%	4 18.2%	22 100.0%
Games	0 0.0%	0 0.0%	0 0.0%	0 0.0%	6 100.0%	0 0.0%	6 100.0%
Physical Therapy	0 0.0%	0 0.0%	0 0.0%	0 0.0%	3 100.0%	0 0.0%	3 100.0%

Note. For Pearson chi-square $df=40$ and asymptotic significance (2-sided) was $p<.001$.

To reinforce the reliability of these findings, I proceeded to step three in the post-analysis stage and applied the ANOVA model to test for consistency of the data (Table 13).

Table 9 Post-analysis Stage, Step Three: Apparent Affect and ANOVA Test

	Sum of Squares	df	Mean Square	F	Significance
Between Groups	20.002	8	2.500	3.462	.001
Within Groups	420.306	583	.722		
Total	440.308	591			

The F-ratio was strongly indicative of a significant difference between routine activity situations and apparent affect. By observing the mean statistics, highest mean (5.7) was found representing

RM, keeping in mind that the affect of Pleasure was coded as '6'. The next average was Bus (5.4).

To investigate the strength of association between RM and apparent affect in comparison to all other activity situations and apparent affect, the post analysis stage consisted of an additional Pearson chi-square test and Cramer's V test. Results revealed a statistically significant relationship between RM activity situation and apparent affect ($\chi^2=21.8$, $p=.001$, $\phi_c=.192$, and $p=.001$).

I also applied a binomial test between two apparent affect (i.e., interest and pleasure) categories because there was a close percent of observations for RM; Interest (N=15, 39.5%) and Pleasure (N=23, 60.5%), exclusively for the activity situation, RM. Thus, a binomial test is useful for determining the statistical significance of deviations from an expected distribution of observations into two categories (Howell, 2012). No statistically significant difference was found between the observed proportions for these two categories of apparent affect ($p=.256$).

Time use: Gaze. Step two in the pre-analysis stage indicated that in the gaze category, no significant associations were found between routine activity situations (Table 7). The highest proportions of observations corresponding with engaged gaze, the positive QoL indicator in this sub-domain, were found during the activity situations of Jokes/Riddle (100.0%), Games (100.0%), Physical therapy (100.0%) and RM (100.0%). The activity situations of Television (85.2%), Downtime (91.0%), and Music Group (94.6%), produced the lowest percentages of engaged gaze in comparison to all other activity situations.

Table 10 Pre-analysis Stage, Step Two: Gaze

Activity Situation	Behavior (Count & Percent within Activity)			Total
	Eyes Closed	Unengaged Gaze	Engaged Gaze	
Meals	5	1	187	193
	2.6%	0.5%	96.9%	100.0%
Downtime	11	4	152	167
	6.6%	2.4%	91.0%	100.0%
Music Group	5	0	88	93
	5.4%	0.0%	94.6%	100.0%
Bus	1	0	40	41
	2.4%	0.0%	97.6%	100.0%
RM	0	0	38	38
	0.0%	0.0%	100.0%	100.0%
Television	4	0	23	27
	14.8%	0.0%	85.2%	100.0%
Joke/Riddle Group	0	0	22	22
	0.0%	0.0%	100.0%	100.0%
Games	0	0	6	6
	0.0%	0.0%	100.0%	100.0%
Physical Therapy	0	0	3	3
	0.0%	0.0%	100.0%	100.0%

Note. For Pearson chi-square $df=16$ and asymptotic significance (2-sided) was $p=.170$.

Because the sub-domain of gaze contained a modifier group, I progressed to step three in the post-analysis stage. Sixty-seven percent of the time a demonstrated ‘single engaged gaze’ towards a person occurred in RM, while only 57% occurred in Downtime and 35% in Meals. Further, proportions of observations of multiple engaged gaze were greatest in RM, specifically 23% of all gaze observations compared to 20% in Meals and 18 % in both Downtime and Music Group. Of the multiple gaze observations in RM, 74% recognized attention to both people and the horse.

Time use: Participation. Step two in the pre-analysis stage indicated that in the participation category, significant associations were observed between routine activity situations (Table 10). The highest proportion of observation corresponding with participation, the positive QoL indicator in this sub-domain, were found during Meals (60.3%), Games (50.0%), Music Group (43.0%), and RM (34.2%). The activity situations of Bus (2.2%), Television (7.4%),

Downtime (16.8%), and Physical Therapy (33.3%) produced the lowest percentages of participation in comparison to all other activity situations.

Table 11 Pre-analysis Stage, Step Two: Participation

Activity Situation	Behavior		Total
	(Count & Percent within Activity)		
	Participation	No Participation	
Meals	117	77	194
	60.3%	39.7%	100.0%
Downtime	28	139	167
	16.8%	83.2%	100.0%
Music Group	40	53	93
	43.0%	57.0%	100.0%
Bus	1	45	46
	2.2%	97.8%	100.0%
RM	13	25	38
	34.2%	65.8%	100.0%
Television	2	25	27
	7.4%	92.6%	100.0%
Joke/Riddle Group	8	14	22
	36.4%	63.6%	100.0%
Games	3	3	6
	50.0%	50.0%	100.0%
Physical Therapy	1	2	3
	33.3%	66.7%	100.0%

Note. For Pearson chi-square $df=8$ and asymptotic significance (2-sided) was $p<.001$.

To reinforce this finding and further investigate the strength of association between RM and participation in comparison to all other activities and participation, I proceeded to step three of the post-analysis stage. Step three in the post-analysis stage revealed a statistically significant relationship between participation and all other activity situations with the exception of RM ($\chi^2=15.5$, $p<.001$, $\phi=-.161$, and $p<.001$). In other words, based on a comparison of the percentages, this finding suggests that participation was significantly greater in Meals, Games, Music Group and Joke/Riddle Group than RM.

Because the sub-domain of participation contained a modifier group, I conducted an additional step in the post-analysis stage in which I used descriptive statistics. Even though RM ranked slightly above the middle of activity situations, it had the highest proportion of complex

participation. That is, of the 34% of participation-yes observations, half (50%) were complex. In comparison, only 45% of observations were complex during Music Group and only 5% were complex during Bus time.

Time use: Position and movement. Step two in the pre-analysis stage indicated that in the position and movement category, significant associations were found between activity situations (Table 8). The highest proportions of observations corresponding with standing/walking, the positive QoL indicator in this sub-domain, were found during Physical Therapy (66.7%), Downtime (31.5%) and RM (23.7%). During these three activity situations, residents expended more energy through performing the physical tasks of standing and walking in comparison to all other activity situations. The activity situations of Games (0.0%), Television (0.0%) and Joke/Riddle Time (0.0%), produced the lowest percentages of standing/walking in comparison to all other activity situations.

Table 12 Pre-analysis Stage, Step Two: Position and Movement

Activity Situation	Behavior (Count & Percent within Activity)		Total
	Lying/Sitting	Standing/Walking	
Meals	189	4	193
	97.9%	2.1%	100.0%
Downtime	115	53	168
	68.5%	31.5%	100.0%
Music Group	89	4	93
	95.7%	4.3%	100.0%
Bus	40	6	46
	87.0%	13.0%	100.0%
RM	29	9	38
	76.3%	23.7%	100.0%
Television	27	0	27
	100.0%	0.0%	100.0%
Joke/Riddle Group	22	0	22
	100.0%	0.0%	100.0%
Games	6	0	6
	100.0%	0.0%	100.0%
Physical Therapy	1	2	3
	33.3%	66.7%	100.0%

Note. For Pearson chi-square $df=8$ and asymptotic significance (2-sided) was $p<.001$.

To further investigate the strength of association between RM and position and movement in comparison to all other activity situations and position and movement, I proceeded to step three of the post-analysis stage. Step three in the post-analysis stage revealed a statistically significant relationship between RM and position and movement ($\chi^2=96.8$, $p<.001$, $\phi=.403$, and $p<.001$).

For further clarification, I conducted a binomial test in SPSS between the percent of observations found in the categories of Lying/sitting (N=29, 76.0%) and Standing/walking (N=9, 24.0%) (i.e., the positive QoL indicator), exclusively for the activity situation, RM. A statistically significant difference was found between the observed proportions for these two categories of position and movement ($p=.002$), however this difference indicated that residents were more frequently observed to be lying/sitting rather than standing/walking during RM.

Time use: Agitation. Step two in the pre-analysis stage indicated that in the agitation category, significant associations were found between activity situations ($\chi^2=26.3$, $p=.001$) (Table 11). In other words, frequencies of no agitation significantly varied across all activity situations. The highest proportion of observations corresponding with no agitation, the positive QoL indicator in this sub-domain, were found during RM (100.0%), Physical Therapy (100.0%), Games (100.0%), Joke/Riddle Group (100.0%), Music Group (100.0%), and Television (100.0%). The activity situations of Downtime (92.2%), Bus (97.6%), and Meals (99.0%) produced the highest percentages of agitation in comparison to all other activity situations.

Table 13 Pre-analysis Stage, Step Two: Agitation

Activity Situation	Behavior (Count & Percent within Activity)		Total
	Agitation	No Agitation	
Meals	2	191	193
	1.0%	99.0%	100.0%
Downtime	13	154	167
	7.8%	92.2%	100.0%
Music Group	0	93	93
	0.0%	100.0%	100.0%
Bus	1	40	41
	2.4%	97.6%	100.0%
RM	0	38	38
	0.0%	100.0%	100.0%
Television	0	27	27
	0.0%	100.0%	100.0%
Joke/Riddle Group	0	22	22
	0.0%	100.0%	100.0%
Games	0	6	6
	0.0%	100.0%	100.0%
Physical Therapy	0	3	3
	0.0%	100.0%	100.0%

Note. For Pearson chi-square $df=8$ and asymptotic significance (2-sided) was $p=.001$.

To reinforce this finding and further investigate the strength of association between RM and agitation in comparison to all other activities and agitation, I proceeded to step three of the post-analysis stage. Results revealed no statistically significant relationship between RM and all other activity situations related to agitation ($\chi^2=2.4$, $p=.123$, $\phi=.064$ and $p=.123$).

Qualitative Strand: Research Question Two

How do key informants (i.e. those frequently involved in the daily lives of individuals with dementia) perceive and explain the impact of the EAI in comparison to activity situations that occur in the LTC facility on the QoL of residents with dementia? To answer research question two, I reviewed not only the qualitative data sources but also a Hearts and Horses informational sheet to assist my development of a description of RM, which are described next.

Riding in the moment description.

History. RM was established in 2011 at Hearts and Horses to enhance the QoL of individuals with dementia and other forms of memory loss. Goals for residents involved in RM include: 1) enhance levels of engagement, 2) facilitate positive experiences, 3) demonstrate the power of the human-animal bond, and 4) encourage physical and cognitive strengthening activities (Hearts and Horses Therapeutic Riding Center, 2017)

Facility. Hearts and Horses is located in the foothills of Loveland, Colorado. The center includes a main office, two indoor arenas with handicap accessible ramps for mounting and dismounting, a tack shoppe, an outdoor sensory trail, and two boarding stables. Within the last year, Hearts and Horses underwent a significant renovation to enhance their programming efforts. RM occurred in an indoor arena and when the weather permitted, on the outdoor sensory trail. Within the arena, there were two benches and also chairs with back rests for participants that needed additional support. The facility also had the ability to play background music during the program.

Personnel and training. RM has a two to one ratio between staff and volunteers on the one hand, and the resident on the other. Two riding instructors lead RM and are in charge of managing participant paperwork, screening residents for appropriateness for program, ensuring

safety, riding structure, and planning other equine-related activities. In addition to riding instructors, there were typically 10-12 volunteers. Volunteer responsibilities included interacting with residents throughout the program, helping with safety precautions such as putting on helmets and side-walking while riding, assisting with equine-related activity set-up such as grooming sequence, and tacking and leading the horse. All volunteers are required to attend an orientation before volunteering. The orientation provides an overview of the programs offered at the facility, a facility tour, and an introduction to training opportunities and scheduling. After this orientation, volunteers are able to decide how they want to spend their time at Hearts and Horses. Volunteers can help with barn work and individual classes as a horse leader or side-walker. Barn work training includes learning where supplies are located, procedures for turn in/out, and haltering techniques. Horse-leader training consists of learning how to tack up and lead horses during programs. Side-walker training includes learning about safety precautions such as emergency dismounts and helmet use.

There is no formal volunteer or staff-training specific to RM and working with people with dementia. However, during the interviews, the three key informants from Hearts and Horses emphasized the need for additional staff and volunteer training for RM. One key informant shared,

Consistency is really important with staff and with volunteers. I think a more extensive training day about dementia, the residents, and the role of the program for our next session needs to happen. I want everyone to feel like they are part of a team (T.M. Interview 10.18.16).

Our Partners: Horses. Hearts and Horses staff partnered with three horses and one pony to provide RM. Two horses provided riding activities: Blanca and Cinnamon Girl. Blanca is a 14-year-old mare of the Spanish Barb/ Quarter horse breed. The three key informants from Hearts and Horses describes her as a social butterfly, sweet, and steady. Cinnamon Girl is an 18-

year-old mare of the Haflinger breed. She is described as getting along with other horses and hard working. Sugar was the designated horse in the program for grooming activities. She is a 21-year-old mare from the Appaloosa breed that is portrayed as accepting, never jumpy, and loves to be groomed. Creme 's debut was during RM. To date, she is on trial at Hearts and Horses to make sure she is a good fit at the center. She is a 15-year-old mare Shetland/Welsh pony. During the program, Creme primarily interacted with participants sitting on the bench to provide a petting opportunity while other participants were riding.

Duration and cost. RM runs in the summer and the fall. Sessions are typically an hour long and range from four or eight weeks, depending on the facility needs. Residents attend RM one time per week for about an hour. The cost for a group of up to 12 residents for a four-week session is \$600. The cost for a group of up to 12 residents for an eight-week session is \$1200.

Resident screening and measures. Three key informants from RM shared that residents must have completed an enrollment packet with medical forms at least three weeks prior to the session start date. When the forms are completed, riding instructors involved in RM travel to the care facility to complete an in-person evaluation with each potential resident. Staff from the facility such as nurses and/or therapists are encouraged to be available for the evaluation to answer questions related to any medical or functional abilities of the resident. M.K. detailed the screening process at the center as follows:

We bring a barrel that's been designed to hold the saddle in place. It's lowered to the ground and the horse would be. But we basically want to see multiple things. We want to see how well they follow directions because we'll have them get on the barrel and on the saddle in a one-two-three format. First, we're going to do this. Second, we're going to do that. Now, we're going to do this. How they feel about being touched because we have to have our hands on them when they're mounting-dismounting. So, are they open to that or are they're argumentative about that? Are they unable to cognitively separate each step and listen to us and do what we ask? And then once they're sitting there, how does it feel? Is it really uncomfortable to be sitting with your legs spread on the saddle? Does it hurt their hips? Does it hurt their legs? Hurt their knees, their back? How does it feel when

they're sitting on there? And then how about getting off? Can they get off the regular way over their group? All that information then helps us come back to Hearts and Horses and determine who will be able to do what activity (Interview 10.18.16).

T.L. shared that she makes a point to visit the facility to meet with the program or activity director beforehand to learn about their care approach, how they operate as a facility, and how the different residents like to be approached that will be in RM. Hearts and Horses does not use any formalized assessment measures to capture resident outcomes during RM. However, all three key informants from Hearts and Horses stated that they would like to see that change.

Specifically, T.L. commented:

Although our staff involved in RM collect some resident information, I think we can do a better job at getting to know the residents better before starting the program. I would also like to come up with some kind of really simple thing that tracks progress or changes over time. Those are goals of mine, we do track outcomes with other programs here but not with this one [RM]. I feel like there is definitely room for improvement with that on our end.

Activities. During RM, residents are exposed to three different stations composed of different activities. Station one is described as 'home base' or bench time. Once residents are assisted off the LTC facility bus, they are directed to go sit down on a bench or chair. Volunteers then approach the residents to see if they would like to interact more closely with the horse during the program. If a resident response is a yes, volunteers help that resident put on a helmet for safety and also guides the resident to the desired activity. M.K shared some examples of other activity opportunities during bench time: 1) conversing with other residents, volunteers, and staff, 2) taking in the rich surrounding such as the sight of other activities, smell of the horses and equipment, or touch of the cool breeze coming into the arena, and 3) interacting with the RM pony, Crème.

Station two provides residents an opportunity to care and groom a horse that is tied up to a post and is supervised by a horse leader. Here, the horse leader introduces the horse to the

resident and describes the grooming process by breaking down the steps and describing the different tools. During this time, the residents get to know the horse better and interact on a more individual basis. M.K. shared a very emotional experience of a resident during the grooming activity:

Coming initially, Opal was not getting into any of the activities during the program, "No. I don't want to wear a helmet. Thank you." But she did end up putting on her helmet to ride.... after she rode for about 10 minutes, she got off and went right over to Sugar to start grooming her. All of a sudden everybody [volunteers, staff, and residents] is talking and continuing with other things and we just hear the singing, a beautiful singing-it was that resident.... she had a complete change in mood for the better.

The last station or activity involves the riding component. Here, residents are assisted to and up a ramp to help with mounting the horse. Two key informants, M.K. and D.L., described this station as posing the highest safety risk and most challenging. Mounting the horse involves at least one instructor on the side of the ramp with the resident sharing directions on how to get on the horse, one instructor on the other side of the ramp to help guide the resident's lower body onto the horse, and one horse leader positioned in front of the horse during the mount. After the resident is sitting on the horse, the lead riding instructor checks the resident's positioning in the saddle for weight distribution and location and also adjusts stirrups if necessary. Once the resident has an optimal position, two side-walkers come up next to the rider, one on each side of the horse, to ensure safety. The horse leader and the side-walkers then cue the resident on riding techniques such as horse commands and steering with reins. The three key informants from Hearts and Horses also provided additional riding activities incorporated in RM:

- 1) Steering around cones and barrels
- 2) Going on outdoor trail
- 3) Throwing balls into basketball hoop
- 4) Putting rings on simulated tree
- 5) Completing arm exercises
- 6) Going over ground poles

After the riding activities, the resident completes a dismount with the help of the riding instructors. There were two dismounts used during RM: croup and crest dismount. The riding instructor collaborated with the resident to determine which dismount would be the safest and most comfortable. Once off the horse, volunteers then help the resident back to 'home base' or to the grooming station.

Describing, classifying and interpreting qualitative data sources. Open-ended questions were utilized to capture a rich description of both environments and their perceived influences on QoL. Table 14 shows, from the perspectives of the key informants in this study, the types of observed outcomes, hypothesized influences as to why things are working, and presumed dementia care approaches to enhance QoL. Words that are italicized in Table 14 represent empirical codes that emerged through analysis of the data and reflect the interview questions and further signify ideas that occurred most often across the data set. Sub-codes below each empirical code represent in-vivo codes, or exact words from the key informants. Counts of each code and sub-code are provided to help comprehend the relationships among them. Illustrative quotes from key informant interviews and field notes are expounded to further develop the understanding of the equine-environmental influence on QoL.

Table 14 Codes and Sub-codes from Open-ended Questions (n=165)

Codes and Sub-codes	Count
<i>Outcomes</i>	101
Well-being	40
Functional Abilities	34
Social Relationships	27
<i>Why Things Are Working</i>	35
Horse and Nature Connection	17
Social Participation	11
Holistic Experience	7
<i>Dementia Care Musts</i>	29
Recognize the Person	13
Communication	8
Compassion	4
Safety	4

Outcomes. *What resident outcomes, positive or negative, have you observed from RM?*

The most frequent code was ‘outcomes’ (101). All key informants viewed outcomes as the ‘end result’ for the residents involved in RM and furthermore, described what the residents achieved in response to RM. Three sub-codes, well-being, functional abilities, and social relationships, were identified and are presented highest to lowest frequency. These sub-codes correspond with three dementia-specific indices of QoL represented in the LELQ Model (Wood et al., 2016) of relative being, functional competence, and time use. No negative outcomes were described by the key informants.

Well-being. Key informants made 40 responses related to the residents experiencing, “well-being.” This concept, as described by the key informants and illustrated in the field notes, reflects the concept of relative being in the LELQ Model (Wood et al., 2016). For example, when speaking of well-being, key informants included descriptions of observed positive experiences, including feelings of confidence and competence. Four key informants primarily noted how happy the residents were during activities. For instance, D.L. commented that residents’ levels of

excitement would increase when the pony, Crème, came to visit the session. Observations in field notes (10.14.16) revealed that background music playing in the arena also facilitated a sense of cheerfulness among the residents; many residents would be observed smiling, humming to the music, or dancing. A response from J.L. demonstrates the perceptions of a resident's inner satisfaction:

Many of the residents really enjoy the trip to the ranch [Hearts and Horses]. They talk about it the rest of the day. I can mention a horse after the program and they know exactly what I am talking about. In fact, many of them come back and share with other residents that they got to go riding and are all smiles (Interview 10.20.16).

Two key informants, D.L. and T.M., shared that after a couple of sessions, many of the residents developed a level of comfort with certain horses and volunteers. Sadly, one of the horses, Rebel, which had been used during the summer session of RM had passed away before the fall session had started. D.L. shared that Dennis, who previously rode Rebel, noticed he was gone.

In addition to emotional experiences, key informants and field notes provided examples related to residents' identities and ability to live in the present moment and make connections with others.

Henry has ridden a lot in his life so at first, he was uncomfortable with how we dismounted. He wanted to hold on to the saddle horn as we dismounted and felt like he didn't need our help getting off the horse; he had his own routine so we went with it (D.L. Interview).

Another resident, Rose, was always observed wearing her cowgirl boots; one staff member shared, "you [Rose] look like a cowgirl out there! Rose beamed, well I am [while doing a roping motion] (Field Note 9.30.16)!" Other key informants emphasized how RM revealed aspects of the resident's identities. Correspondingly, a field note detailed an interaction with Dennis. Given his past experience with horses, the act of grooming is most likely pulling from his previous routine with his own horses. One volunteer handed a soft brush to Dennis and he immediately

began to brush down the entire body of the horse, including not only his body but also face. During this activity, Dennis is interacting with the volunteer, speaking to the horse, and smiling (9.2.16). Notably, J.L. shared, “some of the residents that come have backgrounds with farms or were ranchers. While they are at Hearts and Horses, it really gives them those memories that maybe they couldn’t remember until they were exposed to it again.”

Functional abilities. Key informants made 34 references to residents improving, in the words of the key informants, “functional abilities.” This concept, as used by the key informants, was related to the quality of residents’ functioning in the LELQ Model (Wood et al., 2016). For example, when speaking of functional capacities, key informants included considerations for physical, social, and cognitive capacities. In particular, respondents noted positive body function outcomes such as improvement in the musculoskeletal system. For instance, T.M. shared that she observed a change in one of the resident’s trunk control, “When Opal first got on the horse, she had such poor trunk control; it is almost like she did not have the strength or stamina to hold herself upright. The last session though, she appeared more straight and strong while riding.” Another body function T.L. witnessed a positive change in for some residents was voice and speech function, “After a couple weeks of the program, Gertrude was just speaking clearly; she was singing and all the words together were making sense. It was an improvement from her typical gurgled and soft speech.” Several key informants also shared that they saw many of the residents experience positive changes in their social capacities.

It is interesting to see all the social interaction going on. I think you probably do not see that where they live, they sit and they are quiet. There is not a lot of interaction with each other. Here, they are talking the whole time about whatever. Maybe it is about their youth or their horse experience or a horse they once had (M.K. Interview).

Positive changes in specific mental functions such as attention and sequencing were described.

D.L. explicitly illustrated,

They [residents] seem to remember the steps of mounting and dismounting, even though we help them each time with the steps. Oh, I'm [resident] to take my feet out of the stirrups, then lift my leg across the horse. Each time we see that they get a little more confident and comfortable with the process (Interview 10.19.16).

Additionally, two key informants, M.K. and D.L., noted that during the mounting and dismounting process, they observed more concentration, ability to sustain shifting, and an ability to complete steps in the correct order among residents.

Social relationships. The interviews and field notes made 27 references to “social relationships.” This sub-code was related to the time use sub-domain of the LELQ Model; here, it is emphasized that fostering a sense of connection or opportunity for engagement is essential for improving QoL (Wood et al., 2016). One example illustrated the importance of the resident’s successful involvement in activity while engaging with others, “We [staff] never want to set a resident up for failure, so when we are doing an activity we are constantly encouraging them and providing them more attention so they can really enjoy the moment” (L.K. Interview). D.L. described the level of interaction the resident experiences while riding:

Side-walkers would show Dennis how to steer through cones, going left and right. Once they provided him the directions, he would really do it and almost over exaggerated his steering for the side-walkers. There was just this constant interaction between everyone.

In addition, observations from field notes emphasized the sense of the residents’ feelings of belonging through sharing similar experiences with the other residents and through participating in social groups.

Evelyn was not very engaged with her surroundings. She usually just looked down into her lap or to the ground, no attempt at initiating conversations with volunteers. One volunteer simply asked if she wanted to go over where other residents were grooming a horse. She got up with the volunteer and walked right over to the horse and started petting her with the other residents (Field Note 9.23.16).

Key informants also perceived social relationships developed in the program as a means for forming positive connections with family members. L.K. shared a conversation that she had with one of the residents' daughters:

When I [daughter] looked at mom just a bit ago, I thought, this is it; it is the end of her life. Then you get these incredible pictures of her excitement and hear that your mom who is nonverbal makes so many connections in the program, it is just an amazing feeling (Interview 10.20.16).

Why things are working. *How do you believe RM influences the resident's QoL?* From the words of the key informants, "why things are working" was coded 35 times and represents three different postulated influences of the RM on QoL: horse-nature connection, social participation, and holistic experience. These sub-codes are presented highest to lowest frequency. Of note, none of the key informants shared negative thoughts regarding the program's impact on QoL.

Horse and nature connection. Many of the key informants spoke to the power of the horse and nature connection as an influence of change for the residents. D.L. explicitly described the horse-resident connection:

I have observed the horses during the program-they tune into our folks with dementia in a different way. I have a horse that may be naughty in some situations but once they [horse] get around the elderly they seem to sense that they [elderly] are not a threat. So, they are just calmer and that helps the residents relax.

T.M. described the nature connection, "many people have past experiences and memories with nature.... it's important for people with dementia to be provided outdoor programs as a way to reconnect with meaningful moments." L.K. described the various aspects of nature that institutionalized adults with dementia do not get to experience on a regular basis: taking in the sights and smells of the countryside, petting horses and handling horse gear, and walking on uneven surfaces such as the sand in the arena. Moreover, she emphasized her belief that people

with dementia greatly benefit from outings involving the natural outdoors; “horses are a wonderful tool for soothing and calming and they bring out this strong human-animal bond.” Another respondent, D.L., explained the horse connection through sensory input. “It can be a really positive experience for people with dementia-touching them [horses], smelling them, hearing their sounds-they really seem to stimulate so much which can be a positive thing.” In addition, all five key informants elucidated how the residents are more eager to participate at RM stations because the interaction with the natural environment and horse is motivating and fun. For example, L.K. shared that many of the residents have past memories with horses so they are inclined to interact more and “enjoy being in the moment.”

Social participation. All key informants shared that RM produced opportunities that involve the presence of, and engagement with others. Descriptions from the key informants illustrate that social participation is both multidimensional and context-dependent. M.K. provided an example of the multidimensional nature of social participation, “you often see many of the residents, while they are riding, talking to their horse, talking to the side-walkers.... there is just a lot of interaction going on. Furthermore, T.M. emphasized the importance of interaction, “Creating connections are huge-with the horse, with other people. Just being able to have a shared experience that is going on with everyone else around you is really important for overall well-being.” Another respondent, D.L., alluded to the context as the driving force of social participation:

Many of us today have horrible thoughts and ideas about what it means to be in assisted living or other care facilities. Maybe people who work with the residents on a daily basis see them in a different light or experience burnout and as a result do not want to always encourage engagement. I know that those negative thoughts are not necessarily true, but I do know when the residents are here, they are not only interacting with each other and horses, but they are also getting all kinds of interaction with volunteers who are very interested in them and happy to have them be a part of the program.

This account of social participation reveals that participation among people with dementia may differ, depending on what they are doing and where the activity is taking place.

Holistic experience. Three of the key informants, T.M., D.L., and M.K., conceptualized RM as a holistic experience, detailing the interdependence of person and context factors.

Moreover, these respondents described the residents experience in the program as a transactional relationship where context and behavior are synergetic components. T.M. shared:

I think there are so many things. One being outside and having this connection with nature. I love that a lot of people have memories with horses and hearing their stories. So, I think connection those old memories with current new memories or experience is really awesome. Then there is the riding piece. I feel like there is just this motion of the horse that has a calming effect on them [residents]. There is just this working relationship; the program is such a rich experience from sensory to physical and is made up of so many components that really impact people on so many levels.

Another key informant describes the layers of a transactional view of RM:

I think the program impacts people on multiple levels. The program is an outing for the residents so that is one element; it involves an animal as another layer; and then there is the movement and socialization piece of the program. I think having this kind of recipe-those things together, I think are what makes the program so successful. I think if you took the elements apart individually you would not have that rich experience (M.K. Interview).

This description highlights that the program consists of more than the physical form of the environment-person transaction; it is inclusive of the full range of experience for the residents.

That is, the residents and contextual factors or RM transact as co-constituted units.

Dementia care musts. *What do you think contributes to best dementia care?* All key informants reflected on what they consider good practice. Twenty-nine rich descriptions helped generate four ‘dementia care musts’: recognize the person, communication, compassion, and safety. Key informants implied that these principles must be considered if the activity is going to be of therapeutic value for the residents. These sub-codes are presented highest to lowest

frequency. Of note, there was no common definition of best dementia care practice among the key informants.

Recognize the person. All key informants highlighted the importance of understanding who the person is; their feelings and intentions in the moment as well as their past and future story. To do so, key informants shared that it is necessary to build a relationship that continually encourages the person with dementia to do what is most meaningful to them. L.K. shared how she gets involved with the people with dementia she works with as well as how she encourages other caregivers to do the same:

I want to be involved as much as possible and I want other caregivers to do the same. I want to know their [residents with dementia] children; I want them to know what they did for a living; we do monthly quizzing on the residents and I gather their sheets and check in with caregivers to see how much they know about the residents.

Furthermore, J.L. explained that in order to optimize QoL for people with dementia, it is important that daily activities capture their interests and past roles. Likewise, M.K. stated, “they are still people with a past and they are still living in the present. We should be accommodating to what they need in the moment so we can help facilitate reasons to enjoy life.” Providing choice was another component that two key informants considered essential for recognizing the person. T.M. illustrated that people with dementia demonstrate more engagement when presented various opportunities, “the light just gets turned on for them when they are doing something *they want* to do.” J.L. linked choice as a contributor to a person’s sense of self-esteem.

Encouraging activity is huge and we [staff] need to know which people like to participate in music versus storytelling, jokes, or gardening. Everybody has their preferences and we pride ourselves in knowing our residents [people with dementia] and allowing them to decide what they want. We want them to enjoy the situation and feel successful.

Communication. The importance of delivering effective communication when working with people with dementia was explicated in all of the interviews and further explicated in field notes. Key informants shared that communication requires patience and respect. M.K. expressed that, “you have to be calm and patient with them [people with dementia] and treat them like your family members would want to be treated-you cannot be condescending with them, you just have to take your time to explain things.” Four key informants provided strategies for communicating with people with dementia. T.L. noted that it is important to use simple words and phrases and to avoid overwhelming stories or directions. Several key informants underscored the value of simplicity as the dementia progresses; they described their observations of residents using words repeatedly, losing track of their thought, and having difficulty with motor-planning and organizing words in a logical manner. D.L. further elucidated, “Directions and tasks need to be simple. You cannot over explain or have a task that involves a ten-step process. Modifying the task and simplifying instructions is key.” One field note (10.14.16) provided an example of modifying a task for a resident:

Rose expressed that she was tired and could not stand for long periods of time but wanted to groom the horse. Volunteer suggested to the resident that she should sit on her four-wheeled walker while she grooms the horse to avoid fatigue. Rose grooms the horse for about 15 minutes.

In addition, J.L. shared that you should avoid quizzical comments such as, do you remember when type phrases. He further explained that asking questions can lead to problematic behaviors and instead suggested turning a question into an answer. Another strategy mentioned by M.K. conveyed the importance of redirection rather than correction during emotional or stressful times for the person with dementia. Specifically, she explained that you should not tell the person with dementia they are incorrect, as it can lead to arguing and increase the person’s level of agitation.

Instead, she offered redirection suggestions such as be “warm and open and try to understand the cause of their unexplained behavior.”

Compassionate care. All key informants indicated the need to approach the person with dementia in a supporting, honest manner. L.K. shared what it takes to work in dementia care:

People need a heart for it [working in dementia care setting]. I understand that there are people that just do not fit with memory care needs. I believe that you have to have a very special soul to be able to do this work. It is a lot of redirection and it can be a thankless job. In other assisted living facilities, you are often working with people who can say thank you for everything that you did. In memory care, you often do not get that. This job is about being able to be that voice for somebody who cannot voice exactly what he or she needs.

L.K. further referred to compassion as the ability to feel with the person with dementia and act upon that shared feeling as a way to alleviate any of their problematic behaviors. To convey compassionate care, J.L. noted that a deep understanding of what the person with dementia is experiencing is required. Two other key informants, D.L. and M.K. associated empathy and recognition with compassionate care. Here, they suggested that you should appreciate and respond to desires with an open and unprejudiced attitude. In turn, T.L. illuminated that people with dementia will not simply exist, but will experience a sense of belonging.

Safety. J.L. noted that as dementia progresses, people are at a heightened risk for safety concerns; they experience changes in their judgment, behavior, senses, functional mobility, and orientation. However, three key informants stressed the importance of safety during RM. In particular, responses indicated several precautionary measures utilized in their practices. T.L. shared that at Hearts and Horses they [staff and horses] go through extensive training with mounting and dismounting people. She further accentuated “your team just needs to be a really well-oiled machine to have a high quality, safe program; everything needs to come together and function.” D.L. and M.K. noted safety measures including: 1) providing supervision during

activities, 2) having structured plans for emergency conditions such as a fall, 3) removing trip hazards, 4) supporting the person's need, 5) paying attention to weather, and 6) wearing proper gear such as a helmet when riding a horse. M.K. shared,

I always hear from people in the community how surprised they are to learn that people with dementia are actually involved in programming at Hearts and Horses; they often think there are more risks than rewards for this population like falling or easily getting confused and anxious.

D.L. commented on the potential safety risk for people with dementia involved in RM:

Yes, horses can be dangerous but we do everything we can to mitigate risk with our side-walkers, horse leaders, the horses we have selected for the program, as well as matching residents to activities. I think the more people that find out about our program and how successful it is safety wise, more programs like ours will start to pop up.

Merging the Strands: Research Question Three

How do the perspectives of key informants and field notes help to explain the influence of an EAI (i.e., RM) on dementia-specific QoL? This study sought to compare and contrast the prevalence of dementia-specific QoL indicators across routine activity situations for adults with dementia in an institutional home. Research question three brought together and interpreted both the quantitative and qualitative data collected in this mixed methods study, related to the unique activity situation, RM. The quantitative data have assisted in providing the big picture, revealing different patterns of involvement in the ACT sub-domains for the residents with dementia. The qualitative data have assisted in developing and sharpening this picture, assisting to explain the phenomenon under scrutiny.

Table 15 displays each ACT sub-domain and the most prominent activity situation findings from the quantitative strand as they correspond with key informant interviews and field note observations. Here, I created a joint display, which is comprised of the qualitative codes derived from the qualitative analysis and the quantitative categorical data from the ACT and

statistical results. This joint display allowed me to arrange both quantitative and qualitative data as a way to compare the multiple sources directly. In effect, the display ‘merges’ and triangulates the three sources of data.

Table 15 Findings from the ACT Corresponding with Interviews and Field Notes

	<i>Top Five Positive QoL Indices Observed (Percent within Activity Situation)</i>	Qualitative Findings		
		<i>Outcomes Well-being; Social Relationships; Functional Abilities</i>	<i>Why Things Are Working Horse and Nature Connection; Social Participation; Holistic Experience</i>	<i>Dementia Care Musts Recognize the Person; Communication; Compassion; Safety</i>
Quantitative Findings	<u>Conversation</u>	Field Note: Well-being	Key Informant: Social Participation	Key Informant: Communication
	<ul style="list-style-type: none"> • RM (78.9%)* • Physical Therapy (66.7%) • Games (50.0%) • Downtime (33.3%) • Story/News Group (22.7%) 	One of the residents begins to sing while she is grooming a horse; she continues singing as she pets and grooms the horse’s head. She tells one of the instructors that Romeo [horse] is a great, sweet horse. LTC staff share that this is the first time they have heard her sing aloud during an activity. (Field Note 10.14.16)	“You often see many of the residents, while they are riding, talking to their horse, talking to the side-walkers.... there is just a lot of interaction going on.” (M.K. Interview)	“It is important to use simple words and phrases and to avoid overwhelming stories or directions.” (T.L. Interview)
	<u>Apparent Affect- Pleasure</u>	Field Note: Well-being	Key Informant: Holistic Experience	Key Informant: Recognize the Person
	<ul style="list-style-type: none"> • RM (60.5%)* • Music Group (44.1%) • Bus (39.0%) • Downtime (29.9%) • Joke/Riddle Group (18.2%) 	Given Dennis’ past experience with horses, the act of grooming is most likely pulling from his previous routine with his own horses. One volunteer handed a soft brush to Dennis and he immediately began to brush down the entire body of the horse, including not only his body but also face. During this activity, Dennis is interacting with the volunteer, speaking to the horse, and smiling. (Field Note 9.2.16)	“The sights and smells, especially for the people that have ridden before or those who enjoy nature, really brings out a sense of joy...it seems to stimulate the mind in a really positive way.” (D.L Interview)	“Henry has ridden a lot in his life so at first, he was uncomfortable with how we dismounted. He wanted to hold on to the saddle horn as we dismounted and felt like he didn’t need our help getting off the horse; he had his own routine so we went with it.” (D.L. Interview)

<u>Engaged Gaze (Four-way tie)</u> <ul style="list-style-type: none"> • RM (100.0%) • Physical Therapy (100.0%) • Story/News Group (100.0%) • Games (100.0%) • Bus (97.6%) 	Field Note: Social Relationships	Key Informant: Social Participation	Key Informant: Recognize the Person
	Evelyn was not very engaged with her surroundings. She usually just looked down into her lap or to the ground. One of the volunteers brought Crème [horse] to her and she immediately looked at Crème and started interacting with her. (Field Note 9.23.16)	“Creating connections are huge; Just being able to have a shared experience that is going on with everyone else around you stimulates engagement in activities.” (D.L. 10.19.16)	“People with dementia demonstrate more engagement when presented various opportunities; the light just gets turned on for them when they are doing something <i>they want to do.</i> ” (T.M. Interview)
	Key Informant: Social Relationships	All Key Informants: Horse and Nature Connection	Key Informant: Safety
<u>Participation</u> <ul style="list-style-type: none"> • Meals (60.3%) • Games (50.0%) • Music Group (43.0%) • Joke/Riddle Group (36.4%) • RM (34.2%) 	“Side-walkers would show Dennis how to steer through cones, going left and right. Once they provided him the directions, he would really do it and almost over exaggerated his steering for the side-walkers. There was just this constant interaction between everyone.” (D.L. Interview)	Key informants elucidated how the residents are more eager to participate at RM stations because the interaction with the natural environment and horse is motivating and fun.	“I always hear from people in the community how surprised they are to learn that people with dementia are actually involved in programming at Hearts and Horses; they often think there are more risks than rewards for this population like falling or easily getting confused and anxious.” (D.L. Interview)
	Key Informant: Social Relationships	All Key Informants: Horse and Nature Connection	Key Informant: Safety
<u>Position and Movement- Standing/Walking</u> <ul style="list-style-type: none"> • Physical Therapy (66.6%) • Downtime (31.5%) • RM (23.7%) • Bus (13.0%) • Music Group (4.3%) 	X	X	Field Note: Communication
	X	X	Rose expressed that she was tired and could not stand for long periods of time but wanted to groom the horse. Volunteer suggested to the resident that she should sit on her four-wheeled walker while she grooms the horse to avoid fatigue. Rose grooms the horse for about 15 minutes. (Field Note 10.14.16)

	<u>No Agitation (Seven-way tie)</u>	X	Key Informant: Horse and Nature Connection	Key Informant: Compassion
	<ul style="list-style-type: none"> • RM (100%) • Music Group (100%) • Joke Riddle Time (100%) • Bus (100.0%) • Physical Therapy (100.0%) • Games (100.0%) • Television (100.0%) 	X	<p>“I have observed the horses during the program-they tune into our folks with dementia in a different way. I have a horse that may be naughty in some situations but once they [horse] get around the elderly they seem to sense that they [elderly] are not a threat. So they are just calmer and that helps the residents relax.” (D.L Interview)</p>	<p>L.K. referred to compassion as the ability to feel with the person with dementia and act upon that shared feeling as a way to alleviate any of their problematic behaviors.</p>

Note. *=statistically significant association between RM and the sub-domain in comparison to all other activity situations.

In the present study, a pattern of difference between RM and other activity situations was observed around levels of conversation, pleasure, and, to a lesser extent, standing/walking, engaged gaze and participation. There was no difference between the sub-domain of agitation and RM in comparison to all other activity situations. These quantitative findings are shown along the vertical dimension of Table 15. For the qualitative data on the horizontal dimension of Table 15, four sub-codes that were expounded and relate to the quantitative findings include outcomes, why things are working, and dementia care musts. Both quantitative and qualitative results suggest that RM offered the residents an opportunity that positively influenced dementia-specific QoL. Next, I elaborate on the merged results as presented in order of the table.

The quantitative findings demonstrated a significant association between RM and amount of conversation. I used both qualitative data sources to dive deeper into the motivations behind the range of communication usages. Key informant responses reflected the importance of understanding how communication changes as the dementia progresses and how to prepare and make adjustments to facilitate effective communication. Supporting quotes illustrated the Hearts and Horses staff awareness of what contributes to the exchange of thoughts and information. In addition to addressing the communication needs of the resident, a key informant, M.K., shared the influence of the social environment on facilitating interaction. Further, a field note helped explain the influence of the social environment (i.e., the horse) on the resident's well-being in the moment, as she was observed singing for the first time during an activity.

The quantitative and qualitative data demonstrate the influence of RM on conversation and communication. The ACT observations did not distinguish between conversation and communication, nor did the key informants explicate the difference between the two terms.

However, both data sets suggest that RM facilitated a dynamic feedback cycle that encompasses the ‘giving and receiving of information’ between not only people, but with horses as well.

Given the positive time use findings among the residents during RM, it is no surprise that there was also a significant association in positive affect (i.e. pleasure) for the residents during RM in comparison to all other activity situations. Indeed, both data sets acknowledge the positive influence of RM on well-being. One field note suggested that environmental elements, including the horse, grooming equipment, and volunteers, may influence behaviors and positive affective responses such as smiling. Other key informants richly described the holistic and stimulating experience of RM, where the sights, smells, and sounds of nature were directly linked to the sense of joy and cheerfulness observed from the residents. In addition, all key informants remarked on the importance of recognizing the person to promote optimal resident experiences such as those in RM. Here, recognizing the person took into consideration the preferences and needs of the resident during a riding activity.

All observations of gaze during RM were coded as ‘engaged gaze’ (i.e. the evidence of attention to something in the environment). Both quantitative and qualitative data demonstrated that volunteers and other RM staff regularly ‘engaged’ the residents directly. Although the nonparametric statistical testing revealed no significant associations between the routine activity situations and the residents’ gaze, it is important to note that residents were more likely to exhibit an engaged gaze with more than one-person, animal, or nonsocial object during RM in comparison to other LTC activity situations. Indeed, residents were highly likely (74%) to demonstrate this more complex gaze with both a horse and a person. Several field notes elucidated the social relationship between a horse and a resident as a driving force for positive engagement. Likewise, one key informant, D.L., further described and contributed aspects of the

social environment (i.e., people involved in RM) as a means for creating connections. Equally important for promoting engagement, another key informant, T.M., suggested that people with dementia should be presented opportunities that interest them.

The quantitative or qualitative analysis does not provide cause and effect relationships; however, both data sets characterize the influence of RM on social inclinations. Specifically, RM provided residents an outlet for verbal and nonverbal interactions. Moreover, positive findings from both strands indicate that the direct engagement with people and horses in RM empowered connection making.

The quantitative findings revealed that participation was significantly greater in Meals, Games, Music Group and Joke/Riddle Group than the RM activity situation. While RM ranked below other activity situations, further analysis showed that it had the highest proportion of complex participation. For example, one field note (8.25.16) revealed the complex and holistic nature of mounting a horse, involving sophisticated cognitive abilities including sequencing, attention, and motor planning. Mounting a horse involved five dynamic steps: 1) position yourself next to the horse, 2) grab the pommel of the saddle for support, 3) put your left foot in the stirrup, 4) stand on your left foot and swing your right leg over, and 5) slowly sink into the saddle.

In addition to stimulating cognitive abilities, D.L., shared how several riding tasks provoke social participation through the residents' interaction with side-walkers. All key informants linked these positive outcomes to the horse and nature connection. In particular, everyone echoed that the residents were more eager to participate at RM stations because the interaction with the natural environment and horse was motivating and fun. This example illustrates the capacity of RM to provide opportunities to improve participation limitations

through purposeful and meaningful tasks. Other key informant thoughts and field note responses related to participation and safety implications. None of the qualitative data indicated negative outcomes from participating in RM. Further, the quantitative data suggests that RM prompted the use of a variety of functional abilities, contributing to participation, which were infrequently expressed in other activity situations.

The quantitative findings revealed that standing and walking, the positive QoL indicator in the position and movement subdomain, had the highest proportions of observations in Physical Therapy, Downtime and RM in comparison to all other activity situations. Conversely, none of the qualitative data addressed the ability or quality of the resident's functioning in relation to standing or walking during the RM stations. Instead, key informants detailed outcomes related to the other category of position and movement, lying/sitting. Qualitative findings suggested that residents may have improved their postural stability while riding a horse (i.e., sitting) during RM. Although the experience of riding a horse was suspected to enhance motor skills, the key informants did not go into detail about the mechanisms or processes of change yielding desired outcomes, or simply, why things are working.

However, field notes provided examples of dementia care musts, or specification of critical inputs that helped characterize the EAI. One volunteer attended to a resident's position and movement during a grooming activity in order to create an optimal experience in the moment.

Further analysis revealed that while residents were primarily observed to be seated during RM tasks, results still indicate that residents were frequently up and moving more than other activity situations that occurred at Seven Lakes. Thus, it appears that opportunities provided during RM offer sufficient support and encouragement for enhanced physical activity.

Lastly, although there was a significant association between activity situations and agitation, residents with dementia were rarely observed to demonstrate agitation. Therefore, it is not surprising that none of the qualitative data sources explicated a direct connection between activity situations increasing or decreasing resident agitation as an outcome.

Both qualitative and quantitative findings suggest that both facilities, Seven Lakes and Hearts and Horses, provided the necessary physical and social environmental support to engage in diverse activity situations. L.K., a key informant from Seven Lakes, shared the importance of providing compassionate care to help the person with dementia feel at ease and reduce the chance of agitated behaviors from occurring. Similarly, D.L., a key informant from Hearts and Horses, spoke to the power of the horse and nature connection as an avenue for helping the residents with dementia unwind. These findings not only reveal that caregivers and staff in both environments view people with dementia through a lens of possibility for connection and participation in activity situations, but they also intuitively understand the personal health and well-being benefits arising from contact with natural contexts.

Overall, statistically significant associations were found between RM and two sub-domains (i.e. conversation and apparent affect-pleasure) in comparison to all other activity situations. In addition, residents demonstrated more frequently multiple engaged gaze and complex participation during RM. A statistically significant association was also revealed between RM and the sub-domain position and movement in comparison to all other activity situations, however, the statistic was not indicative of the positive QoL indicator in this domain, standing and walking. Lastly, there was a significant association between all activity situations and the sub-domain agitation; exhibitive that residents rarely experienced agitated symptoms in any of the activity situations. On their own, the quantitative findings do not tell the entire story of

RM. They highlight the environmental influence of RM on QoL. However, they do not explain the ongoing transactions among the residents with dementia and the physical and social elements of RM that give rise to the expression and suppression of QoL outcomes. The qualitative data provided the story behind the statistics; altogether, the power of this mixed methods approach has illuminated the residents' abilities for activity engagement and participation in the moment during RM with appropriate attention given to their occupational needs, retained capacities, and necessary environmental supports.

CHAPTER FIVE: DISCUSSION

This exploratory, mixed methods case study investigated interrelationships among nine routine activity situations offered by Seven Lakes Memory Care, an assisted living facility in Loveland, CO, and the quality of life (QoL) of six of the facility's residents with dementia. The study primarily focused on the unique activity situation, an equine-assisted intervention (EAI) called Riding in the Moment (RM). Unlike the other in-facility routine activity situations, RM took place at Hearts and Horses Therapeutic Riding Center in Loveland. Direct, real-time, computer-assisted observations of RM and its dynamic context revealed that this activity situation was safe for the residents in the mild to late moderate stages of dementia. Field notes and perspectives from five key stakeholders from Seven Lakes and Hearts and Horses also corroborated that implementing RM was practically feasible, as well as congruent with the philosophy and mission of the respective organizations. Altogether, findings offer proof of concept that RM, as an activity situation, was highly occupationally enlivening. This conclusion is supported by evidence of the comparative prevalence of positive QoL indicators demonstrated by residents during RM in contrast with other activity situations, in addition to field note descriptions and the stakeholders' perspectives on outcomes of RM, why it worked, and how it exemplified essential dementia care practices.

My intent with this chapter is to integrate and expand upon these results with my theoretical rationale, which confirms the following major point proposed by Wood et al. (2005): the activity situations that prevail in institutional homes for adults with dementia may be central environmental determinants of the QoL experienced by residents. I expound upon this notion further in the next two sections, detailing the unfavorable and favorable transactions among the

residents with dementia and their experience with activity situations. I then offer two explanations as to why RM may be an effective environmental intervention for institutionalized adults with dementia. After, I share strengths and limitations of the study, describe my study as it relates to two sciences, occupational science and rehabilitation science, and provide recommendations for future research and practice. Lastly, I acknowledge my revelations from the study.

Occupationally Deadening Activity Situations

Findings indicate that residents experienced occupationally deadening environmental presses more often during the activity situations of downtimes, television and meals and to a lesser extent during physical therapy, games and joke and riddle time. The portraits of residents' time use and apparent affect suggest that their retained capacities were rarely tapped, partially expressed, and ultimately tempered their involvement during these activity situations. These negative experiences are most likely due to the lack of interaction between social and physical environmental elements and interpersonal characteristics of the residents. For example, while residents were observed to be up and moving around more during downtime, simultaneously, many also exhibited agitated behaviors and negative apparent affect. Thus, the unstructured and unsupportive nature of downtime many have caused more negative in the moment experiences for residents. In addition, many residents were observed dozing off during television time. None of the qualitative data revealed caregivers attending to the preferences of the residents during this activity situation such as playing a movie that the residents may know. Likewise, during games and joke and riddle time, residents were sedentary and infrequently encouraged to participate, or do an activity. Similar to findings from the study by Wood, Womack and Hooper (2009), meals and snacks were also associated with negative QoL indicators. Despite its social nature, residents

were seldom observed having conversations or demonstrating pleasure. What appeared to go unnoticed during this activity situation were the residents' food preferences, the lack of encouragement or initiation for social interaction from formal caregivers, and the unpredictable nature of dining room set-up, as explicated in field notes. Overall, the absence of occupational engagement, environmental barriers, and unnoticed preferences, needs and retained capacities of the residents during these activity situations may have contributed to the more frequently observed negative QoL indicators, and over time, may impose excess disability.

Occupationally Enlivening Activity Situations

Findings revealed that all the residents in this study could converse, maintain an engaged gaze, walk, participate in an activity, and show signs of pleasure. Three activity situations—music group, bus, and RM—appeared to enable these optimal QoL experiences and, for this reason, may be considered occupationally enlivening according to the LELQ Model. For instance, these positive experiences during the music group may have been due to tapping into the preferences of the residents by playing familiar and popular songs from their era, but also the caregivers encouraging the residents to dance and play instruments. Rather than exclusively focusing on a single mediating person factor such as playing a familiar song, it appears that the music group was efficient at satisfying occupational participation, pleasure, and movement through finding a person-environment match. In addition, the activity situation, bus ride, elicited several optimal dementia-specific QoL indicators including engaged gaze, movement, and pleasure. During this activity situation, caregivers helped the residents with their functional mobility to get on and off the bus for an outing. Findings revealed that all observations of bus outings were to Hearts and Horses, signifying that residents were given more time to view nature. *RM was the only activity situation in this study that was associated with all optimal QoL*

indicators, indicative of a good fit, or a match between the resident's adaptive behavior, affect and the environment. RM supported and promoted the residents to have conversation, maintain an engaged gaze, walk, participate in activities, and show no signs of agitation and exhibit signs of pleasure. Specifically, the residents were encouraged to interact with the physical and social environmental elements (i.e., people, horses and equipment), activities were graded to meet the needs of the residents, and activities tapped into the residents' past interests and retained capacities.

Riding in the Moment

Findings from this study suggests that RM may be an effective environmental intervention that positively presses toward and elicits favorable QoL experiences for institutionalized adults with dementia. Guided by my theoretical rationale, I offer two aspects of the dynamic, RM context, valuing the person and valuing nature, which may constitute an important basis for one residing in an institutional home to thrive and attain fulfillment.

Valuing the person. People may be unaware that individuals with dementia, even in the later stages of the disease, are able to remember things from their past, perform habitual or overlearned patterns of behavior, and appreciate pleasurable sensory stimuli (Zgola, 1999). A number of studies (Dobbs et al., 2005; Jenkins, Felce, Lunt, & Powell, 1977; Perkins et al., 1997) have highlighted the provision of meaningful activity for older adults with dementia residing in institutionalized settings to acknowledge these retained capacities.

Recognize past memories. One hallmark characteristic of dementia is memory loss. Initially, people experience a decline in short-term memories while long-term memories are generally long lasting. Because this study intentionally selected residents with an interest in horses, it was not surprising to find that they demonstrated high levels of QoL indicators during

RM. This may be a reflection of the integration of the residents' personal experiences of meaning and interconnections to past valued occupations.

Hasselkus (1997) suggested that occupation contributes to and empowers one's identity or 'being.' As originally postulated by Wilcock (1999) "Being is about being true to ourselves, to our nature, to our essence, and to what is distinctive about us" (p. 5). One field note (8.26.16) illuminated an occupation (i.e., riding a horse) that helped reinforce the identity of one of the residents. Henry knew exactly what he was doing on that horse; he had his own way of getting on and off, steering and communicating with horse. He just looked like a natural and was full of smiles. For Henry, the opportunity to ride a horse (i.e., cherished occupation) facilitated an enlivening environmental press that contributed to his sense of personhood, or feelings of confidence and competence. Many studies support and emphasize that meaningful activity should pertain to one's life roles and interests as a means for fostering fulfillment and emotional well-being and furthermore, preventing excess disability (Albert et al., 1996; Borell, Gustavsson, Sandman, & Kielhofner, 1994; Chung, 2004). Indeed, the study conducted by Chung (2004) found a significant association between well-being and participation in activities that were considered, from the participants in that study, as enjoyable.

Albert and colleagues (1996) highlighted the importance of recognizing the variability in activity and affect; that is, not all activities are going to 'tap' into the same past memories for every person. Therefore, it is important to gather and acknowledge the individuality of program participants (Zgola, 1999). One key informant, T.L. shared, "although our staff involved in RM collect some resident information, I think we can do a better job at getting to know the residents better before starting the program." Information that programs like RM would benefit from

collecting include past memories that contain habitual skills, or the automatic patterns of movement that developed from the repetition of activities over time.

Recognize habitual skills. Habitual skills refer to things that we, as occupational beings, seem to never forget, including people with dementia. These skills, when needed, are retrieved from our procedural memory to execute necessary actions and involve both cognitive and motor skills. Examples of habitual skills include tying shoes, riding a bike or perhaps even riding or grooming a horse. Unfortunately, people with dementia can experience disruptions in these automatic patterns due to changes in circumstance such as moving to a LTC facility. Perrin, May, and Anderson (2000) however, acknowledged that these abilities are still there for institutionalized people with dementia. RM provided an outlet for the use of the residents retained habitual skills through the process of grading, or increasing or decreasing the demands of a given task to meet the needs and abilities of the participants. For example, some residents required step-by-step directions for steering a horse around obstacles, others required hand over hand assistance with steering.

The grading of tasks involved in each of the three stations (i.e. bench time, grooming time, and riding time) that comprised RM helped foster a sense of fulfillment among the residents as evidenced by the positive findings that emerged from my analyses of both data sets (see Table 15). Indeed, the opportunities presented to residents in RM align with several guidelines, proposed by Zgola (1999), for choosing and presenting activities in a successful manner. These guidelines suggest that activities should 1) use old familiar patterns of movement, 2) have rhythmic component, and 3) consist of one repetitive step. Activities at each station fulfilled these suggested guidelines. For example, Dennis, whom had previously owned horses, conversed with volunteers and further, exhibited engagement, participation, and a sense of

pleasure while grooming a horse. Given his past involvement with horses, the act of grooming most likely pulled from his previous routine with his own horses. One volunteer handed a soft brush to Dennis and he immediately began to brush down the entire body of the horse, including not only his body but also face (Field Note 9.2.16). Certainly, the volunteer handing the brush prompted an automatic response of Dennis and furthermore, the task of brushing can be described as having a strong, rhythmic component and repetitiveness.

A number of studies have richly described the movement of the horse comparatively with the aforementioned activity guidelines (Beinotti, Correia, Christofolletti, & Borges, 2010; Choi, Kim, Lee, & Kim, 2013). That is, when riding a horse, people experience a three-dimensional movement as the horse walks which stimulates a similar and familiar pelvic movement of human walking. Furthermore, Shurtleff and Engsborg (2010) described the movement of the horse as rhythmic and repetitive, “Horses average 55 strides per minute in a medium walk and each stride cycle occurs in a rhythmic pattern” (p. 151). Altogether, these examples indicate that various activities offered in RM evoke retained abilities such as the habitual skills from the participants’ life experiences with horses.

Recognize sensory pleasures. People with dementia often experience a decline in perceptual abilities, or the ability to interpret and process sensory information (Atchison & Durette, 2012). Letts et al. (2011) share that impairments in perceptual abilities may lead to functional dependence and thus, negatively influence behavior responses. Therefore, it is important to provide people with dementia appropriate sensory stimulation. Sensory stimulation challenges our brain to turn environmental stimulation into sensation; through our senses, we gather information about our surrounding environment (Schmid, 2009). Studies have shown that people with dementia who engaged in various sensory stimulation activities experienced an

increase in psychological well-being (Witucki & Twibell, 1997) and an increase in physical capacities such as better posture (Götell, Brown, & Ekman, 2003). In addition, research has emphasized the importance of linking sensory stimulation activities to the interests of the person to help build a connection to everyday life (Schmid, 2009).

This study specifically selected people who had experience with or an interest in horses. Therefore, RM may have served as an abundant source of positive multi-sensory stimulation. In comparison to the other activity situations, RM occurred in a natural environment and presented as an ‘enriched experience’ where activities appeared to stimulate more than one sense. Indeed, M.K shared examples of the richness afforded from the equine environment; these examples included the sight of the large animals; the voices of those involved in the program or the sounds produced by the horses; the smell of fresh air; and the feeling of the horse’s shape, texture, and temperature while riding. As expected, residents with dementia in this study demonstrated high levels of engagement, communication, and pleasure during the RM activity situation. Similarly, Dabelko-Schoeny et al. (2014) speculated that the participants positive engagement (i.e., time spent expressing pleasure or interest) during activities may have been due to the environmental enrichment of the equine context; they further acknowledge how this type of animal-assisted interaction is unique in that the horse cannot be simply be brought into an existing assisted living facility like a dog or other small animal. Perhaps the RM activity situation presented a way for the residents to explore pleasurable sensory experiences through connecting with the horse and nature in a manner that they had once enjoyed every day before moving to an institutionalized setting.

Valuing nature. For many people, connecting to nature contributes to our sense of QoL. This sense is robustly articulated through the biophilia hypothesis proposed by Wilson (1984). Defined, nature consists of the physical world including plants, animals, landscapes and other features of the earth (Dictionary.com, 2017). Wilson (1984) biophilia hypothesis asserted an inherent human need to affiliate with nature and also suggested that identity and satisfaction depend upon relations with the natural world. Further, Buber (1958), a German philosopher, declared, “In the beginning is relation” (p.11). He extrapolated that human being’s existence in the world is grounded in their relation to other human beings, to nature, and objects surrounding them. Findings from this study align with and further support four dimensions, from the biophilia hypothesis, of this dependence on nature for fulfilling a meaningful being: naturalistic, aesthetic, symbolic and humanistic.

Naturalistic need. A naturalistic inclination involves a curiosity, urge, and intimate experience with direct contact with nature (Keller & Wilson, 1993). This exploration has been cited as affording positive psychological benefits including relaxation, concentration, and enhanced life satisfaction (R. Kaplan & Kaplan, 1989; Tennessen & Cimprich, 1995). From the qualitative findings, it was apparent that many of residents with dementia experienced an affinity for horse interaction as observations detailed the residents initiating tasks associated with caring for the horses. Similarly, the direct contact with nature may have evoked a mental and physical appreciation associated with the heightened engagement and complex participation. This naturalistic tendency may perhaps be linked with a sense of ‘being away’ (S. Kaplan, 1995). Research studies have revealed that being outdoors, away from institutionalized and other urban type settings, has positively influenced affective states (Kaplan, 1995). Duggan, Blackman, Martyr, and Van Schaik (2008) exposed the connection between outdoor environments and

health for people with dementia. Specifically, they found that people in the early stage of dementia valued being outdoors for exercise, fresh air, and emotional well-being. Likewise, Rappe, Kivelä, and Rita (2006) shared the restorative effects of being in direct contact with nature for older adults with dementia residing in LTC; the more people were presented opportunities to be outdoors, the stronger the associations were with positive self-rated health. Unfortunately, as dementia progresses, people often experience neuropsychiatric behaviors, elevating their risk for safety concerns (Bossen, 2010). In turn, people with dementia are provided limited access outside of the institutional walls. In the present study, findings revealed necessary and effective precautions taken by the RM staff before and during the equine-assisted intervention to address safety considerations for the health and well-being of the residents.

Aesthetic need. Studies have described LTC facilities as static and lifeless (Hinman & Heyl, 2001; Tavormina, 1999). Further, anecdotal evidence has suggested that many older adults fear that they will experience “suffering in sterile institutions” (Tavormina, 1999, p. 158). Although attention has been paid to the need to improve elements of the physical environment of residential facilities over the past 50 years, the vast majority of facilities are still considered displeasing to many (Chi Partners, 2012). The negative connotation of LTC facilities strongly suggests the need for aesthetically pleasing opportunities. Notably, Maller, Townsend, Pryor, Brown, and St Leger (2005) discussed the healing effects of viewing natural environments including enhancing pleasure and interest, sustained attention, as well as reducing problem behaviors such as anger and agitation.

One dimension of the biophilia hypothesis recognizes the powerful appeal of ‘the physical beauty of nature’ (Keller & Wilson, 1993). Aesthetics consist of wide-ranging experiences from mountain landscapes to the well-muscled and broad chested Quarter Horse. It

is perhaps not surprising, then, that residents in the present study were more likely to demonstrate an engaged gaze in RM, in particular an engaged gaze with not only those involved in activities in the program but with the horse as well. Keller and Wilson described how living organisms often present as the central focus of people's aesthetic experience of nature; in particular, this aesthetic response is usually directed at larger and captivating species. Several key informants shared that while horses can present as large and intimidating creatures, they noticed a calming effect between both the resident and horse. Kaplan and Kaplan (1989) affiliated this aesthetic reaction with human behavior, "Underlying such reactions is an assessment of the environment in terms of its compatibility with human needs and purposes" (p. 10). During RM, residents did not exhibit any problematic behavior. Indeed, all residents demonstrated either signs of interest or pleasure, indicating their desire and, possibly, preference for natural beauty and harmony in the moment.

Symbolic need. The degenerative nature of dementia results in a decline in language and communication abilities. Specific language challenges that emerge pertain to expressive language (i.e., the ability to make oneself understood) and receptive language (i.e., the ability to understand). In turn, people have difficulty with communication, or the exchanging of information. Shepard (1978) claimed that people use nature as a mode or channel for supporting communication and thought. He further emphasized the significance of animals, "Human intelligence is bound to the presence of animals.... They are the means by which cognition takes its first shape and they are the instruments for imagining abstract ideas and qualities" (p. 249). Indeed, Moretti et al. (2010) reflected on the role of animals as 'emotional mediators' and 'catalysts' for positive interactions. One pilot study discovered that people with dementia

experienced a significant increase in social interaction during an animal-assisted therapy intervention, specifically with dogs (Richeson, 2003).

Findings from this study strongly suggest that environmental presses created by the social stimuli of specific activity situations may have had positive and negative influences on QoL in the moment. Detailed observations of daily time use for residents indicated that RM bestowed encouraging occurrences for communication, perhaps facilitated by the presence of the horses. For instance, Gertrude's profile illuminated that she had difficulty expressing herself and several key informants shared that she was often very quiet during in-facility activities. Despite these descriptions of Gertrude, during RM, she was able to express her ideas clearly and often was observed talking to the horses. Studies have described that the exchange of information, or communication, can differ based on who we surround ourselves with, what events or activities are occurring around us, and our attitudes and beliefs (Zgola, 1999). Furthermore, Fisher (2009) shared that how a person responds to a given situation is the result of the transaction between the person and their environment; additionally, she shared that it is necessary to consider more than just the features of the social environments but also acknowledge the person's motivational characteristics and roles. Conceivably, the residents in this study were more likely to express themselves given their propensity for and the metaphorical relevance of the RM activity situation.

Humanistic need. The humanistic perspective posits that because people have a strong affection and deep emotional attachment for natural elements they, therefore, should be able to experience natural conditions (Keller & Wilson, 1993). Like the aesthetic value of the biophilia hypothesis, human feelings are often readily directed toward animals.

The role of animals has dramatically changed over recent decades. Many animals, once used strictly for work purposes such as agricultural development, have become increasingly significant in the lives of people (Kaushik, 1999). Today, the meaning and significance people place with animals is often shaped by their role of pet owner. Indeed, the term 'pet' is understood and represents animals that are sought out and kept for pleasure (Grier, 2010). More than 70% of people have at least one pet (American Pet Products Association, 2012). Studies have shown that pets provide people a sense of 'companionship' and view their pets as part of the family. For older adults, many maintain and cherish their role of pet owner to fulfill caring and nurturing tendencies, provide a routine, encourage exercise, facilitate social interaction and promote a regular outdoor activity (Moeller, 2010).

Unfortunately, many LTC facilities require that residents relinquish this, perhaps, previously beloved life role. As a result, people with dementia may experience loneliness, depression, and boredom, adversely affecting their QoL. Referring back to the occupational profiles of each resident, all had an interest or past experience with animals. However, none of the residents at Seven Lakes owned an animal, which might possibly be related to, at least in some small part, to the lower activity levels and decreased affect during in-facility activity situations in comparison to RM. During RM, residents were not only observed completing more than one task at a time such as grooming and singing to a horse, they were also frequently observed to have a pleasurable affect. Key informants hypothesized that the interaction with the horse appeared to restore a sense of relaxation and purposeful doing. Increases of psychosocial capacities in people with dementia is typically associated with more meaningful and purposeful situations (Chung, 2004; Kuhn, Fulton, & Edelman, 2004). Zgola (1999) accentuated that for activities to be meaningful there must be a purpose. One explanation for the observed increased

in positive affect and increased complex participation is that the activities in RM may simply have been fun and felt good. Many studies investigating the influence of EAIs have acknowledged that their positive findings could be due to the activities being enjoyable (Elliott, Funderburk, & Holland, 2008; Frank, McCloskey, & Dole, 2011). In addition, the horse-human interaction has been described as a powerful motivator for positive change (Ajzenman, Standeven, & Shurtleff, 2013). Thus, one can postulate that the positive findings from this study may correspond with the humanistic experience of nature.

Strengths and Limitations of the Study

This exploratory mixed methods case study approach had both strengths and limitations. Critics of quantitative research have claimed that quantitative methods do not account for the context in which the study takes place or for the voices of participants involved in the study. On the other hand, scholars may argue that qualitative research can be seen as deficient because of personal interpretations constructed by the researcher. Therefore, the combination of both quantitative and qualitative methods provided more evidence for understanding the influence of RM on the QoL of the institutionalized adults with dementia. However, this choice in design presented several limitations. I had limited experience in quantitative research and I am by no means an expert in qualitative research. With that said, the mixed method design was time consuming and I was uncertain how to effectively interpret and ‘converge’ the findings from both strands to answer research question three. In addition, the findings of an exploratory case study are not generalizable; that is, the activity situation comparisons and suggested influences are ambiguous to other people with dementia in LTC facilities.

For the quantitative strand, I selected residents using a theoretical and convenience sampling approach. Using this approach, I was able to hand pick residents that represented both

genders, a range of dementia stages (i.e. mild, moderate, late moderate), and those with an interest or experience with horses. However, a potential limitation of this sampling approach is that it lends itself to a biased sample. The use of an instantaneous sampling approach provided a data set that was more manageable as it comprised a consistent amount of time spent observing residents and their demonstrated behavior. Researchers recorded resident behaviors at a predetermined ten-minute time interval for a four-hour period. Nevertheless, researchers may have missed some resident behaviors during routine activity situations using this sampling method. In addition, observational research seeks to capture information, as they naturally exist, rather than through manipulation of variables as in experiments. Therefore, it was impossible to control for confounding variables that may have influenced the residents' behaviors.

For the qualitative strand, I used a purposive sampling method; here, I selected key informants based on their willingness to share their experiences with the residents involved in RM. Similar to the purposive sampling approach, the major limitation of this method is the potential bias of self-selection. A significant strength of the qualitative strand was that the findings complemented the quantitative data in that they provided detailed information to help explain the influence of RM on the QoL of the residents. Based on the nature of basic qualitative description, this study sought to uncover the key informants' experiences with RM as well as the meaning they ascribe to those experiences through semi-structured interviews. My presence during data gathering may have influenced the key informants' responses. In addition, the interview data proved to be challenging. At times, it was difficult to identify and connect perspectives of the key informants with the established sub-codes. For example, when coding dementia care musts, I noticed many similarities between recognizing the person and compassion sub-codes. Specifically, key informant examples described attending to the residents' needs and

preferences as a way to provide comfort and support. Nonetheless, the definitions I developed for the sub-codes helped me remain consistent when applying codes in NVivo.

When reviewing the position and movement data for RM, I found a significant difference between the categories of Lying/sitting and Standing/walking for RM. In particular, there were more observations of residents being 'sedentary' or sitting, rather than active, up and moving. In other words, it appeared that residents were not as active as they could have been during RM because many observations were of the residents seated on horseback. Reflecting back on the coding development process, I did not take into consideration the physical activity requirements to ride a horse. Specifically, the unique three dimensional, rhythmic movement of the horse stimulates neurosensory and neuromuscular responses that may help to improve a person's muscle tone, balance, posture, and mobility (All, Loving, & Crane, 1999; Homnick, Henning, Swain, & Homnick, 2013). However, when I modified the ACT tool, I did not consider the intensity of riding the horse in comparison to the captured positions and movements (i.e. lying/sitting, standing/walking). As a result, researchers were limited by choice and coded riding a horse as sitting. The qualitative findings provide evidence that RM involved more complex and intense tasks such as mounting and dismounting a horse. These conflicting findings have made me more cognizant of the importance of understanding the physical characteristics associated with riding a horse, as several studies have shown that physical activity energy expenditure has been associated with improved mobility and reduced mortality rates in older adults (Manini et al., 2006).

Evidence from this study demonstrates the positive impact of *being in* enriched environments on QoL for institutionalized adults with dementia. While I collected moments spent in nature (i.e., RM), I wish I had also collected detailed information pertaining to *viewing*

natural scenes availed by the activity situation of bus. I believe that institutionalized people with dementia are extraordinarily disengaged from natural environments and have few opportunities presented to them to spend time with outdoor environmental stimuli such as animals and plants. I did not modify the ACT to capture precise details of specific interactions during bus rides and none of my interview questions referred to that particular activity situation. It would have been beneficial to hear the key informants' perspectives on viewing natural scenes. This research study has augmented my awareness for affording institutionalized people opportunities to make natural connections, both passive through viewing opportunities but active as well, as a way to promote health and well-being.

It was not until after I had collected data and completed my analysis that I began to ask, what about the horse? I asked few questions about the horses involved in RM during the interviews. In addition, my review of the field notes demonstrated rudimentary horse characteristics. This awareness generated an unpleasant feeling for me. While research studies have shown countless benefits humans can experience with horses, their [horses] integral role, including their health and welfare, in programs such as RM are often missed. It is important that research studies collaborating with community-based programs (i.e., therapeutic riding center) describe not only the selection process, but also the training and managing of their horses to preserve their good health and welfare. After all, the horses are hardworking animals with special personality traits that are invaluable for programs like RM to operate. While this study boasts many strengths that advances dementia care research and the science of equine-assisted interventions, the presented limitations must be considered.

Relationship of Study to Occupation and Rehabilitation Sciences

My doctoral training provided an integrated perspective of occupational science and rehabilitation science, each of which enriched my understanding of the complex transactions that occur among performance capacities, contextual factors, and participation in everyday occupations (Colorado State University [CSU] Department of Occupational Therapy [OT], 2017). Occupational Science exposes how purpose in life along with health and well-being are influenced by participation in everyday occupations and contexts. In contrast, rehabilitation science explores the interactions between body functions and structure, environmental factors, and the ability of people to carry out tasks with varying impairments.

My doctoral work, I believe, strongly aligns with occupational science. This exploratory, mixed methods case study foregrounds attention to person-environment transactions in the context of activity situations. My theoretical framework and further, the LELQ Model, provided a basis for exploring the residents and their environment as part of each other, rather than separate entities (Dickie et al., 2006). That is, I observed residents in their daily activity situations, with a primary focus on in the moment, active relations between the resident and the activity situation. In relation to rehabilitation science, my study vaguely examined relationships of residents' performance capacities (i.e., participation, conversation, position and movement and gaze) and environmental factors. For example, collecting resident observations, I was able to discern which activity situations encouraged residents to 'do' a task and the complexity of the task. However, I did not look at the task level to describe how the resident's impairments (i.e., cognition) influenced their involvement in specific activity situations. Integration of these elements and knowledge from both sciences contribute to unique perspectives that can guide

interdisciplinary research and practice that advances the science and evidenced-based knowledge of equine-assisted interventions and dementia care.

Implications for Future Research

This exploratory mixed methods case study did not establish cause and effect relationships between the routine activity situations and the indicators of QoL; however, this study adds evidence to the sparse literature on animal-assisted interventions (AAIs) for institutionalized adults with dementia. Owing to the early scientific development and complex nature of AAIs, in particular for the dementia population (Wood, Fields, Rose, & McLure, 2017), findings from this study suggest that future research should focus on expanding, evaluating, and implementing the EAI, RM.

Craig et al. (2008) defined complex interventions as comprising several interactive elements including variability in active ingredients and outcomes. As really a first place to start when establishing the scientific bases of complex interventions, these authors suggest that researchers identify and develop theory. Therefore, developing a logic model using a theory approach is ideal (WK Kellogg Foundation, 2004). Logic models provide an organized, visual representation for understanding the association among the resources needed for the program to function, the planned activities, and the changes or results you hope participants gain (WK Kellogg Foundation, 2004). Not only did the findings from this study provide the “big picture” thoughts and ideas about RM, but they also detailed the components of the EAI and identified some guiding assumptions, as suggested by the qualitative topics of dementia care musts and why things in RM worked. In effect, these findings can help shape and assemble the logic model. A theory approach logic model connects theoretical ideas together to help clarify these underlying RM assumptions; ultimately, describing not only what residents with dementia

involved in RM can expect to achieve but also how. I anticipate that this RM logic model would yield advances in programming, learning opportunities, documentation of outcomes, and shared knowledge about program principles (Kellogg Foundation, 2004). In addition, a logic model for RM may guide program development at other therapeutic riding facilities and offer administrators of institutionalized facilities a tangible road map as a way to connect and market the established RM community-based activity program.

Despite the emphasis on activity programming for institutionalized individuals with dementia over the last 40 years (Chung, 2004), my review of dementia care literature revealed that daily experiences often continue to lack meaningful participation in activities relevant to one's life roles and interests. Given the positive findings of the community-based RM, subsequent studies must examine other innovative therapeutic practices that occur outside institutional walls and in natural environments. Indeed, there is much evidence for the biophilia hypothesis that suggests the innate need for humans to connect with nature and other life forms (Wilson, 1984). Promoting opportunities for one to be with one's 'lifeworld', or places with special meaning, may enable a sense of well-being (Cutchin, Chang, & Owen, 2005; Hasselkus, 2011).

Implications for Practice

Residents of institutional homes often experience environmental barriers, cultural pessimism, and lack of person-centered care (Kitwood, 1997). Over time, these unfavorable elements may contribute to a degraded QoL and further, stimulate excess disability (Rogers et al., 2000). The routine activity situations that characterized the residents' daily life during this study may be key in understanding contributing factors of QoL. An important benefit of living in institutionalized settings such as a LTC setting is being able to participate in a variety of activity

situations. Similar to findings from Wood, Harris, Snider, and Patchel (2005), the variations in environmental presses generated from the observed activity situations in this study specify further that, “simply surrounding residents with activities insure neither their meaningful time use nor their remaining functional capacities will be tapped or optimally maintained” (p. 115). Indeed, residents were observed to be unengaged, non-communicative, and passive during meals and downtimes, the two most frequently observed activity situations. In effect, as previously suggested by Wood et al. (2005), caregivers may have simply viewed the function of these activity situations as a way to “safely place residents and monitor” their behavior, rather than meaningfully engage them in occupations. Ultimately, when the in-facility activity situations are viewed altogether, the residents’ patterns of contextual interaction, time use and apparent affect express marginal QoL improvements. Therefore, this study raises questions about organizing and giving shape to activity situations outside the institutional walls that attend to physical, social and interpersonal determinants of dementia-specific QoL.

Unlike all the other activity situations, RM, one of the few activity situations that occurred outside the LTC facility, elicited all optimal QoL indicators. Findings underscore the ability of RM to provide activities that have potential for occupational engagement, performance and emotional vitality. Namely, adequate support, both physical and social, and attention to individual residents was routinely observed; these strategies align with Kitwood’s concept of being person-centered (Kitwood, 1997) and Mezey’s concept of abilities focused care (Mezey, 2000), two approaches highly valued in dementia care. Physical characteristics of the equine environment (i.e. grooming equipment) prompted the residents to spend time occupationally engaged during RM. Additionally, a sufficient amount of staff and volunteers in RM offered the residents many opportunities for shared occupations with horses and other people during the EAI

that ‘tapped into’ their past interests and retained capacities. In essence, RM provided the necessary support and challenge for each resident to continue doing things that they found meaningful.

Researcher Revelations

Reflecting on my dissertation journey exposed several unexpected thoughts. I did not anticipate how emotional of a ride this journey would be. Although many of the residents were capable of doing many things, at times it was difficult to observe residents unengaged, bored, agitated, or even fearful. These instances immediately reminded me of my grandmother and the harsh reality she faced while institutionalized. She was not provided meaningful activities and her environment was everything but supportive. Studying the routine activity situations offered at Seven Lakes, notably, RM, has made me realize that institutionalized adults with dementia should have the same access to the resources and opportunities that they once had. While research and practice demonstrate that dementia care is taking steps in the right direction by promoting person-centered approaches, there still exists many occurrences of alienation, occupational deprivation, and marginalization. It was incredible to witness, firsthand, such a strong and feasible partnership between Seven Lakes and Hearts and Horses. It gives me hope that more of these community-based connections will emerge and alleviate adverse conditions faced by many adults with dementia in institutionalized settings.

I am a licensed and practicing occupational therapist. During the entire length of the study, I noticed that occupational therapy professionals were absent from RM and Seven Lakes. These health care professionals are uniquely trained to understand how everyday occupations and contexts influences overall health and well-being; moreover, occupational therapy services can be provided in both the equine and LTC environments. Hearts and Horses provides

hippotherapy services for a variety of population groups. Occupational therapists can become certified to provide hippotherapy, or the use of equine movement in conjunction with environmental affordances and other treatment strategies to facilitate clients' attainment of functional outcomes (American Hippotherapy Association, 2017). However, from the key informant interviews and field notes, occupational therapists were not involved in RM. In addition, LTC literature suggests the lack of direct services provided from occupational therapists (Perrin & May, 2000). This is alarming given the anticipated growth of people with dementia in the United States whom will require a variety of health related services to help enhance their QoL, including occupational therapy.

Occupational therapists can wear a variety of hats to help enhance the QoL of people with dementia residing in LTC facilities. These hats can include not only interventionist but consultant, educator, and advocate (Alvord, 2013). People with dementia may benefit from direct one-to-one occupational therapy assessment and intervention that provoke enlivening environmental presses and associated positive QoL experiences (Wood et al., 2016). In addition to the role of interventionist, occupational therapists may assume responsibilities of a consultant and "provide specific actionable recommendations that could involve staff, family, or other occupational therapists" (Alvord, 2013, p.44). For example, an occupational therapist could provide staff at Hearts and Horses recommendations related to environmental set-up to support optimal participation in RM. Similarly, occupational therapists can provide education to staff, families, and other disciplines about dementia and model strategies for working with this population group. Importantly, occupational therapists can act on behalf of institutionalized people with dementia and advocate changing the quality of care through creating and raising awareness for innovative activity situations such as RM.

Conclusion

In conclusion, the capacity to see not only the potential and need of the LTC resident with dementia but also environmental influences of activity situations is vital to understanding associated QoL experiences. Given the amount and quality of opportunities for occupational engagement, the physical and social environmental supports, and the optimism exhibited at Hearts and Horses, RM may be an environmental intervention that give rise to enlivening environmental presses toward more meaningful time use and positive emotional expressions for residents in the moment with their QoL optimized.

This study takes a step into understanding the possible power of RM, an activity situation that brought residents in direct contact with nature, on enhancing QoL. More research is needed on expanding, evaluating, and implementing EAIs for institutionalized adults with dementia and the possible development of a logic model, further organizing and giving shape to the activity situation, RM. Specific to the interrelationships among environmental influences, residents with dementia would benefit from research contrasting and comparing the environmental presses of other therapeutic practices that occur outside institutional walls and in natural environments.

Ultimately, with this new knowledge and focus on activity situations and associated QoL, perhaps the final years of my grandmother's life would have looked a little different. Instead of sitting isolated in her bedroom with little interest or motivation to participate in activities, a formal caregiver would have looked up my grandmother's occupational profile. Seeing that she loved animals, the caregiver would have invited and assisted my grandmother to join in on a reminiscence group with other residents about pets. Or conceivably better yet, the caregiver would have learned that she had once lived on a farm and accordingly, recommended that my grandmother attend an EAI at a nearby therapeutic horseback riding center with a program

similar to RM. The environmental elements of these positive presses would have interacted in such a way that my grandmother's capacities and will to act would have been largely supported, enabling her to thrive and attain individual fulfillment.

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APPENDIX A: QUANTITATIVE STRAND CODING GUIDE

Guidelines:

- 1) *Be careful about making assumptions during coding; if you cannot see it-do not code it!*
- 2) *When observing a participant, code their highest level of function during that observation.*
- 3) *Activity situations codes represent what the facility has organized, not necessarily what the resident is doing!*
- 4) *If organized activity situation is over refer to downtime as default.*
- 5) *Interval timing- Observe each participant for about 45 seconds and then enter in highest level of function of participant for that moment then transition to next participant observation.*
- 6) *Time use-participation in activity sub-domain code represents the person 'doing' that is occupational in nature; activity has a purpose with a beginning and an end.*
- 7) **Bold**=*When coding in pocket observer, researcher will be prompted to select a modifier from a larger group of coding options.*

Activity in Context in Time Coding Domains

1) AS (Activity Situations)

- a. Activity groups: Organized activity at the long-term care (LTC) or outing with LTC that is not Riding in the moment (RM)
 - i. Animal therapy
 - ii. Cooking
 - iii. Craft
 - iv. Exercise
 - v. Food socials
 - vi. Games
 - vii. Gardening
 - viii. Joke/Riddle Time
 - ix. Movie
 - x. Music
 - xi. News/history
 - xii. Outing
 - xiii. Reminiscence
 - xiv. Spiritual
 - xv. Therapy
 - xvi. Other
 - b. BADLs: Any self-care related activity such as grooming or dressing
 - c. Bus: Time when resident is approaching bus, on bus, or getting off bus
 - d. Downtime: Default; any transition time between activities; time spent with family/visitors
 - e. Meals: Breakfast, lunch, dinner, and snacks that are not part of activity group
 - f. RM: Organized riding in the moment session; time in the arena or on outdoor trail
 - g. Television: Situated in area where television is on
 - h. Missing observation
- 2) Time use (TU)-Gaze

- a. **Engaged gaze:** Evidence of attention to something in environment
 - i. Single (1 person, animal, or nonsocial)
 - ii. No single
 - iii. Family
 - iv. HH staff
 - v. HH volunteer
 - vi. Horse
 - vii. LTC staff: any full/part time employees as well as any contracted visitors with name badges (i.e.- contracted nurses/therapists)
 - viii. LTC volunteer
 - ix. Nonsocial
 - x. Resident
 - xi. Researcher
 - 1. Multiple
 - 2. No multiple
 - 3. Horse-person
 - 4. Person-person
 - 5. Person-nonsocial: Select this code when observation time consists of person socially engaging for a period of time and then also nonsocially engages for a period of time
- b. Eyes closed: Dozing, sleeping; no attention to something in environment
- c. Unengaged gaze: No evidence of attention to something in environment; eyes can be open
- d. Missing observation
- 3) TU-PM (Position and movement)
 - a. Lying/reclining: Feet must be off ground
 - b. Sit
 - c. Stand
 - d. Walk: Evidence of walking with/without AD or self-propel with w/c
 - e. Missing observation
- 4) TU-Conversation
 - a. No participation in conversation
 - b. Participation in conversation: Any type of conversation; can be nonsensical- word salad; must be social in nature-cannot be just mumbling to self
 - c. Missing observation
- 5) TU-Participation
 - a. No participation activity:
 - b. Participation activity: Any type of activity that the person is doing (FYI, waving and clapping is not considered occupational ‘doing’)
 - i. Single
 - ii. No single
 - iii. Care for doll
 - iv. Clean
 - v. Dance
 - vi. Dress: includes helmet for RM
 - vii. Eat/drink

- viii. Food prep
- ix. Groom horse
- x. Groom
- xi. Groom animal
- xii. Pet animal
- xiii. Play game
- xiv. Play instrument
- xv. Read
- xvi. Ride: any time mounting/dismounting or time spent on horse
- xvii. Sing
- xviii. Other
 - 1. Multiple
 - 2. No multiple
 - 3. Read and eat
 - 4. Ride and pet animal
 - 5. Ride and play game
 - 6. Sing and dance
 - 7. Other/other
 - 8. Missing observation

6) TU-Distress

- a. No distress
- b. Agitation: Restlessness, pacing, repetitious sentences, requests for attention, complaining, negativism, and cursing
- c. Missing observation

7) Quality of Life-AA (apparent affect)

- a. No A.A: No movement of eyes, face, or body
- b. Anger: Clenched teeth, grimace, shout, yell, curse, berate, push, physical aggression or implied aggression such as fist shaking, pursed lips, eyes narrowed, knit brow
- c. Anxiety/fear: Furrowed brow, motoric restlessness, repeated or agitated motion, facial expression of fear or worry, tremor, tight facial muscles, calls repetitively, hand wringing, legs jiggling, eyes wide,
- d. Interest: Eyes follow object, intent fixation on object or person, visual scanning, facial, motoric, or verbal feedback to other, eye contact maintained, body or vocal response to music, turn body or move toward person or object
- e. Pleasure: Smile, laugh, stroking, touching with approach manner, nodding, singing, arm or hand outreach, open-arm gesture, clapping; signs of warmth/affection
- f. Sad/dep (Depression): Cry, tears, moan, sigh, mouth turned down at corners, eyes/head turned down and face expressionless, wiping eyes
- g. Missing observation

APPENDIX B: INTERVIEW GUIDE

Riding in the Moment: An Exploratory Mixed Methods Case Study of Activity Situations and Quality of Life of Institutionalized Adults with Dementia

Guiding Questions for Key Informant Interviews: Seven Lakes

Purpose: To investigate the influence of routine activity situations, in particular an equine-assisted intervention called Riding in the Moment, with quality of life for adults with dementia residing in an institutional home.

Location: TBD

Timeframe: ~60 minutes

Introduction (5 MIN MAX)

1) Thank you!:

Thank you for agreeing to be a part of our study. We appreciate your time and look forward to your contribution. During this interview, if you have any questions or need clarification on anything, please do not hesitate to stop me and ask. Before I start the interview, there are just a few items I want to quickly go over.

2) Overview of Study:

In this interview, we are interested in understanding the daily lives of institutionalized adults with dementia involved in an equine program and its impact on quality of life.

3) Logistics of Interview:

This interview should last approximately 60 minutes. Your answers will be confidential and will only be shared with other members of the research team. You may end the interview at any point, and you are not required to answer any question you do not want to. I have a number of questions to ask you, so I may summarize your answer in order to clarify your point. Also, due to time constraints, we may need to move along in the interview in order to ensure that I address all questions. However, please feel free to let me know if you do not want to move on and have more to say because your answers are valuable to our study.

4) Overview of Interview Questions:

Before we begin, I want to explain the general structure of the interview. There are 3 main parts. First, I will ask questions about your professional background. Then I will want you to richly describe the residents. Lastly, I will ask for you to share your feelings about the resident's involvement with the Riding in the Moment program. I will ask you clarifying questions throughout the interview. We'll conclude with two brief wrap-up questions.

Background Information (10 MIN MAX)

5) What is your involvement with Seven Lakes Memory Care?

6) What is your role in this work? That is, do you work in direct one-on-one interventions with clients, in program development, management?

- 7) How many years of experience do you have working with people with dementia?
- 8) How did you discover you wanted to work with people with dementia, or how did you come to working with people with dementia?

Daily Lives of the Participants (20 MIN MAX)

The next section of the interview focuses on the daily lives of the residents.

- 9) Tell me about a typical day for each of the residents; what do they need, want, or are required to do?
 - a. Best/worst time of day
 - b. Special rituals or practices they engage in
 - c. Socialization

Riding in the Moment Story Questions (10-20 MIN MAX)

Thank you, the next session of the interview pertains to your perspectives on the resident's involvement in the Riding in the Moment program.

- 10) How do you believe the Riding in the Moment program impacts the resident's quality of life?
 - a. What do you believe the Riding in the Moment program provides that other activities offered at Seven Lakes might not?
- 11) What resident outcomes, positive or negative, have you observed from the Riding in the Moment program?
- 12) What does best dementia care practice mean to you?

Potential Probes:

- Person-centered care
- Activity situations – “just-right fit”
- Time use – occupational engagement/disengagement
- Ability to function
- Apparent affect

Wrap-up (5 MIN MAX)

- 13) Is there anything else we haven't covered that you feel is important to tell us about the residents or your perspectives of the Riding in the Moment program?

Conclusion (1-2 MIN MAX)

Another Thank You!: We appreciate you taking the time to answer these questions.

*Send follow-up thank you email

Riding in the Moment: An Exploratory Mixed Methods Case Study of Activity Situations and Quality of Life of Institutionalized Adults with Dementia

Guiding Questions for Key Informant Interviews: Hearts and Horses

Purpose: To investigate the influence of routine activity situations, in particular an equine-assisted intervention called Riding in the Moment, with quality of life for adults with dementia residing in an institutional home.

Location: TBD

Timeframe: ~60 minutes

Introduction (10 MIN MAX)

1) Thank you!:

Thank you for agreeing to be a part of our study. We appreciate your time and look forward to your contribution. During this interview, if you have any questions or need clarification on anything, please do not hesitate to stop me and ask. Before I start the interview, there are just a few items I want to quickly go over.

2) Overview of Study:

In this interview, we are interested in understanding how you perceive the Riding in the Moment program and its impact on quality of life for people with dementia at Seven Lakes.

3) Logistics of Interview:

This interview should last approximately 60 minutes. Your answers will be confidential and will only be shared with other members of the research team. You may end the interview at any point, and you are not required to answer any question you do not want to. I have a number of questions to ask you, so I may summarize your answer in order to clarify your point. Also, due to time constraints, we may need to move along in the interview in order to ensure that I address all questions. However, please feel free to let me know if you do not want to move on and have more to say because your answers are valuable to our study.

4) Overview of Interview Questions:

Before we begin, I want to explain the general structure of the interview. There are 3 main parts. First, I will ask questions about your professional background. Then I will want you to describe various characteristics of the program. Lastly, I will ask for you to share a couple observations of participant experiences. I will ask you clarifying questions throughout the interview. We'll conclude with two brief wrap-up questions.

Background Information (5 MIN MAX)

5) What is your involvement with Riding in the Moment?

6) What is your role in this work? That is, do you work in direct one-on-one interventions with clients, in program development, management?

7) How many years of experience do you have working with people with dementia?

Nature of Program Questions (10 MIN MAX)

Thank you, the next session of the interview pertains to your perspectives on the Riding in the Moment program for people with dementia.

- 8) How do you believe the Riding in the Moment program impacts the participant's quality of life?
 - a. What do you believe the Riding in the Moment program provides that other activities offered at LTC facilities might not?
- 9) What participant outcomes, positive or negative, have you observed from the Riding in the Moment program?
- 10) Reflecting back on your first involvement with the program, has your understanding of best dementia care practices changed in any way?

Story Questions (10-20 MIN MAX)

Okay, now we are moving into the story part of the interview.

- 11) Tell us a story about a time in which you observed a participant elicit any positive experience when working with the horse or another person in the program.

Potential probe: ask clarifying questions about story, possibly related to ACT domains:

Time use – occupational engagement/disengagement

Ability to function

Apparent affect

- 12) Tell us a story about time in which you observed a participant elicit any negative experience when working with the horse or another person in the program.

Wrap-up (5 MIN MAX)

- 13) Is there anything else we haven't covered that you feel is important to tell us about your experience with the Riding in the Moment program and people who have dementia?

Conclusion (1-2 MIN MAX)

Another Thank You!: We appreciate you taking the time to answer these questions.

*Send follow-up thank you email

APPENDIX C: FIELD NOTES GUIDE

From USC Libraries Research Guides,
<http://libguides.usc.edu/c.php?g=235034&p=1561924>

Characteristics of field notes:

- 1) Be accurate
- 2) Be organized
- 3) Be descriptive
- 4) Focus on research problem
- 5) Record insights and thoughts

Guidelines for Descriptive Content:

- 1) Describe the physical setting.
- 2) Describe the social environment and the way in which participants interacted within the setting. This may include patterns of interactions, frequency of interactions, direction of communication patterns [including non-verbal communication], and patterns of specific behavioral events, such as, conflicts, decision-making, or collaboration.
- 3) Describe the participants and their roles in the setting.
- 4) Describe, as best you can, the meaning of what was observed from the perspectives of the participants.
- 5) Record exact quotes or close approximations of comments that relate directly to the purpose of the study.
- 6) Describe any impact you might have had on the situation you observed.

Guidelines for Reflective Content:

- 1) Note ideas, impressions, thoughts, and/or any criticisms you have about what you observed.
- 2) Include any unanswered questions or concerns that have arisen from analyzing the observation data.
- 3) Clarify points and/or correct mistakes and misunderstandings in other parts of field notes.
- 4) Include insights about what you have observed and speculate as to why you believe specific phenomenon occurred.
- 5) Record any thoughts that you may have regarding any future observations.

APPENDIX D: MACRO ANALYSIS CROSS TABULATION RESULTS

	Time use and Apparent Affect Sub-domains																			
Activity Situations	Engaged gaze	Eyes closed	Unengaged gaze	Lying	Sitting	Stand	Walk	Conversation	No Conversation	Agitation	No agitation	Participation	No participation	No apparent affect	Sadness/depression	Anger	Anxiety	Interest	Pleasure	Total
Bus	40	1	0	0	40	0	6	18	23	0	41	1	45	1	0	0	0	24	16	256
Downtime	152	11	4	2	113	14	39	56	112	13	154	28	139	12	2	0	14	89	50	1004
Games	6	0	0	0	6	0	0	3	3	0	6	3	3	0	0	0	0	6	0	36
Joke/Riddle	22	0	0	0	22	0	0	5	17	0	22	8	14	0	0	0	0	18	4	132
Meals	187	5	1	0	189	2	2	33	160	2	191	117	77	2	2	5	9	141	35	1160
Music Group	88	5	0	0	89	1	3	20	73	0	93	40	53	4	2	1	2	43	41	558
RM	38	0	0	0	29	2	7	30	8	0	38	13	25	0	0	0	0	15	23	228
Television	23	4	0	0	27	0	0	5	22	0	27	2	25	4	0	0	0	19	4	162
Therapy	3	0	0	0	1	1	1	2	1	0	3	1	2	0	0	0	0	3	0	18
Total	559	26	5	2	516	20	58	213	419	15	575	213	384	23	6	6	25	358	173	3555

APPENDIX E: QUALITATIVE STRAND CODING GUIDE

Empirical Codes	Sub-codes	Definitions
Outcomes	Functional Ability	Comments related to the participants' ability to perform or do activities.
	Well-being	Comments related to the participants' state of being comfortable, healthy, or happy.
	Social Relationships	Comments related to a relation between living organisms; characteristic of two entities being together.
Why Things Are Working	Horse and Nature Connection	Comments related to explaining behavior; represents the natural environment influence on outcomes.
	Social Participation	Comments related to explaining behavior; represents the social environment influence on outcomes.
	Holistic Experience	Comments related to explaining behavior; represents the person-context interface.
Dementia Care Musts	Recognize the Person	Comments that capture the participants' occupational history and current abilities.
	Communication	Comments that describe components for successful communication (both nonverbal and verbal).
	Compassion	Comments related to providing comfort and being supportive.
	Safety	Comments related to paying attention to the participants' skills and abilities as well as any environmental problems that could influence daily experiences.

RM Logistics	History	Details about the Hearts and Horses organization; when the program was created.
	Facility	Details about the built environment in which RM occurs.
	Personnel and Training	Comments related to the people involved in RM.
	Our Partners: Horses	Comments related to the horses involved in RM.
	Duration and Cost	Comments related to frequency and amount of RM sessions.
	Participant Screening and Measures	Comments related to participant selection for the program and methods for measuring participant outcomes.
RM Activities	Mounted Activities	Activities that are done on the horse.
	Unmounted Activities	Activities that are done off the horse.