THE PSYCHOSOCIAL BENEFITS OF ANIMAL-ASSISTED ACTIVITIES ON THE QUALITY OF LIFE FOR LONG-TERM CARE RESIDENTS

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ABSTRACT

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Relationships and interactions between humans and animals have been observed for many years. Many of these observations have taken place in therapeutic settings and are referred to as Animal-Assisted Therapies (AAT). Previous research completed on AAT has shown positive effects on loneliness, social interaction and quality of life for residents in Long-Term Care (LTC) settings. The human-animal bond can also be identified in companionship roles, rather than therapeutic goal-setting roles, through the use of Animal-Assisted Activities (AAA). Due to being more at risk for depression and isolation, there needs to be a greater focus on the significance of animal companionship and AAA providing the same positive effects as AAT in long-term care settings.

Therefore the purpose of this study was to determine if AAA programing, implemented in a long-term care facility, would improve the quality of life for residents by (1) decreasing depression, and (2) increasing mood. To measure these outcomes, two assessment instruments, the Geriatric Depression Scale (GDS) and Section D – Mood of the Minimum Data Set (MDS) 3.0 were administered pre and post-exposure to the AAA program. The program consisted of two one-hour sessions a week for a period of six weeks with 17 participants who were randomly split into a control (n=9) and experimental (n=8) group. Residents participated in activities requiring both direct and indirect contact with a dog. A paired samples t-test analysis was computed to determine if there was a significant difference in the means between the two groups and the effects AAA had on the incidence of depression and the elevation of mood in residents in a LTC facility. No statistical significance was found between the two groups. Although it was not the goal to conduct a qualitative protocol, there was rich qualitative data that presented
itself to be analyzed (i.e., unsolicited feedback from study participants). This data provided insight to the effects of AAA on select individuals rather than the group. Future research will focus on increasing sample size as well as exploring the perceptions and experiences of LTC residents who participate in AAA using qualitative research methodology.
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DEDICATION

To my father,

David C. Miller

Thank you for always believing in me. Without your love and support throughout my life, I never would have had the courage and determination to achieve this dream. The lessons you taught me are embedded in my soul. Thank you for inspiring me to be a better person and to not give up on myself. I promise to not only follow in your footsteps, but to make my own path as well.
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CHAPTER I. INTRODUCTION

The bond between humans and animals dates back centuries. Primarily used in companionship or working roles, animals have served in a multitude of meaningful relationships for years. The term “pet therapy” was first coined by Boris Levinson in 1962 as a result of his therapeutic sessions with child patients that included dog interaction (Lutwack-Bloom, Wijewickrama, & Smith, 2005). The positive outcome of this human-animal dyad prompted the foundation of pet therapy as a means of therapeutic treatment.

Pet therapy can have multiple goals, such as reducing depression, stress and loneliness, improving quality of life and social interaction, and inducing positive changes in mood (Le Roux & Kemp, 2009). Pet therapy varies in definition from episodic visitation by volunteers with their animals, to structured and scheduled visits by a professional with a goal-directed plan, also known as Animal-Assisted Therapy (AAT) (Lutwack-Bloom et al., 2005). Pet therapy and AAT are under the rubric of Animal Visitation (AV) – a term that encompasses the therapeutic human-animal connection, but differs in the types of animals used in treatment and in what capacity (Lutwack-Bloom et al., 2005). Animal-Assisted Activities (AAA) refers to activities that incorporate animal visitation and companionship rather than therapeutic goal setting (Hatch, 2007). Pet therapy, AAT and AAA are often used interchangeably and are used in hospitals, group homes, and long-term care institutions with older adults (Lutwack-Bloom et al., 2005). For the purposes of this study, AAA will be the program used to represent all human-animal therapeutic relationships and interventions.
One of the first documented cases of pet therapy was introduced in 1792 when “insane asylum” patients cared for animals within the psychiatric environment at the York Retreat in England (Netting, Wilson & New, 1987). This modality was used as a way to positively reward behaviors. Equestrian therapy was introduced into the treatment plan for patients with epilepsy at a facility in Germany in 1867. In the United States, Florence Nightingale was the first to use small animals as companions for sick and incapacitated patients. Dogs were introduced to patients in hospitals, both psychiatric and for wounded soldiers, as a therapeutic adjunct (Lutwack-Bloom et al., 2005). Animals were later introduced to group home settings as positive reinforcement for good behavior.

There is evidence to support that pet therapy modalities have been utilized with positive results, including utilization in long-term care environments. The use of companion animals has been found to be effective in reducing loneliness in nursing home residents (Brune, 2011). Brune (2011) found that residents who had a life history of emotional attachment to animals or pets had a lower rate of loneliness as a result of companionship with animals in the facility. Similar findings found that long-term care residents who voluntarily had interaction or contact with pets during pet therapy sessions had lower scores for loneliness than those who had a lesser level of interaction (Banks & Banks, 2002). In research conducted by le Roux and Kemp (2009), an increased in social interaction and social behavior, as well as a positive effect on the quality of life of long-term care residents were documented through pet therapy intervention. Overall, the studies conducted on the utilization of pets for companionship and the promotion of
physical, social and emotional health of older adults have been supported (Columbo, Dello Buono, Smania, Raviola, & De Leo, 2006).

Defining and measuring Quality of Life (QoL) can be subjective and based on the degree of satisfaction an individual has about different aspects of his/her life. By further identifying influences on different psychosocial aspects, such as depression and mood, a methodological approach can then be applied to attempt to quantify QoL. As prior research has indicated, there are positive effects on psychosocial components such as loneliness, social interaction and quality of life with pet therapy interventions. Prosser and Townsend (2008) found that companion animals used in long-term care settings can be beneficial to residents who have suffered the loss of a loved one and do not have regular access to family. Pooley (2007) found that in the daily absence of close human relationships there was an increase in the significance and meaning of companion animals (Pooley, 2007).

Purpose of the Study

The purpose of this study was to determine if AAA would significantly improve the Quality of Life (QoL) of long-term care residents by decreasing rates of depression and elevating mood. Mood is defined as feelings of hopelessness, sadness, self-worth and general attitude towards life.

Goals of Research

Studies have shown that pet therapy provides benefits in reducing loneliness and depression in long-term care settings. The goal of this research was to determine if AAA had psychosocial effects on the quality of life of long-term care residents, as measured by a decrease in the incidence and frequency of depression symptoms and an elevation in
mood. If the outcome of the research showed positive effects, more facilities could make the necessary accommodations to make AAA readily accessible to their long-term care populations.

**Hypothesis**

I hypothesize that AAA will provide significant psychosocial benefits to the quality of life of a long-term care resident, by decreasing the incidence of depression symptoms and increasing mood.

**Definitions of Terms**

The following definitions refer to terms and the applications thereof, that are used throughout this research study.

*Activities of Daily Living (ADLs)* - refer to daily activities performed in a person’s life such as eating, bathing, dressing, grooming and toileting.

*Alzheimer’s Disease (AD)* - The most common form of dementia in older adults.

*Animal-Assisted Activities (AAA)* – activities that incorporate animal visitation and companionship rather than a structured, therapeutic goal setting (Hatch, 2007).

*Animal-Assisted Therapy (AAT)* – structured and scheduled visits by a professional, with a goal-directed plan, that utilizes the use of animals (Lutwack-Bloom et al., 2005).

*Animal Visitation (AV)* – a term that encompasses the therapeutic human-animal connection, but differs in the types of animals used in treatment (Lutwack-Bloom et al., 2005).

*Dementia* - a progressive impairment of memory and intellectual functioning; characterized by advancing declines (that last over six months) in cognitive functioning
such as memory, attention, the ability to process new information and problem solving abilities (Shagam, 2009).

*Geriatric Depression Scale (GDS)* - a comprehensive screening tool used to evaluate the clinical severity of depression in the elderly (Lutwack-Bloom et al., 2008).

*Instrumental Activities of Daily Living (IADLs)* - refer to activities such as shopping, managing finances, housekeeping, laundry, and meal preparation.

*Level of Care* - a criteria established, by states, that is designed to determine if an individual meets the need for medical and functional assistance that can only be provided by a long-term care facility.

*Long-Term Care (LTC)* – an institutionalized basic or skilled care that is available to older adults who meet a level of care necessary to require more extensive daily care services to meet their needs. Settings include Skilled Nursing Facilities (SNF), Extended Care Facilities (ECF), Continuing Care Retirement Communities (CCRC) and Assisted Living Facilities (AL).

*Minimum Data Set (MDS)* - a standardized, comprehensive assessment tool that is given to all residents that reside in a LTC facility that is certified by the Centers for Medicare and Medicaid (CMS).

*Person-Centered Care (PCC)* – models of providing care to residents that are structured around the concept of care being specifically based on the individual’s needs, preferences, and desires.

*Pet therapy* – coined by Boris Levinson in 1962 as a result of his therapeutic sessions with child patients that included dog interaction (Lutwack-Bloom,
Wijewickrama, & Smith, 2005). This term is used interchangeably with AAA and AAT, but for the purposes of this study pet therapy will be referred to as AAA.

*Psychosocial benefits* – the integration of psychological and social interactions and the effect that those interactions have on an individual’s well-being, or quality of life.

*Quality of Life (QoL)* - the well-being of an individual, refers to one's perception of life satisfaction.
CHAPTER II. REVIEW OF THE LITERATURE

Defining the Older Adult Population

Older adults are individuals who are chronologically at an age that is marked by a particular status or eligibility. While chronological age may not be the most appropriate indicator of a person’s abilities at the age he or she is at, it is still considered the standard criteria by policies and institutions to define that age group. For example, to receive Medicare benefits a person needs to be 65 years of age or older. To be eligible to receive benefits from the Older Americans Act (OAA), which provides programs and services at multipurpose Senior Centers as well as home-delivered meals, the age criteria is 60 years. To receive full Social Security benefits, a person would need to remain in the workforce or not apply for benefits until age 67. In gerontological literature, segments of the older adult population are classified as “young-old,” being age 65 to 74, “middle-old,” age 75 to 84 and “oldest-old,” as those 85 years of age and older (Quadagno, 2014). For the purpose of this study, older adults are defined as persons aged 60 and older.

An increase in the life expectancy rates of older adults in the United States has generated a shift in the demographics of the older adult population over the last century, accounting for a tremendous growth in the number of older adults. In 1900, 3.1 million Americans were over the age of 65, as compared to 35.9 million Americans over the age of 65 in 2003 (Robnett & Chop, 2010). Leading the growth in the older adult population is the baby boom cohort (e.g., individuals born between the years of 1946 and 1964). The Baby Boomers account for 75 million Americans and by the time the last of this cohort reaches age 65, in 2030, one out of every five Americans will be over the age of 65 (Quadagno, 2014). While Baby Boomers contribute to an
aging population, the fastest growing age cohort is the oldest-old category. In the U.S., 10% of the population was over the age of 85 in 2010 (Quadagno, 2014). Between the years of 2003 and 2050, the oldest-old age cohort is expected to experience a growth surge from 4.7 million to 20.9 million (Robnett & Chop, 2010).

This shift in the demographics of the aging population will have a great impact on how society will accommodate the growing needs of these older adults. To adequately meet those needs, it is important to understand the transitions that can take place over the course of a person’s life and what factors can best assist in making those transitions as positive as possible.

Defining Long-Term Care

A transition that can be very difficult for an older adult to face is the loss of independence and being placed in a long-term care facility. As a person ages and becomes more debilitated from an illness or disability, the physical needs required in providing care can often no longer be sufficiently met at home. There are many housing options for those who need assistance and all are based on the amount of care the individual needs. Examples of LTC settings include Skilled Nursing Facilities (SNF), Extended Care Facilities (ECF), Continuing Care Retirement Communities (CCRC) and Assisted Living Facilities (AL). All of these communities provided 24-hour care with varying levels of assistance. Long-Term Care (LTC) is basic or skilled care provided in a residential-type setting. Long-Term Care environments can range from institutional settings to small-house communities. Assisted living facilities offer assistance to individuals as needed, in the comfort of the person’s own apartment. In CCRC facilities, residents can first purchase an independent living home and then transfer into an assisted
living facility or the skilled nursing home, depending on what level of care needs to be met. This continuum of care provides the security of knowing that an individual will always have the appropriate level of care available to him or her.

Adults residing in an LTC facility must meet a level of care necessary to require more extensive daily care services to meet their needs. The purpose of a level of care is to ensure that any individual seeking residence in a LTC facility needs appropriate medical and functional assistance that can only be met by the levels of care offered in an LTC environment and not through services provided within the community. A level of care is determined by individual State criteria. Long-Term Care is care provided to persons needing one or more of the following services: skilled or intermediate nursing care, rehabilitation, and/or assistance with Activities of Daily Living (ADLs) or Instrumental Activities of Daily Living (IADLs). Activities of Daily Living refer to daily activities performed in a person’s life such as eating, bathing, dressing, grooming and toileting. Instrumental Activities of Daily Living refer to activities such as shopping, managing finances, housekeeping, laundry, and meal preparation.

Moore, Boscardin, Steinman and Schwartz (2012) used data from the 2004 National Nursing Home Survey (NNHS) that illustrated the characteristics of the average nursing home resident. Their findings indicated that the average resident was a White, 84-year old female needing assistance with approximately five ADLs. Of the 11,788 residents in the NNHS study, 75% were female (Moore et. al, 2012).

Long-Term Care settings can also follow a Person-Centered Care (PCC) approach to care. Person-Centered Care models in LTC were first introduced by movements such as the Eden Alternative. This movement was structured around the concept of care being
specifically based on the individual’s needs, preferences, and desires (Brune, 2011). The Eden Alternative was founded by Bill Thomas and incorporated a culture change for the way LTC care was provided to its residents. Thomas integrated plants and animals into his retirement and LTC communities, to promote companionship and reduce what he referred to as the three plaques - loneliness, helplessness and boredom (Brune, 2011). The primary tenets of a PCC model of LTC are choice and autonomy. Person-Centered Care model facilities differentiate themselves from traditional LTC facilities by offering choices that are decided upon by the resident. Activities, meals, and therapeutic services are all based on the resident’s preference. Examples of PCC initiatives include dining available at all times, the resident having the ability to decide when he/she wants to rise and retire and the resident choosing when to take his/her medication (instead of having a set medication pass time). Person-centered care models have gained great momentum in LTC environments and more LTC facilities are implementing homelike models for their residents. This momentum has also been noticed by regulatory agencies and PCC initiatives are starting to be used as measures of quality of care. For example, in Ohio, to receive certain levels of reimbursement for Medicaid – funded residents (Medicaid pays for those residents who qualify for financial assistance, through state and federal tax dollars), certain PCC criteria must be met. Criteria include dining, rising and retiring and bathing according to choice. These options are all focused on maximizing choice and independence and enhancing an individual’s quality of life.

Quality of Life in Long-Term Care

Activities in long-term care are often associated with the measurement of the resident’s Quality of Life (QoL). Quality of life, or the well-being of an individual, refers
to one's perception of life satisfaction. Quality of Life is multi-dimensional and combines objective concepts with subjective traits. There is no one definition that can truly encompass the subjectivity associated with QoL. Kane (2001) has identified eleven domains of QoL. They are: security, physical comfort, enjoyment, meaningful activity, relationships, functional capacity, dignity, privacy, individuality, autonomy and spiritual well-being (Kane, 2001). These areas are incorporated into LTC facilities through assessments created by the Centers for Medicare and Medicaid Services.

The Centers for Medicare and Medicaid Services (CMS) is the regulatory agency for LTC facilities receiving funding for residents with Medicare and/or Medicaid benefits. CMS has established their own measures to determine quality of life for long-term care residents and have attached those measures to reimbursement for LTC facilities. Facilities are required to comply with these assessments or their reimbursement will be affected. These measurements are reflected through the Material Data Set (MDS), which is a comprehensive clinical assessment of all LTC residents, conducted at defined intervals throughout the year. Some areas measured by the MDS include mood, activities, functional status and cognition. In the domains that Kane (2001) identified, security was defined as a component of QoL, by using trust and security to measure QoL in one’s world (Kane, 2001). Trust and security are also components of attachment, that provide comfort through a life transition or a time of need.
Guiding Framework

Attachment Theory

Different application methods and interpretations of what constitutes attachment have been derived over the years from many theorists, providing a collective paradigm that constitutes attachment theory. Early theorists such as Carl Jung, Sigmund Freud, Jean Piaget and Erik Erikson all influenced and either directly or indirectly contributed to the development of attachment theory. The collaborative work of John Bowlby and Mary Ainsworth shaped much of the theory, with Bowlby (1989) formulating the tenets of the theory and Ainsworth (1991) developing the concept of the attachment figure.

From birth, there is a biological need to seek attachment. The theory of attachment has been described by Bowlby (1989) as a way of understanding the strong affectional bonds human beings make with others and how these bonds are influenced by different forms of emotional distress and disturbances. Bonding is a form of attachment that develops between close friends, parents and children (Bowlby, 1989). The primary role of this bond is to provide security and protection. Humans seek proximal closeness to those who provide those attributes. Bowlby (1989) proposed that attachment during infancy is critical and has a strong influence of how that attachment behavior continues into adulthood. To expound on his theory of attachment, Bowlby (1989) defined four stages of attachment: the pre-attachment phase, attachment in the making, clear attachment and formation of reciprocal relationships. All of these stages are formed within the first two years of life and ultimately have an influence on relationships and bonds throughout the life span.
Ainsworth (1991) focused her research on attachment behaviors throughout the life span and established the concept of attachment figures. Four characteristics to attachment figures are proximity maintenance, separation distress, secure base, and safe haven. These characteristics imply that the attachment figure is enjoyed when near and accessible, missed when they are gone, dependable as a source of comfort and are looked to in times of stress to relieve this stress.

As adults transition into different social roles of adulthood, they often begin to experience loss. That loss can be in the form of a child moving away from home; the death of a parent, spouse or sibling; or the loss of a home. To measure the strength of an attachment bond, a standardized strange situation was introduced to infants and their responses to that strange situation was noted (Ainsworth, Blehar, Water, & Walls, 1978). This method defined the nature of the attachment bond as either securely attached, insecurely attached or detached attachment. Ainsworth (1989) also made the distinction between a relationship and an affectional bond. Affectional bonds are long-lasting and are the property of the individual; they act in relation to the attachment bond. A relationship is dyadic by nature and requires a history between two individuals and the context of that history is not relevant to the concept of attachment (Cicirelli, 1991).

Cicirelli (1991) theorized that in order for children to continue an attachment to their parents into adulthood, a new attachment methodology emerges to account for the conditions of separation and physical absence over a long period of time. Symbolic attachment represents a greater psychological representation of the attachment figure that still enables the individual to feel closeness and support. Through “mental communication,” the individual can still visualize what the parent might do or say, for
example during a stressful situation or at a time when encouragement is needed (Browne & Sholsberg, 2006). Over time, a protective behavior that transpires as that attachment bond matures. Bowlby (1989) found that attachment behavior leads to protective behavior, as the individual attempts to keep the attachment figure safe from harm. Protective behavior is distinctly different from attachment behavior, which exhibits itself in trying to maintain or restore close proximity with the attachment figure (Cicirelli, 1991).

Attachment theory has provided an etiological framework for research on the relationships between pets and humans. Sable (1995, 2013) found that pets can provide a strong emotional bond (i.e., attachment) that promotes well-being, security, comfort and companionship. This bond often strengthens as pet owners include pets as members of a family, heightening the level of attachment. Albert and Bulcroft (1988) found that different periods of transition throughout the life cycle affect the level of attachment. The times that were most influential on the level of attachment were transitions such as divorce, empty-nest when children move away and loss of one’s spouse (Sable, 1995). The threat of the separation or permanent loss of this attachment can trigger grief, anxiety and mourning. Some researchers have speculated that the threat of separation or permanent loss is most often related to our biological need to associate with, and make attachments to, life and the symbolic lifelike process. This premise can best be explained through the biophilia hypothesis.

Biophilia Hypothesis

The principle of the biophilia hypothesis is that humans possess a biological need to associate with life and the lifelike process (Kellert & Wilson, 1993). The assertion is
that our identity is based directly on our relationship with nature. Humans have an innate need to be involved with nature and the lifelike process can even be expressed by avoidance, rejection or destruction of it (Kellert & Wilson, 1993). Kellert (1993) explored nine fundamental values he felt humans have toward nature. These nine values are utilitarian, naturalistic, ecologistic-scientific, aesthetic, symbolic, humanistic, moralistic, dominionistic, and negativistic. Of those values, the humanistic value identifies the most with attachment theory, having a basis in strong affection and emotional attachment for nature and animals.

The humanistic value is characterized by a strong affection and emotional attachment to nature and is shown through companionship (Kellert, 1993). Pooley (2007) focused on the ability of companion animals to assist older adults living in a group residential environment to deal with significant losses. This was achieved by enabling older adults to maintain affectional bonds. Pooley (2007) found that the most important social provisions were attachment and emotional closeness, followed by being given the opportunity to experience a nurturing relationship.

Companion animals provided older adults a compensatory approach to dealing with loss by utilizing the bond with the animal as one to compensate for the loss that had originally occurred. McColgan and Schofield (2007) focused on the co-dependent human-animal bond that could be transferred between companion animals as one dies and is replaced by another. This replacement allows the human-animal bond to continue over the life course. This same perspective can be applied in a long-term care setting by using companion animals. Pooley (2007) established and maintained affectional bonds between companion animals and former pet owners who had experienced loss and were now
residing in long-term care facilities. These bonds were established or maintained in three categories: maintaining a sense of self-continuity, substituting lost or absent relationships, and building new relationships (Pooley, 2007).

Attachment bonds and companionship can also be identified through the life course perspective (Bengtson & Allen, 1993). The life course perspective describes the roles and transitions that occur throughout an individual’s life. These transitions can be crucial to building and maintaining relationships and to forming a sense of identity. Hara (2007) found that pets help to successfully navigate transitions along the life course. Examples of these transitions can be children moving away from home, the loss of a spouse, or moving in a LTC facility. When this perspective was applied to older adults transitioning from home to a long-term care setting, not only was the physical transition being evaluated but also the psychosocial aspect as well. In all of the cases, the animal acted as a link to this transition. Albert and Bulcroft (1988) found that pet ownership and attachment varies throughout the life course based on pet ownership status, social class, gender and ethnicity. Pet attachment is higher among those who are divorced, widowed, have never married, childless couples and empty-nesters (Albert & Bulcroft, 1988).

Former Pet Ownership

Throughout the life span, pets and pet ownership play a vital role in families and can be an integral part of family dynamics. During childhood and adolescence, pets are often perceived as playmates and friends. During adolescence and young adulthood, pet ownership can teach responsibility and independence. As the aging process begins in middle and later adulthood, pets can fill the void of the “empty-nest” as children leave home or experience the loss of a spouse. Pets become not only a source of
companionship, but pets are often treated like family members. For older adults who are seeking a nurturing relationship, pets can provide a feeling of life satisfaction.

Many pet owners describe their pets as being a part of the family. Cohen (2002) referred to pets being conceptualized as “functional kin,” or the sense of belonging to one’s family. Understanding family dynamics, where pets are viewed as family members, is vital to a successful transition into a long-term care facility. Societal norms and expectations of the life course perspective occur when a pet owner enters a long-term care facility and the norm or expectation is that pet owners relinquish their ownership rights to their pets, usually due to an inability to care for the animal. Additionally, individual long-term care facilities often have pet policies that prohibit pets within the facility. Pet therapy offers an alternative to ownership, where the resident can gain the psychosocial benefits while not having to be directly responsible for the care of the animal.

During the course of their research, Banks and Banks (2002), found that the pet therapy visits prompted a spontaneous recollection of past events by the residents and they provided recalled memories with their former pets. This recall of events also led to an increase in socialization, where residents would begin talking to either the animal or other residents about past events that involved former pets. One resident was able to recall hunting trips with his former dog and another recalled the companionship her own dog had brought her. Knight and Edwards (2008) focused their research on the psychosocial benefits to older adults as a result of pet ownership. Their qualitative study focused on the results of a walking program designed for older adults and their dogs.
The results were that most owners felt a close bond with their dogs and this helped to alleviate feelings of loneliness, isolation and depression (Knight & Edwards, 2008).

Prosser and Townsend (2008) found that companion animals used in long-term care facilities can be beneficial to residents who have suffered the loss of a loved one and also do not have regular access to family. Research has also found that the absence of close human relationships on a daily basis increases the significance and meaning of companion animals (Pooley, 2007). Separation from family can often lead to feelings of isolation; especially for older adults transitioning into a long-term care facility (Colombo et. al, 2006) For former pet owners, this separation from family and a pet place these individuals at potential risk for depression, loneliness and social isolation.

### Depression, Mood, Loneliness and Socialization

Depression, mood, loneliness and socialization were the factors examined in four studies conducted in LTC facilities that focused on the effects that pet therapy had on LTC residents. All of the studies looked at the incidence of social interaction, perception of mood and the incidence of loneliness and depression. The studies reviewed found that all data supported an increase in social interaction and a perception of a positive or elevated mood, as well as a decreased incidence of loneliness and depression.

Subjects within the studies by Banks and Banks (2002) and le Roux and Kemp (2009) were both conducted for six weeks at 30 minutes per weekly visit. The research provided by Banks and Banks (2002) focused on residents from three different LTC facilities (n=45) and found that those who had a greater level of contact with animals had lower scores for the incidence of loneliness. The researcher and pet owner accompanying the dog had minimal interaction with the resident or the dog, therefore the significant
finding was that the resident-animal interaction was responsible for the increased social interaction and decreased loneliness. In the study by le Roux and Kemp (2009), qualitative results were found that supported an increase in social interaction as residents (n=16) expressed feedback that they “talked to each other about the dog.” Prosser and Townsend (2008) provided animal companionship for six weeks but at 90 minutes per weekly visit. Prosser and Townsend’s findings supported the same qualitative results that were found in le Roux and Kemp’s research. The residents (n=18) had shown an increase in social interaction when talking about the companion animals that were brought in and reminiscing about past pets they had (Prosser & Townsend, 2008). In addition to these findings, Colombo et al. (2006) found in their research that just the presence of an animal indicated improvement in mood, depression and anxiety symptoms. Colombo et al (2006) studied residents (n=144) at over seven LTC facilities. In their study, residents were given a canary to care for during a three-month period. After the conclusion of the study, the residents also were shown to have a greater ability to engage in social interactions (Columbo et al, 2006).

In the studies conducted by Lutwack-Bloom et al. (2005), findings indicated positive mood changes after pet therapy visits, when compared to those who did not participate in forms of pet therapy. Lutwack-Bloom et al. (2005) applied their research to residents in two different LTC facilities (n=68) for 6 months at 15 to 20 minutes per session at three sessions per week. Lutwack-Bloom et al.(2005) questioned whether the mood change could potentially be the result of the animal or the interaction with the human volunteer during the pet therapy session. Although future research would be needed to answer their question, Lutwack-Bloom et al. (2005) were diligent in pointing
out that previous research found that pets can serve as a catalyst in human interaction and can diffuse tension of interpersonal communication.

As prior research has indicated, there are positive effects on loneliness, social interaction and quality of life with pet therapy interventions. Brune (2011) discussed the Eden Alternative, an alternative concept to long-term care that was initiated by Dr. William Thomas in 1991. The premise of this alternative was to combat loneliness, boredom and helplessness by creating a person-centered long-term care environment that is closely integrated with plants, animals and children. A challenge to this alternative was that the exposure to animals in a long-term care environment could lead to zoonosis, or an atypical infection brought about animal exposure (Brune, 2011). To combat this, animals in long-term care environments are observed and monitored by veterinarians to ensure safety for both the animal and the resident. These challenges were supported by similar findings from McColgan and Schofield (2007) and Lutwack-Bloom et al. (2005), but were refuted by long-term care facilities reinforcing a resident’s choice to partake in activities or not. If the resident had a fear of contracting a disease, of which the chances were found to be miniscule, they did not have to be involved with the pet therapy programming.

Brune (2011) concluded that companion animals have been found to reduce loneliness in both pet owners and long-term care residents who have had an emotional attachment to pets over their life course. Brune (2011) reviewed and supported similar findings by Banks and Banks (2002) that found residents who had pets as an emotional support system throughout their life course wanted that relationship to continue and were
willing to participate in pet therapy activities. In doing so, their study found that loneliness decreased as a result of a 30 minute AV program given for six weeks.

**Dementia**

As adults age, memory can be affected. The normal aging process may affect memory by altering the way the brain stores and retrieves information (Shagam, 2009). Normal aging does not affect long-term memory, but it may affect short-term memory by making recall of words, names or recent events more difficult (Shagam, 2009). Dementia is a progressive impairment of memory and intellectual functioning. Dementia is characterized by advancing declines (that last over six months) in cognitive functioning (e.g., memory, attention, the ability to process new information and problem solving abilities) (Shagam, 2009). The most common form of dementia in older adults is known as Alzheimer’s Disease (AD). An estimated 5.2 million Americans have AD and 96% of those with AD are age 65 and older (Alzheimer Association, 2013).

Alzheimer’s Disease is the 6th leading cause of death in the United States and the 5th leading cause of death for those age 65 and older (CDC, 2010). Alzheimer’s Disease was named for Alois Alzheimer, who in 1906 pioneered research in the area of dementia through his observations of cognitive decline, hallucinations, delusions and aggressive behavior (Shagam, 2009). In addition to AD, dementia manifests in many other forms, both reversible and irreversible. Reversible forms of dementia may be caused by drugs and alcohol use, acute conditions (such as pneumonia and nutritional deficiencies) and depression (Ferrini & Ferrini, 2013). If the condition causing the dementia is treated, the symptoms of dementia will dissipate. Irreversible forms of dementia include vascular dementia, frontotemporal dementia (also known as Pick’s Disease), and Lewy body
dementia. These forms of dementia are progressive and incurable, but some symptoms that accelerate the dementia process can be managed to reduce the potential for further catalysts.

One of the most challenging aspects of dementia is the management of the difficult and/or challenging behaviors exhibited by the person with the disease. The behaviors are the result of the person with dementia’s efforts to try to communicate needs that he or she no longer has the ability to recognize, but the needs must still be met. These needs can be hunger, expression of anger, thirst, urge to go the bathroom, temperature regulation, and sleep. Often the person with dementia no longer understands what the feeling of hunger is, but a physiological need for food assists in creating a behavior that will exist until that need is met and the person’s body is no longer in need of nourishment. Behaviors may include agitation, aggression (expressed by hitting, kicking, screaming, biting), repetitiveness, delusions, confusion, and paranoia (Ferrini & Ferrini, 2013).

Pet therapy and Residents with Dementia

Managing behaviors associated with dementia can be a very challenging and daunting task for caregivers. Often, the behaviors are too much for one caregiver to handle in the home alone, thus a person with dementia is placed in a dementia care unit. Two behaviors that often require more assistance are sundowning and wandering. Sundowning is a heightened accumulation of many of behavioral symptoms, that occur later in the day, after fatigue has intensified. Wandering can happen at any time of the day and is a result of the pacing that is often performed by persons with dementia who are still physically active and are often looking for direction or guidance home – even if
home is where they originally wandered away from. Dementia units, within LTC and AL facilities, are fast becoming the new strategic planning directive for caring for older adults with cognitive impairments. Dementia units offer secure, specialized programming to assist in the management of these challenging behaviors often associated with dementia. One of the main reasons older adults are placed in a LTC facility is due to the caregiver’s inability to manage the difficult behaviors associated with dementia (Sellers, 2005).

One technique that has been shown to provide significant beneficial results is pet therapy. Results were found to be successful when utilizing pet therapy with residents diagnosed with Alzheimer’s Disease who had a life history of positive association with animals (Sellers, 2005). Sellers (2005) focused on the short-term effects of pet therapy on four residents with dementia living in a LTC facility. The residents participated in a two-week study that offered five, 15-minute Animal Assisted Therapy (AAT) interventions, that were repeated for the second week of the study. The residents’ verbal interactions were studied and measured for aggressive behaviors. The results of the research found that pet therapy had an influence on the reduction of agitated behaviors. The challenge is determining if pet therapy interventions could provide any long-term beneficial effects on agitated behaviors.

Richeson (2003) also found beneficial results advocating for pet therapy for residents with dementia. Richeson (2003) studied 15 residents with dementia and the therapeutic intervention of pet therapy. During the therapeutic intervention session, the residents would brush the dog, feed it treats, pet it, and talk to it. This intervention also prompted the discussion of past pet ownership among the residents. The results were a
decrease in agitated behaviors and an increase in socialization. Challenges to this study were predicting how long and how often the intervention should be conducted to obtain optimal results (Richeson, 2003). A key element that was noted by Richeson (2003) was knowing the resident’s past history with animals, whether in pet ownership or just interest in, or liking of animals. Residents that complemented their activities with their past interests were shown to benefit more from the participation in the activity.

Animals were also shown to have an effect on the nutrition of residents with dementia. In a study conducted by Edwards and Beck (2002), residents in dementia units from three different facilities were introduced to fish tanks in the dining or activity rooms of their dementia units, designed to be visible while the residents ate their meals. The study measured to see if exposure to the fish tanks would improve dietary intake of the residents. The dietary intake of the residents was measured pre, during and post treatment and the results found that 87% of the participants had an increase in their dietary intake from the beginning of the study. The study also found that there was a 25% decrease in the use of supplemental nutrition given to the residents with dementia. The positive results generated from these studies are examples of where pet therapy has been introduced and found to be successful.

**History of Pet Therapy**

The term “pet therapy” was first conceived by Boris Levinson in 1962 as a result of his therapeutic sessions with child patients that included dog interaction (Lutwack-Bloom et al., 2005). Levinson used his dog Jingles as a transitional object, which allowed children the ability to integrate themselves with the therapeutic environment and become more open and willing to talk with the dog present (Geist, 2011).
One of the first documented cases of pet therapy was introduced at the York Retreat in England in 1792 (Netting et al., 1987). William Tuke introduced animals to the York Retreat in an attempt to improve the unacceptable conditions to which the inmates were subjected to (Netting et al., 1987). At the York Retreat, “insane” asylum patients cared for animals within the psychiatric environment and this modality was used as a way to positively reward behaviors (Lutwack-Bloom et al., 2005).

Animals began to have more of a presence in mental health hospitals in the 19th century. At Bethlem Hospital in England in the 1830’s, farm and domesticated animals were placed on the grounds of the “lunatic asylum” (Kruger & Serpell, 2006). The animals gave inmates a physical presence to talk to and provided a more aesthetic look to the environment. In 1867, equestrian therapy was introduced into the treatment plan for patients with epileptic seizures at a Bethel treatment facility in Bielefield, Germany (Lutwack-Bloom et al., 2005). Farm animals and a wild game park were introduced, in addition to traditional pets that the patients were allowed to care for (Netting, Wilson & New, 1987).

In the United States, Florence Nightingale was the first to use small animals as companions for patients that were debilitated. In her *Notes on Nursing* (1880) she stated that a small pet is often an excellent companion for the sick, especially in chronic cases (Kruger & Serpell, 2006). In 1919, dogs were introduced to patients in psychiatric hospitals and used in addition to psychotherapy (Lutwack-Bloom et al., 2005). This practice was continued in soldier and veteran hospitals in the 1940’s.

The Green Chimneys children home in Brewster, New York, was founded in 1948 with the purpose of raising animals and children together (Golin & Walsh, 1994). The
nurturing environment that is created provides the children, who mainly come from foster care and group homes, with a sense of security and belonging. The bond the children form with the animals provides them the basis for understanding that by nurturing they will learn to recognize what it feels like to provide care and they will be able to recognize that trait when they are nurtured.

Parents often use animals as companions for children and to provide children with an object for social interaction and character development (Endenberg & van Lith, 2011). The premise behind animals being companions is to instill responsibility and to develop a sense of character. This development is a combination of social, emotional and cognitive development. Companion animals foster an environment in which children can assist in caring for the animal, which in turn can promote bonding and provides children the opportunity for social and emotional growth through building self-esteem and empathy for others. Studies have found that children with a close relationship with their companion animal scored higher on a measure of empathy (Endenberg & van Lith, 2011).

Expounding on the applications Levinson set forth, animals have been introduced to an array of therapeutic situations. Hippotherapy, or equine-therapy, has been used for individuals with developmental disabilities and mobility impairments (Lutwack-Bloom et al., 2005). Dolphins have also been used in studies with individuals suffering from cognitive functioning deficits and in treating depression. Antonioli and Revelev (2005) found that a two-week treatment program of snorkeling with dolphins for one hour a day, five days a week was effective in alleviating symptoms of depression.
Pet therapy programming has evolved to include community programming as well. Assistance Animals help many individuals with impairments and disabilities to achieve greater daily independence. Programs such as Assistance Dogs for Achieving Independence or Pet Partners Therapy Animal Program offer trained service and therapy animals to persons with hearing and vision impairments, developmental disabilities, chronic debilitating conditions and also provide assistance in schools, nursing homes and hospitals. Today, some area humane societies have “Pet Companionship Programs” or “Seniors to Seniors Programs” that provide older adults with animals and the supplies to care for them at reduced fees, to promote socialization and companionship (Hara, 2007).
CHAPTER III. METHODOLOGY

Researcher’s Lens

I have been surrounded by animals by entire life. I consider myself fortunate to say this, but I understand that it blurs my judgment in thinking that everyone should have the same attraction for animals as I do. I have a special affinity for dogs. I am appreciative of the fact that this is an animal who will provide unconditional love and comfort and only wishes to have those feelings reciprocated. I tend to overlook the dog fur, the drool and the intimidation of size that can accompany a dog and therefore not provide a pleasant experience for someone who is not a self-proclaimed dog-lover.

Two years ago I rescued an inquisitive beagle named Gertie. She may not have aspired to be a “therapy dog,” but Gertie has tested the theory of cumulative disadvantage (those who start out at a disadvantage are more likely to remain at a disadvantage) and proven that a dog from the pound can beat the odds. I began bringing Gertie to the LTC facility that I worked at almost immediately after adopting her. She formed bonds with the residents and staff very quickly. Gertie’s demeanor is docile and she has freely roamed the facility for over two years. Gertie was not consistently present in the facility, therefore her sporadic visits made her the perfect candidate for an animal to be utilized in AAA research. The residents were already familiar with her, so there was no fear, and she knew her boundaries, unlike a dog that would be new to the facility.

I set out to measure if a routine visit from her would provide significant results regarding an elevation in mood and an overall decline in depression or depressive-like symptoms. I found surprising qualitative data that I had not originally planned to gather but rather the data presented itself to be found. I had originally based my research on
gathering quantitative data from the information we routinely measure in the LTC facility. I never thought about counting the psychosocial observations I, or the staff, were able to witness. I began to write down quotes the residents would tell me, times that I found Gertie made the residents, staff and family members smile, situations where I felt Gertie made a positive influence on someone’s life. I wanted to capture the full spectrum of what Gertie’s presence meant to the lives she touched in the LTC facility.

I found that a schedule of two days a week at a set time did not necessarily follow the person-centered care model the residents at this LTC facility prefer. While the goal was to set aside a distinct time to measure results, what I discovered is that Gertie’s overall presence meant more to the residents than being a part of a structured activity. Gertie had acclimated to a way of life with residents and it was odd for her and the residents to not be as present during the research process. Gertie’s normal routine prior to being a part of this research was to come to the facility in the morning, roam from hall to hall visiting but primarily seeking out left-over breakfast. She would continue her travels throughout the facility after she ate and would sometimes head to the activity room during coffee hour in the morning. Sometimes she would rest before lunch, usually in a resident’s room of her choosing or in the hallway but she could often be found in a resident’s room or on the dementia unit. Lunch would be a repeat of breakfast and staff would detour her from the dining room but the residents always seemed to summon her back in and she always obliged. Around two o’clock in the afternoon, she’d come up to my office for a nap on her bed. By 4 o’clock she was up again making rounds until it was time to go home. Sometimes she would be able to stay for dinner and other times she would hide in a resident’s room in the hopes she could stay for dinner. This was
Gertie’s routine, although some days varied, traditionally, this was how she spent her days at the LTC facility.

Participants

Participants of this study were residents of a private, corporate-owned Long-Term Care (LTC) facility in Ohio. The LTC facility has a licensed occupancy of 79 residents with an average daily census of 60. Eligibility criteria included permanent residency in the facility and being age 60 to 100. A total of 17 residents met the criteria. Permanent residency was defined as residing in the facility for six months or longer. Residents who were short-term residents, residing less than six months, were excluded from the study. This exclusion was included to eliminate the potential for a predisposed, elevated mood, based on knowledge that the short-term resident would be returning home.

The study was originally designed to only analyze the effects of AAA on older adult residents of the LTC, as defined for the purposes of this research as having a minimum age of 60 and a maximum age of 100. There were no residents in the facility over the age of 100. The mean age of the participants (n=17) was 79.2 years old. The average length of stay, in days, was 898 days (= 2.5 years). The average number of ADLs, of all participants, that required assistance was 6.2 (See Appendix A).

Each resident was identified in the study by his or her resident identification number, which is confidential to the LTC facility. This number protected the privacy of the residents. All potential qualified participants were informed of the study by a written invitation, provided by a staff member of the LTC facility. The staff member would provide the resident with the invitation and read it to the resident, if requested. Upon completion of reading the invitation, the staff member would ask the resident if he or she
would like to participate in the study. Informed consent and HIPAA authorization were
given to the resident at that time. Staff members were informed that a resident must be
capable of providing his/her own informed consent to be allowed to participate in the
study. If a resident could provide consent to participate but was physically unable to sign
the informed consent, two staff members could witness a verbal consent or the resident’s
mark on the signature page. After all the participants consented, they were randomly
placed into control or experimental groups. All components of the study were submitted
to and accepted by Bowling Green State University’s Human Subject Review Board
(HSRB).

Instruments

Two instruments used to assess the residents’ mood and depression were Section
D of the Minimum Data Set (MDS) 3.0 and the shortened version of the Geriatric
Depression Scale (GDS). These assessment instruments were given to the residents by
the LTC facility’s assessment nurse. The Minimum Data Set (MDS) 3.0 is a
standardized, comprehensive assessment tool that is given to all residents that reside in a
LTC facility that is certified by the Centers for Medicare and Medicaid (CMS).
Certification by CMS allows the LTC facility to accept payment from Medicare or
Medicaid for services provided to the resident, such as skilled nursing care, therapy
services and routine room and board. The MDS is used primarily as an assessment tool
and to identify care issues or concerns regarding individual residents. Per CMS
regulations, the MDS must be conducted at minimum upon admission, quarterly and
annually. An additional assessment may be completed if there is a significant change to a
resident’s health status.
There are 20 sections of the MDS. Section D assesses the resident’s mood and that is the section that was used in this study. There is a look-back period of 14 days that is taken into consideration when assessing a resident. The resident was asked a series of nine questions that were then measured for symptom presence and frequency (See Appendix B). For purposes of this study, the residents’ most recent MDS assessment (completed in the two weeks prior to the start of the study) was used to establish a baseline for the residents’ mood.

The Geriatric Depression Scale (GDS) is a comprehensive screening tool used to evaluate the clinical severity of depression in the elderly (Lutwack-Bloom et al., 2008). The shortened version, or 15-item version, was used in this study. The GDS was given to all resident participants prior to the start of the research, to establish a baseline for depression (See Appendix C). Section D of the MDS as well as the GDS were given upon completion of the study, to measure any changes that occurred in the score values from pre to post testing.

The dog that was used in the study was a beagle named Gertie. As previously described, Gertie is a rescue dog that has been coming to visit residents of the facility for over two years. The residents were familiar with her temperament and her habits. Prior to the study, Gertie did not come to the LTC for six weeks, to provide a more accurate baseline for the GDS and the MDS.

**Procedures**

The purpose of this study was to determine if AAA would significantly improve the Quality of Life (QoL) of LTC residents by decreasing incidence and frequency of depression and elevating mood. Participants in the experimental group (n=8) engaged in
two 60-minute activity sessions a week for a duration of six weeks. During these sessions, 30 minutes of activity time was direct contact with Gertie and activities consisted of grooming, petting and playing with her. Play activities included giving her commands and then rewarding her with treats. Some of the commands she would respond to would be “sit”, “lie down”, and “shake”. She would also bark, or “talk” for treats when the residents would ask her: “Who’s cute?” One-on-one time was offered to each of the participants during that time. The remaining 30 minutes of the session was non-direct contact with Gertie, but Gertie was present in the area for the activity. To prevent Gertie from becoming the center of the activity, the staff member in charge of the activity would keep her on her leash.

Non-direct contact activities included listening to music programs, scheduled television or movie programs, bingo, arts and crafts, coffee hour, country drives, therapeutic games (Wii sports and parachute games), happy hour programs, birthday parties, and church programs. The non-direct contact activities were carried out by the facility's activity personnel or community volunteers either in the multi-purpose activity area, the dining area, outdoor patio area or on location (for the country drives). Direct-contact activities were carried out by the activities staff and the researcher. The activities staff were familiar with Gertie and had been shown the commands she would follow and were given instructions on how to reward her for completing commands.

Analysis of Data

Using the Statistical Package for Social Sciences (SPSS) version 21, a t-test of paired samples was chosen to compare the two related groups, to determine if there was any significance between the means of the two groups from the results of the GDS and
MDS assessments. Other statistical analyses, such as analysis of variance (ANOVA) or repeated measures t-test, were found to not be applicable to this research study, primarily due to the small sample size used.
CHAPTER IV. RESULTS

Quantitative analysis found no significant differences between the control and experimental groups in both the pre and post test of the GDS and the MDS, using a 95% Confidence Interval (CI). The mean scores between the pre (GDS1) and post (GDS2) test for the control group decreased while the experimental group increased, although no statistical significance was found. The mean scores between the pre (MDS1) and post (MDS2) test for both the experimental and control groups did indicate a slight elevation in mood with a decline of negative symptoms that effect mood.

A percent change in the mean scores from the pre to post measures of the GDS and MDS were also calculated. The results of which indicate a greater decline in measures of depressive symptomatology in the GDS scores of participants in the experimental group when compared to the control group. The results of the MDS scores indicated a greater decline with the control group as opposed to the experimental group. Factors that could have effected the change in MDS scores are further explained in the vignettes.
TABLE 1. Comparison of the Control and Experimental Groups

<table>
<thead>
<tr>
<th>Variables</th>
<th>Experimental Group (n=8)</th>
<th>Control Group (n=9)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>S</td>
</tr>
<tr>
<td>GDS1</td>
<td>4.13</td>
<td>2.95</td>
</tr>
<tr>
<td>GDS2</td>
<td>3.63</td>
<td>2.50</td>
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<td>% Change</td>
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<tr>
<td>MDS2</td>
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<td>2.25</td>
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<tr>
<td>% Change</td>
<td>5.46</td>
<td></td>
</tr>
</tbody>
</table>

To further examine the quantitative data, individual data was compared and an analysis was completed to illustrate individual differences in the MDS data. The analysis shows individual scoring on each of the nine distinct questions asked on the MDS assessment. The corresponding numbers represent the number of days the residents reported the symptoms as occurring in the 14-day period prior to the assessment being given (See Appendix D).

While it was not the intent to conduct a qualitative analysis, rich qualitative data was available. Preliminary observations indicated an increase in social interaction and mood with residents of the experimental group. Unsolicited comments were provided that support this finding.

Vignette #1

John L. had both of his legs amputated since his original admission in February of 2013. As a result of the amputations, John L. seldom came out for activities, but loved his one-on-one visits with Gertie in his room. When asked if he would be interested in participating in the research activity with Gertie, John L. said he would love to spend
more time with Gertie. John L. soon began coming out of his room more for activities that did not include Gertie and also began eating meals in the dining room and developing friendships with other residents. Having Gertie perform her tricks, such as sit, lie down and play “Who’s cute,” were some of the activities that brought a smile to John L.’s face. During the research study, John L. and another younger resident who also enjoyed Gertie’s company, decided to become roommates. This was a strong indicator of an increase in social interaction as John L. had been in a room by himself up until that point.

Vignette #2

Mildred C. had become more solitary since her admission in 2007. After she was asked to participate in the research study with Gertie, her participation level in all activities began to increase. She started going on outings outside of the facility and took a special interest in getting out of bed to enjoy happy hour, the non-direct contact activity for Gertie. Mildred C. stated:

“I love dogs. I always had dogs and I miss having them. There’s nothing a dog likes more than to be brushed…right at their bottom…see (brushes Gertie).”

Mildred C. was in the experimental group and would often assist others with advice on proper grooming techniques for dogs.

Vignette #3

Betty R. and her roommate, Esther A., were both in the experimental group with Gertie. Betty R. explained that over the last year Esther A. had developed a romantic relationship with Stewart S., also a resident in the LTC and in the experimental group. Betty R. stated that:
“Sometimes I get upset or feel sad…like I’ve lost my friend to “him”
(referring to Stewart S.)…she (Esther A.) doesn’t even talk to me anymore.”

When the direct-contact activity began, Betty R. appeared to be enjoying her one-on-one
time with Gertie. Observations indicated that Betty R.’s mood appeared to elevate during
her one-on-one activity with Gertie. She was observed smiling and laughing as she
engaged in activities with Gertie. Even with Esther A. and Stewart S. also in the group,
Betty R.’s mood did not appear to be affected.
CHAPTER V. DISCUSSION

The goal of this research was to determine the effects of AAA on the QoL of LTC residents. The quantitative results concurred with the research conducted by Prosser and Townsend (2008) and le Roux and Kemp (2009) in which significance was not found. The sample size could have influenced the potential for providing statistical significance. However, even if the sample had been larger, it is not known whether there would be statistical significance. Future research could look at utilizing a larger sample. Another factor that influenced the significance was the variability of the scores. For this research, the standard deviation was close to the mean, providing for less variability.

To explain the statistical results, it is important to look at outside influences that may have had an effect on the outcome of the data received. For example, one resident in the experimental group, Esther A. showed a substantial increase between pre and post tests (e.g., GDS and MDS), but this resident also endured the stress of her significant other been very ill during that time frame, in addition to her own dementia progressing. In the control group, another resident saw a substantial increase in the GDS scores from pre to post test. Garnet D. experienced an escalation of psychological issues, secondary to her early-onset dementia. She experienced behaviors such as uncontrollable agitation, hallucinations and aggressive behaviors towards staff that were resolved with medication adjustments. This period of aggravation may have influenced the scores. Both Esther A. and Garnet D. were still involved with activities with Gertie, either through direct or non-direct contact and both residents still provided positive verbal or non-verbal feedback.
regarding Gertie’s presence and their interactions with her. Esther A. would always comment every time she saw Gertie in the direct- contact activity:

“There’s my sweetie. Look at her…see she’s happy to see me…look at that tail…there she is.”

These observations reaffirm the attachment bond described by Sable (1995, 2013). In times of stress or transition, individuals seek comfort, companionship and security. In the cases of Garnet D. and Esther A., both were able to find intermittent comfort through their interactions with Gertie. Although the effects of the interaction did not influence the statistical findings of the results, the observations noted during the interaction did indicate the bond was present during the activity.

The GDS also reflected some conflicting results generated from the MDS. Two residents in the control group, Steven H. and Barbara W., were also undergoing some extreme circumstances that continued on throughout the study. Steven H. was informed, prior to the study, that his daughter was dying from cancer. Barbara W. had been encountering some financial and legal issues that had escalated more over the last six months. The data from the GDS showed an increase in the indicators for depression, suggesting in the post-test that both residents were depressed. The MDS questions, however, did not indicate signs of depression and actually showed an improvement in mood in the post-test.

If additional qualitative data such as this were obtained and analyzed, perhaps the data would have revealed that the interactions with Gertie did confirm positive psychosocial effects on some of the resident’s perceived QoL. One resident continually asked:
“When can Gertie come back and play like she used to?”

What this statement revealed was that her presence did make a difference. While not statistically significant in quantitative terms, it was significant from a life satisfaction perspective to the residents who felt a bond or connection with Gertie. Allowing Gertie to be able to be at the facility every day for six weeks with additional structured activities, both direct and non-direct contact, may have been a better way to structure the study.

There were residents who were excluded from the study, because they did not meet the age requirement. These individuals still provided qualitative feedback, through their observation and interaction with Gertie, outside of the study. One resident chose to participate in activities with Gertie, although his qualitative data was not applicable. Another resident chose to participate with Gertie on her own due to scheduling conflicts. The following vignettes illustrate examples of residents who sought out interactions with Gertie:

Vignette #4

“Brenda S.” is a 44-year old resident that works at a local development disability workshop. A normal day for Brenda S. is leaving for work by 7:30am and returning to the LTC facility by 3:30pm. There are certain days when the workshop is closed and Brenda S. remains at the facility all day. On those days, she states that she gets “bored,” which often leads to behavioral issues, in her case borrowing or stealing items that do not belong to her. This has been an ongoing problem with this resident. She also has a potential to overeat if she has any extra food in her possession and she has no impulse control with eating. Brenda S. is a brittle diabetic. Although activities are provided for
her, she is limited on what activities she can participate in (due to her diabetic condition) and her behaviors which have prompted a strict care plan that is jointly created and monitored by the LTC facility and the County Board of Developmental Disabilities. Gertie has proven to be a great diversion for Brenda S. and Gertie’s presence on those days off from work provides Brenda S. with different choices and activity options she otherwise would not have. Brenda S. enjoys walking Gertie around the facility perimeter and taking her outside when Gertie has to go to the bathroom. These activities have allowed the resident to earn trust, which is an issue she struggles with.

**Vignette #5**

In November of 2013, “Daryl B.” will have resided in the LTC facility for ten years. The victim of a debilitating stroke, Daryl B. is 53 years old. He is active in the facility, serving as President of Resident Council and an advocate for a PCC model of care. Due to his stroke, his temperament sometimes is affected and his mood can change very quickly. His speech was also severely affected by the stroke, making communication difficult for those who are not as familiar with his needs or his non-verbal cueing. This barrier to communication can often lead to a heightened sense of frustration that can escalate to anger and depression. When this occurs, the resident exhibits his frustration in foul language and resistant behaviors (resisting care, not getting along well with others at activity events) towards the staff, primarily the nursing assistants and activity assistants.

Daryl B. has been around Gertie since she began coming to the facility two years ago. In that time, he has become very fond of her. When she has not been at the facility for a long period of time (a week or more), he is one of the first to say: “When are you bringing our dog back?” He has learned to identify Gertie with the facility. He
considers her the facility’s dog. When Gertie is present, his favorite activity to do with her is feed her. He usually feeds her too much and the staff repeatedly ask him to stop, but he enjoys making Gertie happy and he enjoys the attention from the staff that he receives requesting that he stop feeding the dog. Gertie provides a reciprocal relationship to Daryl B., as he is one of the first people she seeks out when she comes to the facility and she returns to him throughout the day and tends to stay close to him – for food but also companionship.

“I look forward to seeing Gertie and I like to feed her. She likes it too [laughs].”

Another resident who did not meet the age or long-term eligibility and who originally did not like dogs, warmed up to Gertie over several months. His roommate was a participant in the study and that may have helped to transition him to a comfort level with Gertie. He was always eager to pet his friend or to feed her. He kept asking:

“Where’s my little buddy…why don’t you bring her in more?”

Limitations

The research timeframe of two activities a week for six weeks was often a limitation to the study. The LTC facility operates under a PCC concept and the residents did not always want to participate in the activities at the exact time that they were being offered. The daily timeframe tended to work for the group as a whole, due to those in the direct-care group coming to the activity at staggered times and being able to maximize their one-on-one time with Gertie. The residents enjoyed their time with Gertie but did not enjoy the restrictive nature of the constraints that were placed on them about when
they could spend time with Gertie. This LTC facility was familiar with dogs, Gertie in particular, who had her own routine at the facility. Having a set schedule to adhere for interacting with her was not always well received by residents. There were times when some residents did not want to come down for activities and we would have to reschedule the activity for a different day. Because this only occurred with the direct-contact group and since the group size was small, we were able to accommodate the requests.

Additional limitations to this study were the variability of the sample and the sample size. These findings were consistent with the findings in similar studies conducted by le Roux and Kemp (2009) and Prosser and Townsend (2008). All three studies had similar sample sizes and all three did not result in significant statistical findings. A possible solution would be to increase the sample size to provide more power. This would provide a better opportunity for statistical significance. All three studies were able to provide supporting qualitative data that were not included as a part of a complete qualitative analysis, but were still important to mention.

This study also was limited by age restrictions. The original concept was to obtain results of those aged 60 to 100 years of age. The goal was to measure the benefits of AAA on the quality of life of LTC residents by focusing on the older adult population of the LTC facility. The results from the residents in the study pose the question of whether or not the data is a true representation of this LTC facility’s resident population? The younger residents in the LTC facility interact with Gertie whenever she is in the building and were able to provide qualitative data that could not be considered for statistical analysis.
Future Research

This study focused on the effects of AAA on the QoL of LTC residents, with respect to the incidence of depression and indicators of mood. Findings in this research suggest that there could be potential in looking at the level of increased social interaction and decreased levels of hopelessness. By broadening the scope of the QoL indicators and including increased social interaction and levels of hopelessness, the effects of AAA have a better chance of being quantified. Another way to enhance the study would be to identify residents that currently have depression or indicators of a decreased mood and study the effects of AAA on them. That scope, again, could be broadened to include increased social interaction and decreased levels of hopelessness.

The sample size used in the study, while statistically concurrent with other studies of similar size, does pose the question as to how large of a sample size does there need to be to provide a greater potential for statistical significance? To run additional analyses, a larger sample may need to be used. Another approach would be to maintain the current sample size, or potentially minimize the sample size, and conduct the study as a longitudinal study. A longitudinal study could broaden the scope of the research. The focus of the longitudinal study would be to observe the individuals of the groups over a longer period of time and examine the effects AAA had on the individual indicators of depression and mood. This could be done be focusing on the individual questions in Section D of the MDS and their frequency of occurrence, as opposed to just the incidence of occurrence.

The age parameters of the study posed a potential limitation to statistically significant results. Qualitative data that was inadvertently found reflected that if those
residents (e.g., under the age of 60) had been included in the quantitative analysis, there would have been a greater potential for significance. Ideally, the results received should reflect the accuracy of the findings. By expanding the age restriction, all residents’ results would have been included.

The final consideration for future research would be to expand the amount of time that the AAA are given in the LTC facility. There are many ways to approach the methodology of AAA. The study could be lengthened to allow more of an opportunity for bonding. The frequency of visits in a shorter research time period could also be increased. A combination of both suggestions could be attained for optimal exposure.

Conclusion

While there was not statistical significance to demonstrate that AAA was effective in lowering the incidence of depression or elevating mood, there was qualitative evidence to suggest that AAA did make a difference in the QoL of certain residents. Being around Gertie, participating in activities with her and her presence in the LTC facility provided the residents with a companion and an opportunity for social interaction. By the comments received from the residents and personal observations of the interactions, it can be concluded that Gertie’s presence is valuable. She brightens the day of those she is surrounded by and she provides comfort and friendship to those who need it.

After the completion of the study, Gertie did not visit the LTC for two weeks. This was purposely done to see if the residents missed Gertie being a part of their daily lives. Twelve of the 18 residents in the research study, and four other residents not in the study, vocalized their desire to have her return to the facility. Those who were unable to
verbalize or express their feelings regarding her absence were still able to indicate with non-verbal cueing, such as smiling, happiness upon Gertie’s return to the facility, when she was able to interact with them. Gertie cannot eliminate the root causes of depression. She cannot erase a terminal diagnosis of Alzheimer’s or return someone to his or her home to live independently. Animal-assisted activities are designed to provide a method to help alleviate the depressive symptoms that can be associated with those situations. The goal with Gertie was, and still is to be that method – through the power of paws.
REFERENCES


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79.2352941 Average Age
898.294118 Avg LOS

4.23529412 4.23529412 mean score = no change
**Section D**  
Mood

**D0100. Should Resident Mood Interview be Conducted?** – Attempt to conduct interview with all residents

Enter Code

- **0. No** (resident is rarely/never understood) → Skip to and complete D0500-D0600, Staff Assessment of Resident Mood (PHQ-9-0V)
- **1. Yes** → Continue to D0200, Resident Mood Interview (PHQ-9e)

---

**D0200. Resident Mood Interview (PHQ-9e)**

Say to resident: “Over the last 2 weeks, have you been bothered by any of the following problems?”

If symptom is present, enter 1 (yes) in column 1, Symptom Presence.

If yes in column 1, then ask the resident: “About how often have you been bothered by this?”

Read and show the resident a card with the symptom frequency choices. Indicate response in column 2, Symptom Frequency.

1. **Symptom Presence**
   - **0. No** (enter 0 in column 2)
   - **1. Yes** (enter 0-3 in column 2)
   - **9. No response** (leave column 2 blank)

2. **Symptom Frequency**
   - **0. Never or 1 day**
   - **1. 2-6 days (several days)**
   - **2. 7-11 days (half or more of the days)**
   - **3. 12-14 days (nearly every day)**

<table>
<thead>
<tr>
<th>Symptom Presence</th>
<th>Symptom Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.10</td>
<td></td>
</tr>
</tbody>
</table>

- **A. Little interest or pleasure in doing things**
- **B. Feeling down, depressed, or hopeless**
- **C. Trouble falling or staying asleep, or sleeping too much**
- **D. Feeling tired or having little energy**
- **E. Poor appetite or overeating**
- **F. Feeling bad about yourself – or that you are a failure or have let yourself or your family down**
- **G. Trouble concentrating on things, such as reading the newspaper or watching television**
- **H. Moving or speaking so slowly that other people could have noticed, Or the opposite – being so fidgety or restless that you have been moving around a lot more than usual**
- **I. Thoughts that you would be better off dead, or of hurting yourself in some way**

**D0300. Total Severity Score**

Add scores for all frequency responses in Column 2, Symptom Frequency. Total score must be between 00 and 27.

Enter 99 if unable to complete interview (i.e., Symptom Frequency is blank for 3 or more items).

**D0350. Safety Notification** – Complete only if D02001 = 1 indicating possibility of resident self harm

Enter Code

- **0. No**
- **1. Yes**
# Geriatric Depression Scale (Short Form)

Patient's Name: ___________________________ Date: ___________________________

**Instructions:** Choose the best answer for how you felt over the past week. Note: when asking the patient to complete the form, provide the self-rated form (included on the following page).

<table>
<thead>
<tr>
<th>No.</th>
<th>Question</th>
<th>Answer</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Are you basically satisfied with your life?</td>
<td>YES / NO</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Have you dropped many of your activities and interests?</td>
<td>YES / NO</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Do you feel that your life is empty?</td>
<td>YES / NO</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Do you often get bored?</td>
<td>YES / NO</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Are you in good spirits most of the time?</td>
<td>YES / NO</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Are you afraid that something bad is going to happen to you?</td>
<td>YES / NO</td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>Do you feel happy most of the time?</td>
<td>YES / NO</td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>Do you often feel helpless?</td>
<td>YES / NO</td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>Do you prefer to stay at home, rather than going out and doing new things?</td>
<td>YES / NO</td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>Do you feel you have more problems with memory than most people?</td>
<td>YES / NO</td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>Do you think it is wonderful to be alive?</td>
<td>YES / NO</td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>Do you feel pretty worthless the way you are now?</td>
<td>YES / NO</td>
<td></td>
</tr>
<tr>
<td>13.</td>
<td>Do you feel full of energy?</td>
<td>YES / NO</td>
<td></td>
</tr>
<tr>
<td>14.</td>
<td>Do you feel that your situation is hopeless?</td>
<td>YES / NO</td>
<td></td>
</tr>
<tr>
<td>15.</td>
<td>Do you think that most people are better off than you are?</td>
<td>YES / NO</td>
<td></td>
</tr>
</tbody>
</table>

(Total)

(Sheikh & Yesavage, 1986)

**Scoring:**

Answers indicating depression are in bold and italicized; score one point for each one selected. A score of 0 to 5 is normal. A score greater than 5 suggests depression.

**Sources:**

| Resident Pseudonym | Group     | A pre  | A post | B pre  | B post | C pre  | C post | D pre  | D post | E pre  | E post | F pre  | F post | G pre  | G post | H pre  | H post | I pre  | I post | Individual Totals |
|-------------------|-----------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------------------|
| Marjorie H.       | Control   | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0     |
| Helen B.          | Control   | 1      | 0      | 1      | 2      | 0      | 1      | 0      | 2      | 0      | 1      | 1      | 1      | 2      | 0      | 0      | 0      | 0      | 5     |
| Peter M.          | Control   | 1      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 1     |
| Steven H.         | Control   | 1      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 2     |
| Barbara W.        | Control   | 0      | 2      | 0      | 0      | 0      | 0      | 0      | 2      | 0      | 0      | 0      | 2      | 0      | 0      | 0      | 0      | 0      | 2     |
| Agnes K.          | Control   | 2      | 0      | 1      | 0      | 2      | 0      | 3      | 1      | 0      | 0      | 1      | 0      | 1      | 1      | 0      | 1      | 0      | 7     |
| Lewis O.          | Control   | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 1     |
| Nora D.           | Control   | 0      | 1      | 2      | 2      | 0      | 0      | 2      | 0      | 3      | 1      | 2      | 3      | 1      | 1      | 0      | 1      | 1      | 6     |
| Garnet D.         | Control   | 0      | 0      | 0      | 1      | 1      | 2      | 0      | 1      | 1      | 0      | 0      | 3      | 0      | 0      | 0      | 0      | 0      | 1     |
| Stewart S.        | Experimental | 1    | 0      | 0      | 0      | 1      | 0      | 1      | 0      | 0      | 0      | 0      | 1      | 0      | 1      | 0      | 0      | 0      | 5     |
| John L.           | Experimental | 0    | 0      | 0      | 0      | 3      | 0      | 1      | 0      | 1      | 0      | 0      | 0      | 3      | 0      | 0      | 0      | 0      | 4     |
| Henry W.          | Experimental | 0    | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 1      | 0      | 0      | 0      | 0      | 0      | 0      | 0     |
| David M.          | Experimental | 0    | 0      | 0      | 0      | 0      | 0      | 0      | 1      | 1      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 1     |
| Frances T.        | Experimental | 0    | 0      | 0      | 0      | 1      | 1      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 1     |
| Mildred C.        | Experimental | 0    | 2      | 1      | 3      | 0      | 0      | 1      | 2      | 0      | 0      | 1      | 3      | 0      | 0      | 0      | 0      | 0      | 3     |
| Betty R.          | Experimental | 0    | 0      | 1      | 0      | 2      | 1      | 2      | 1      | 0      | 0      | 0      | 0      | 0      | 1      | 3      | 1      | 0      | 4     |
| Esther A.         | Experimental | 0    | 0      | 0      | 0      | 2      | 0      | 1      | 0      | 2      | 1      | 1      | 0      | 0      | 1      | 0      | 3      | 0      | 1     |

**APPENDIX D**

**MDS INDIVIDUAL ANALYSIS**
Recruiting Script:

Hi, my name is (name of Activity Assistant or Advisor) and I am assisting a graduate student at Bowling Green State University who is pursuing a graduate degree in Gerontology and this is her beagle, Gertie. We are currently inviting residents of Bowling Green Care Center to participate in an animal-assisted activity study that we are conducting. Some examples of animal-assisted activities include reading, music programs and grooming activities. We want to discover the benefits of animal-assisted activities on the quality of life for long-term care residents. The study includes participating in group activities with Gertie. Would you be interested in participating?
Informed Consent for Residents of Bowling Green Care Center

The Power of Paws: The Psychosocial Benefits of Animal-Assisted Activities on the Quality of Life for Long-Term Care Residents.

Introduction: Hello. My name is Jessica Miller-Blakely and I am a graduate student at Bowling Green State University. I am pursuing a graduate degree in Gerontology (the study of older adults). I am also the Administrator of Bowling Green Care Center. My advisor is Dr. Nancy Orel, Associate Professor and Director of Bowling Green State University’s Gerontology program. My research topic is determining the psychosocial benefits of animal-assisted activities for long-term care residents. As a resident of Bowling Green Care Center, I am inviting you to participate in this study.

Purpose: The purpose of this research is to determine if animal-assisted activities provide benefits and improve the quality of life of residents. Examples of benefits are increased social interaction, a better mood and decreased loneliness and depression.

Procedure: Before the animal-assisted activities start, you will be given two tests. One measures changes in mood and the other measures changes in depression. You will be given the same tests, again, at the end of the study. I am inviting you to participate in two 60-minute activity sessions a week. The activity sessions will last for a period of six weeks. During these sessions, the first 30 minutes of activity time will be spent with Gertie, who is my dog. Gertie has been visiting the facility and residents of Bowling Green Care Center for over two years. Examples of activities you will do with Gertie are brushing and playing with her. The rest of time in the activity will be spent doing things such as art, music or
games. Gertie will be in the room, but she won’t be in activity with you. All of the activities will be provided by the activity staff.

**Voluntary nature:** Your participation is completely voluntary. You do not have to volunteer and if you do, you are free to withdraw from the study at any time. You may stop your participation in the animal activity sessions at any time, without penalty. If you decide to participate or not to participate, your decision will not affect your relationship with Bowling Green Care Center or Bowling Green State University in any way.

**Confidentiality/Anonymity Protection:** All data, or information about you, that will be collected will be stored in agreement with HIPAA regulations. This is currently the process at Bowling Green Care Center. The information used is part of your resident medical record, which will be kept and stored for seven years, in compliance with state and federal guidelines. Written data can only be identified by your resident medical record number and the information will be stored in your locked resident medical file. Electronic data will be stored online with password-protected computers and with programs to maintain confidentiality. Consent forms will also be stored with the medical record information, to comply with state regulations for research participation.

**Risks:** All participation and interaction with animals will be supervised. The risk of participation is no greater than what you do every day. If you have allergies to animals and still want to participate, please let me know and we can discuss if the medical director of the facility feels it is safe for you to participate. I have never noticed Gertie to be a potential harm to anyone, but should I notice any unusual behaviors, I will immediately remove Gertie from the activity and will replace her with a different dog for the rest of the study.

**Contact information:** If you have any questions about the research or participating in this study, please contact me - Jessica Miller-Blakely,
Principal Investigator (PI) at jcmille@bgsu.edu or 419-575-9125, or Dr. Nancy Orel, advisor, at norel@bgsu.edu or 419-372-7768. Participants may also contact the Chair, Human Subjects Research Board at 419-372-7716 or hsrb@bgsu.edu, if you have any questions about your rights as a participant in this research. Thank you for your time.

HIPAA Requirements: The purpose of using this data is to examine the results to see what, if any, psychosocial benefits and quality of life indicators they have. The tests used to gather this data are found in your resident’s medical record. Medical record numbers will be the only way a resident can be identified in this research. Your name will not be associated with the medical record number for the purpose of this research. Your protected health information (PHI) will be made known to the PI by the resident assessment nurse and the licensed social worker of Bowling Green Care Center. The disclosed PHI will only be examined by the PI. The expiration date for the use of the disclosed PHI is upon completion of the research study.

You have the right to withdraw this authorization at any time. This withdrawal must be written in a document, by you, and given to the PI. A copy of your written withdrawal will be given to the HSRB by the PI. You understand that any information provided to the PI, before you withdrew from the study, will no longer be considered PHI.

I have been informed of the purposes, procedures, risks and benefits of this study. I have had the opportunity to have all my questions answered and I have been informed that my participation is completely voluntary. I agree to participate in this research.

________________________     ________________
Participant Signature        Date