THESIS

ANIMAL-ASSISTED THERAPY AS AN INTERVENTION FOR REDUCING

DEPRESSION AMONG LONG-TERM CARE RESIDENTS

Submitted by

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WE HEREBY RECOMMEND THAT THE THESIS PREPARED UNDER OUR

SUPERVISION BY ANGELA CONDIT ENTITLED ANIMAL-ASSISTED

THERAPY AS AN INTERVENTION FOR REDUCING DEPRESSION AMONG

LONG-TERM CARE RESIDENTS BE ACCEPTED AS FULFILLING IN PART

REQUIREMENTS FOR THE DEGREE OF MASTER OF SOCIAL WORK.

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ABSTRACT OF THESIS

ANIMAL-ASSISTED THERAPY AS AN INTERVENTION FOR REDUCING

DEPRESSION AMONG LONG-TERM CARE RESIDENTS

The purpose of this study is to determine the effect of animal-assisted
intervention on reducing depression and loneliness among older adults residing in a
long-term care facility.

Forty-eight residents from one long-term care facility in a northern Colorado
city participated in the study. Subjects who met established criteria completed the 30-
item Geriatric Depression Scale (GDS - 30) and the UCLA Loneliness Scale. The
subjects were randomly distributed into a control or an experimental group. Both
groups received usual care; but the experimental group also received the animal-
assisted intervention for 15 minutes each week for a 12-week period. At the end of the
twelve weeks, both groups were given the GDS-30 and the UCLA Loneliness Scales as
post-tests.

The results of the pre- and post-tests were analyzed using paired samples *t*-tests,
which showed a statistically significant reduction in both depression and loneliness for
the treatment and control groups. To determine if there were differences between
groups, independent samples *t*-tests using gain scores were conducted. There were no

statistically significant differences between the experimental and control groups on the depression and loneliness measures.

The findings show that animal-assisted activity (AAA) intervention is associated with decreased levels of depression and loneliness among the elderly in long-term care facilities who choose to participate in AAA.

Implications for social work practice and future research were identified.

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This research project is a combination of my passion for a higher quality of life for older adults and my love for animals. This process has been fulfilling and a time for tremendous personal and professional growth. As the first generation in a family of Italian immigrants to obtain a higher education, I feel blessed to have had the opportunity to attend both undergraduate and graduate school. I support the value of education that I strive to instill in my daughter, as well as being a role model for my family.

I would like to thank Columbine Health Systems for their generous gift that supported my continuing education working with older adults, and Gail Cotton for her donation to the Mental Health Advocates scholarship supporting my education in working with older adults with mental illness.

I thank God for the knowledge, ability, strength, and opportunity to attend school and complete this project. To my daughter Michaela and mother Lois, thank you both for your love and support through this process. To my advisor and committee, thank you for your guidance.

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Introduction

The aging of the population is one of the most far-reaching changes affecting contemporary society (Zarit & Zarit, 1998). The number and proportion of older people in the population has grown substantially, bringing with it concerns about the well-being of older adults (Chaisson-Stewart, 1985). There is a current and growing need for individuals who can provide effective treatments for older people (Chaisson-Stewart, 1985). Effective interventions can ameliorate mental health symptoms among the elderly, improving functioning and psychological well-being (Chaisson-Stewart, 1985).

Depression is one of the leading causes of suffering world-wide (Baldwin, Chiu, Katona & Graham, 2002). In older adults, it is often not recognized or adequately treated (Baldwin et al., 2002). The enormous negative impact of depression in older adults needs to be recognized as a serious, disabling condition, and practice interventions initiated (Baldwin et al., 2002).

Fortunately, well-conceived interventions can make a difference for many older people (Chaisson-Stewart, 1985). For disorders such as depression, response to treatment may be as good for older adults as it is for younger people (Chaisson-Stewart,

1985). With appropriate interventions, quality of life can be improved for an older person with depression (Baldwin et al., 2002).

<div align="center">Depression in the Elderly Population</div>

Depression has long been seen as a defining characteristic of old age (Zarit & Zarit, 1998). Multiple factors combine to make the years past 65 especially difficult (Katz & Parmalee, 1997). Older adults are excluded from positions of influence and importance in society, have fears of impending death, and experience declining health (Zarit & Zarit, 1998). Getting older is characterized by various losses: physiological losses due to sickness and functional disabilities; sociological losses including retirement from work and loss of social and family networks; personal losses such as a reduced sense of control over one's life, diminished self-esteem, and increased difficulty when dealing with stress (Katz & Parmalee, 1997). These losses can create a dependence on others as well as a subjective sense of loneliness (Ron, 2004). Coping with these changes, losses, and their effects can often lead to depression (Zarit & Zarit, 1998).

<div align="center">Types of Depression in Later Life</div>

Depression is one of the most common mental disorders experienced by older adults (Smyer & Qualls, 1999). Depression can be distinguished from normal aging, and often presents with the same symptoms as depression in younger adults (Baldwin et al., 2002). The term depression refers to both symptoms and disorders (Zarit & Zarit, 1998). Depression is often associated with medical illness and

psychosocial reactions (Zarit &Zarit, 1998) and can take many forms in terms of severity, symptoms, and coexisting problems (Karel, Ogland-Hand, & Gatz, 2002). There is a spectrum of depressive illness that varies by intensity and duration, ranging from major depressive disorder to adjustment disorders and bereavement, (Symer & Qualls, 1999) with a higher incidence of mild depressive symptoms presenting in the elderly (Ell, 2006).

Major Depression

Only a small percentage of older adults with depressive symptoms warrant a diagnosis of major depression (Manthorpe & Iliff, 2005). An older person with major depression is severely affected by multiple symptoms (Manthorpe & Iliff, 2005). These symptoms include depressed mood for at least 2 weeks, loss of interest or pleasure in activities, decreased energy, fatigue, loss of self-esteem, excessive guilt, recurrent thoughts of death and/or suicide, difficulty concentrating, changes in psychomotor activity, sleep disturbance, and changes in appetite and weight (Baldwin et al., 2002).

Minor Depression

Minor depression is not classified as a distinct disorder for diagnosis, but is defined as one or more periods of depressive symptoms that are identical to major depressive episodes in duration, but involve fewer symptoms and less impairment (Karel et al., 2002, p. 22). Minor depression is the most common depressive disorder of older persons (Baldwin et al., 2002). In studies of older adults, minor depression is three times more common than major depression (Manthorpe & Iliff, 2005). Minor

depression has the same negative effects as major depression, and is commonly associated with physical illness (Baldwin et al., 2002). It is also common with functional and cognitive impairment, social stressors, and has been linked to later development of major depression (Manthorpe & Iliff, 2005).

Dysthymic Disorder

Dysthymic disorder, also known as dysthymia, is a chronic mood disorder characterized by several symptoms of depression of long duration (Baldwin et al., 2002). A diagnosis requires the persistence of depressed mood and two additional depressive symptoms for a duration lasting more than two years (Karel et al., 2002). Some older adults report lifelong problems with mild depression (Karel et al., 2002) with the onset usually early in adulthood, but recent studies have shown that it may begin later in life (Baldwin et al., 2002). Late-onset dysthymia may result from a loss of self-esteem secondary to diminished control over one's abilities, as well as a reduced sense of purpose and recognition (Karel et al., 2002). Dysthymia is more common among older people, and is a risk factor for the development of major depressive disorder (Baldwin et al., 2002).

Adjustment Disorders

Adjustment disorders are the types of depression that are triggered by a life occurrence (Manthorpe & Iliff, 2005) and are diagnosed when symptoms of low mood, often with anxiety, develop within one month of a major stressful event (Baldwin et al., 2002). Adjustment disorders can be seen as a maladaptive reaction to a life stressor,

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and can present with symptoms of depression and anxiety (Karel et al., 2002). With the

many life stressors that occur in the lives of older adults, it can be difficult to determine

an adjustment disorder from dysthymia and minor depression (Karel et al.,

2002). The symptoms of adjustment disorder are usually not sufficient for a diagnosis

to be made (Baldwin et al., 2002). Adjustment reactions tend to be less problematic

and generally resolve in time, requiring short-term intervention and support (Manthorpe

& Iliff, 2005).

Bereavement

Loss of loved ones is a frequent occurrence for older adults and many

experience normal bereavement reactions that include depressed mood, crying,

difficulty sleeping, change in appetite, and trouble concentrating (Karel et al., 2002).

Bereavement is not considered a disorder unless symptoms persist beyond several

months and become severe or functionally disabling (Karel et al., 2002).

Prevalence

According to the National Institute for Mental Health (NIMH, 2010) depressive

illness is widespread among the general population, affecting 6.7% in any given year,

and is the leading cause of disability in the Unites States for those ages 15-44.

Although they account for only 12% of the U.S. population, people age 65 and older

accounted for 16% of suicide deaths in 2009 (NIMH, 2010).

Depression is the most common psychological disorder among older persons

(Blazer, 2002). Of the 39.6 million Americans age 65 and over, nearly 5 million suffer

from serious and persistent symptoms of depression (Blazer, 2002).   Approximately

5% of elderly living in the community and up to 25% of those residing in long-term

care facilities are believed to experience depressive symptoms (NIMH, 2010).

Depressive illness in late life is a serious public health concern. The clinical and

public health impact of depression on older people is increasingly being recognized

(Katz & Parmalee, 1997). Depression affects physical health, quality of life, and

mortality. It is not a natural part of the aging process and should not be considered

normal. Depression is associated with significant functional disability, and if untreated,

increases the risk of premature death (Blazer, 2002).   It is closely tied with death by

suicide in the elderly population (NIMH, 2010). Despite the high rates of depression

exhibited by this segment of the population few elderly receive treatment (Blazer,

2002).

Depression is under recognized in the elderly population (Alexopoulos, 2004).

This lack of recognition may result from underreported symptoms; uncertainty in

diagnosing; and attributing symptoms to disability, dementia or medical illness

(Alexopoulos, 2004).   Many elderly people are likely to report physical symptoms such

as sleep problems, low energy, decreased appetite, or weight loss (Alexopoulos, 2004).

Because these symptoms often originate from medical disorders, a diagnosis and

treatment for depression may be overlooked (Alexopoulos, 2004).

"Elderly persons have a higher risk for suicide than any other population"

(Saddock & Saddock, 2008, p.25). One out of eight people who commit suicide is 65

years or older, and men who are over age 75 have the highest rate of suicide among any

age group (Manthorpe & Iliffe, 2005). Young old men, age 60-74 who are living in

residential care are more likely than women or old-old men, age 75 and over, to attempt

suicide. Suicidal old-old people, those ages 85 and older, both men and women, engage

in indirect or passive suicide, such as refusing to eat or drink (Barrett & Mosher-

Ashley,

1997).

Institutionalized Elderly

In the industrialized world, the oldest old are the fastest growing segment of the

population (Eisses, Kluiter, Jongenelis, Pot, Beekman, & Ormel, 2004), and will

continue to grow significantly in the future (Office on Aging, 2010). Older adults

represent 12.9% of the U.S. population at 39.6 million in 2010 (Office on Aging, 2010).

The population 65 and over increased from 35 million in 2000 to near 40 million in

2010, a 15% increase, and will grow to 55 million in 2020, a 36% increase (Office on

Aging, 2010).

The increasing number of elderly people in the population will lead to a rise in

the number of nursing home patients. Although the majority of elderly remain in the

community, a substantial number need the support various institutions can provide.

Serious functional impairment due to chronic physical diseases is the most cited reason

for placement in long-term residential care (Eisses et al., 2004). Living in a nursing

home may have a negative effect on the mental health of its residents, because placement is often accompanied by feeling a loss of control over one's life (Ron, 2004).

Depression in Residential Care

Depression in long-term care is recognized as a significant problem by the National Institutes of Health (NIH): "Among the 1.5 million older people living in nursing homes, the prevalence of depression is high" (Luborsky & Riley, 1997, p.64). Among nursing home patients, prevalence rates of depression have been found ranging from 6% to 26% for major depression, 11% to 50% for minor depression, and from 30% to 48% for depressive symptoms (Jongenelis et al., 2004). High rates of depression are commonly reported in residential care (Eisses et al., 2004).

Residents of long-term care facilities with depressive symptoms have a lower quality of life, experience behavioral difficulties, have a higher incidence of psychiatric problems, and perceive the environment in a negative way (Hyer & Hyer, 1984). Because of the multiple losses experienced with aging, the time that passes between the adjustment to one loss and the occurrence of another is limited (Ron, 2004). These contributing factors perpetuate feelings of loneliness, hopelessness, and depression, which can lead to a loss of motivation to continue living (Ron, 2004). Older adults with depression have a burden of illness and disability; reduced levels of social and physical activity; and are at greater risk for committing suicide (Manthorpe & Iliffe, 2005).

Risk Factors for Depression in Residential Care

Depression has been associated with many different influences (Zarit & Zarit, 1998). Biological, psychological, and social processes occur at the same time, with complex interactions between them (Zarit & Zarit, 1998).   The risk of depression is increased by female gender, history of depression, poor social supports, loss of loved ones, nursing home admission and medical conditions (Alexopoulos, 2004). Depression and physical illness are often associated, along with psychosocial indicators and level of social support (Rinfrette, 2009).

Medical Co-morbidity

Physical illness and disability are major risk factors for depression among the elderly (Ell, 2006) along with cognitive deficits and declining functional status with limitations (Jongenalis et al., 2004). The relationship between depression in the elderly and medical illness is complex (Alexopoulos, 2004). Depression often occurs in older adults who have significant medical problems, worsening the outcome of medical illness and increasing mortality (Alexopoulos, 2004).   Co-morbidity of depression with other medical diseases in the elderly is common (Ell, 2006) and medical illness increases the risk of suicide among the elderly (Ell, 2006). Some physical disorders may predispose an individual to or be the direct cause for depression, including stroke, Parkinson's disease, heart attack and disease, chronic lung disease, and cancer (Baldwin et al., 2002).

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Psychosocial Indicators

Stressful live events have long been considered as a precipitant for depressive episodes (Zarit & Zarit, 1998). A high number of stressful life events have been related to depression in studies of older adults (Zarit & Zarit, 1998). Specific losses linked with aging, such as such as retirement, loss of friends, and death of a spouse, can be very stressful and lead to depression (Zarit & Zarit, 1998). In a large sample of adults over 70 years of age, bereavement due to loss of spouse was associated with a nine-fold increase in depressive symptoms (Baldwin et al., 2002).

Elderly who are institutionalized have experienced multiple stressful events and dramatic environmental changes in their transition from the community to the nursing home (Zarit & Zarit, 1998). This transition is often characterized by the loss of loved ones, reduced ability to care for self, and the loss of opportunities to engage in activities previously enjoyed (Struckus, 1989). In addition, there may be sensory impairments that reduce the ability of the older person to enjoy sights, sounds, smells, and tastes that were previously positive reinforcements (Struckus, 1989). All these losses are associated with a reduction in the amount of potentially reinforcing events (Struckus 1989). In addition, the individual may suffer from the pain of a degenerative disease, making withdrawal from the environment understandable following the transition from community to institution. (Struckus, 1989).

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Social Support

A lack of social support and loneliness are both significantly associated with depressive symptoms (Eisses et al., 2006). The social support an individual has available is an important factor in the coping process and may assist in protecting a person from the consequences that follow a life event (Chaisson-Stewart, 1985). Social support is an important factor in preventing both the onset and progression of depression in later life (Blazer, 2005). Social isolation and impaired social support have been found to be associated with both moderate and severe depressive symptoms (Blazer, 2005).

Risk factors associated with the onset of depression indicate that socially isolated residents are in greater jeopardy (Eisses et al., 2006). The risk of depression in institutionalized individuals is much higher, especially for those who have no family support system (Chaisson-Stewart, 1985). Social support and the availability of a confiding relationship has been shown to offset the negative effects of disabling conditions (Baldwin et al., 2002). The attachments that constitute this support system can include not just family members and friends, but animals as well (Chaisson-Stewart, 1985).

Interventions

Depression can be explained by many factors. Attending to the biological, psychological, and social factors that affect geriatric depression allows for a multitude of interventions – medication, psychotherapy, and other treatments (Karel et al., 2002).

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The approach to treatment should be customized depending on personal history, medical problems, individual preferences, as well as the nature and depth of the depression (Manthorpe & Iliffe, 2005). Three dominant methods for treating depression in the elderly are identified as medications, psychotherapy, and psychosocial support (Manthorpe & Iliffe, 2005). These interventions are not mutually exclusive, and evidence has shown that a combination can work better than any one intervention alone (Manthorpe & Iliffe, 2005).

Pharmacotherapy

Pharmacotherapy is very useful in the treatment of depression. Treatment studies have shown the safety of anti-depressant medication among older adults (Ell, 2006). Evidence based research supports the effectiveness of pharmacological treatment for depression in older adults (Alexopoulos, 2004). Antidepressants have shown a positive response, with at least 50% reduction in depressive symptoms in randomized, controlled trials (Alexopoulos, 2004). The four families of antidepressants used for treatment of geriatric depression include Selective Serotonin Reuptake Inhibitors (SSRIs), tricyclic antidepressants (TCA), monoamine oxidate inhibitors (MAIOS), and atypical antidepressants (Alexopoulos, 2004). The most serious drawbacks to the use of medications in the elderly are the diminished ability to physiologically process medications, as well as the risk for adverse side effects and interactions (Alexopoulos, 2004).

Psychotherapy

There is growing evidence that psychotherapy, alone or with antidepressant treatment, is effective for older adults with depression (Ell, 2006). Cognitive-behavior therapy is the most tested psychotherapy used with older adults who have depression (Smyer & Qualls, 1999), and has established efficacy through evidence-based research as a treatment for geriatric depression (Alexopoulos, 2004). In this type of therapy, work is focused on altering the cognitive frameworks to eliminate dysfunctional, depressive thought patterns. Cognitive techniques can be utilized that help residents identify dysfunctional thoughts contributing to depression, and to change behavior patterns to include an increase in positive environmental reinforcements (Smyer & Qualls, 1999).

Psychosocial Supports

There are multiple alternative psychosocial approaches that have been shown to have a positive impact on reducing depressive symptoms in older adults. The variety of approaches are increasing and studies being conducted are showing evidence of effectiveness with the use of reminiscence therapy, role replacement, and animal-assisted therapy (Barrett & Mosher-Ashley, 1997).

Older adults who are having difficulty coping with mortality may benefit from reminiscence therapy (Barrett & Mosher-Ashley, 1997). Benefits of reminiscence therapy include improved ability to cope with aging and death and improved self-concept (Barrett & Mosher-Ashley, 1997). By sharing recollections with someone

willing to listen, older adults can recall past pleasures and accomplishments, providing them with a sense of meaning and purpose (Barrett & Mosher-Ashley, 1997).

Some elderly have reported problems coping with feelings of emptiness that accompany a loss of work role (Barrett & Mosher-Ashley, 1997). Role replacement strategies may help in overcoming feelings associated with diminished productivity (Barrett & Mosher-Ashley, 1997). Feelings of sadness, one of the symptoms most commonly reported, may be improved through engagement with others through music, art, and reading programs (Barrett & Mosher-Ashley, 1997). Participation in any of these activities increases the frequency of positive, pleasurable events (Lobitz & Post, 1997) that can decrease symptoms of depression (Barrett & Mosher-Ashley, 1997).

One therapy that has had a surprisingly restorative effect on depressed and lonely older people is animal-assisted therapy (Barrett & Mosher-Ashley, 1997). Research from a study completed in Colorado indicated a positive influence of animals on social interactions among nursing home residents, suggesting that animal-assisted therapy (AAT) is an effective means to increase socialization, decrease loneliness, depression, and stress, and improve health and life satisfaction in residents of long-term care facilities (Schren, 2001).

<div align="center">Objectives of this Study</div>

The increasing number of older adults in the population will lead to an increase in the number of individuals living in residential care (Jongenelis et al., 2004). Further studies on depression in the institutionalized elderly, as well as the development of

adequate prevention and treatment strategies are of upmost importance. Nursing homes present a challenge for residents and staff regarding how to cope effectively with a combination of physical and mental health problems (Smyer & Qualls, 1999).

Several studies suggest that forming a relationship with an animal in the course of an animal-assisted therapy program can lead to many of the benefits associated with receiving social support (Collis & McNicholas, 1996). Contact with a therapy animal has also been demonstrated to reduce loneliness in elderly residents of long-term care facilities (Collis & McNicholas, 1996). The role of an animal in facilitating social interactions between people is widely supported by research (Collis & McNicholas, 1996). Visiting animal programs have been found to stimulate greater initiation of social interactions among residents of long-term care facilities (Collis & McNicholas, 1996).

There are numerous social benefits animals provide that have been observed, including companionship for withdrawn and isolated people, increased socialization, as well as decreased depression, anxiety and loneliness (Kogan, 2000). Relationships between animals and older persons are powerful, and intimacy is often immediately achieved (Kogan, 2000). In one study, 10.3% of respondents that moved to a nursing home stated they missed their pets more than any other possessions (Kogan, 2000). "Human-animal interactions can help long-term residential patients maximize functional abilities and enhance overall quality of life" (Kogan, 2000, p. 33).

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There is limited empirical evidence to support the tremendous value in utilizing animal-assisted interventions with long-term care residents. More research is needed to examine the specifics of practice of these interventions to improve techniques and expand use. Large-scale, well-funded studies of the positive impact of utilizing animals with the elderly are still lacking (Schren, 2001).

Developing adequate prevention and treatment strategies to treat depression in institutionalized elderly is obviously of great importance, with special attention and care focused on psychosocial factors such as loneliness and lack of social support (Jongenelis et al., 2004). With the enormous number of people involved, there is a need for further research to develop intervention strategies for depression that are specifically tailored to meet the needs of the nursing home population (Jongenelis et al., 2004). The purpose of this study is to increase knowledge about the efficacy of animal-assisted interventions for reducing depression and decreasing loneliness among elderly persons who live in long-term care facilities.

CHAPTER TWO: LITERATURE REVIEW PART A
ANIMAL-ASSISTED INTERVENTIONS

Origins

Throughout history, many types of domestic animals have engaged in

significant therapeutic roles (Pichot & Coulter, 2007). The documented treatment of

mental and emotional disturbances using animals can be traced back to the late 18th

century. The York Retreat, founded by Quaker William Tike, utilized moral methods

during a time when hospitals and asylums used restraint and physical punishment as

forms of treatment (Knapp, 1998). Tike's patients were offered kindness and

understanding and were given positive reinforcement for attempts at self-control. The

Retreat kept a significant number of small animals, including rabbits and poultry, and

the patients were encouraged to learn and maintain self-control by caring for the

animals (Struckus, 1989).

Florence Nightingale has been credited as the first known clinician to study

animals in health care settings (Pichot & Coulter, 2007). She observed that small

companion animals had positive effects for chronically ill patients (Pichot & Coulter,

2007).

Dr. Boris Levinson, American child psychiatrist, coined the phrase pet therapy

in 1964 following observations he made when he began to use his dog Jingles in

therapy sessions (Knapp, 1998).   Since Levinson, pet therapy has been used in many

therapeutic settings. Animals have been shown to improve morale and communication,

bolster self-confidence and self-esteem, and increase quality of life (Struckus, 1989).

In the 1980's, Samuel and Elizabeth Corson and their colleagues were among

the first to examine animal-facilitated therapy in a planned therapeutic manner

(Struckus, 1989).   Conducted in a psychiatric hospital, the subjects were patients who

had failed to respond to traditional therapies (Struckus, 1989). The Corsons utilized

their pet dogs in psychotherapy sessions to facilitate socialization (Struckus, 1989).

Matching the temperament of their dogs to the needs of specific patients, the Corsons

observed the effects of the interactions on the patients (Struckus, 1989).   The patients

took on increased responsibility for the care of the dogs, exhibited an increase in self-

care and socialization (Struckus, 1989).   Some of the withdrawn patients had

accumulated tokens from behavior modification programs, and many chose to spend

the tokens on interacting with the dogs (Struckus, 1989).

Benefits

Human-Animal Bond

Humans have sustained connections and relationship with animals throughout

history (Behling, 1990). It is estimated that animal domestication began at least 10,000

years ago with a dog (Behling, 1990). The relationship between humans and dogs

developed out of the practice of primitive people adopting young wolf cubs as animal

companions (Behling, 1990). This was the beginning of the relationship between humans and dogs or wolves (Behling, 1990).

Studies suggest that when humans began to care for animals, they had increased opportunity to engage in nurturing activities (Behling, 1990). Humans benefited from the practical value of animals and the pleasure and physical rewards of caring for them (Behling, 1990). The psychological importance of animals as companions has increased over the past one hundred years (Behling, 1990).

There exists much literature to support the value and benefits of keeping animals as pets (Behling, 1990). The most often reported benefit of pet ownership is companionship, as animals fulfill needs for affection and association (Behling, 1990). Animals serve as a very positive and fulfilling aspect in the lives of many people. Serpell (1987) who has studied the human-animal bond in many cultures summarized the relationship, "the keeping of animals as companions is clearly not essential to human survival. We can live without it, just as we can live without singing, dancing, music, art, laughter, and friendship. Yet the fact that so many people in so many different cultures are motivated to engage in these inessential activities strongly suggests that the rewards are far from negligible" (Behling, 1990, p. 14).

Physical Health

The many health benefits resulting from the presence of animals have been documented in research (Pichot & Coulter, 2007). Studies suggest there are physical benefits derived from interaction with animals (Behling, 1990). A decrease in anxiety

and stress have are frequently observed when animals are present (Pichot & Coulter, 2007). Several studies have been conducted on the impact on blood pressure in the presence of animals. These studies tend to demonstrate that blood pressure is significantly lower when a dog is present (Pichot & Coulter, 2007). In one study, although there was no interaction with the animal, the dog's mere presence in the room resulted in the same health benefit (Pichot & Coulter, 2007). The researchers concluded that the presence of the animal changed the participants' perception of the setting, resulting in decreased anxiety and blood pressure (Pichot & Coulter, 2007).

Emotional Health

Many people own pets for the social and mental health benefits they provide (Pichot & Coulter, 2007). Companionship is the most cited reason, leading to decreased loneliness (Pichot & Coulter, 2007). Animals can relieve anxiety and provide emotional support, as well as a sense of being needed (Behling, 1990). People have special relationships with animals that differ significantly from those with humans. Animals accept without judgment, showing love and affection unconditionally, making relationship with animals less stressful than those with people (Pichot & Coulter, 2007).

Interventions in Professional Healthcare Settings

There are three methods for using animals in a professional setting: resident animals, animal-assisted activities, and animal-assisted therapy. These animal-assisted interventions can be utilized in a variety of healthcare settings with differing populations including children, disabled, and the elderly.

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Resident Animals

A variety of animals can be placed for residence in long-term care facilities, the most common being dogs, cats, rabbits, birds, and fish. Although adoption of pets in long-term care facilities is not common, with proper accommodations and cooperation of staff it is feasible, and has been shown to be successful in reducing depression among residents (Barrett & Mosher-Ashley, 1997).

The success of a resident animal program in a long-term care facility depends on careful planning prior to animal residency (Baun, Johns, & McCabe, 2006). The elderly residents can do the majority of care for the animal with supervision from staff members. The potential for allergies among residents and staff is another important consideration (Baun et al., 2006).

The presence of animals in a nursing home where one does not ordinarily expect to see them provides a sense of warmth and a home-like environment, making the facility appear less institutional (Barrett & Mosher-Ashley, 1997). The animals can be structured into therapy programs, or mingle freely among the residents (Barrett & Mosher-Ashley, 1997). Pets provide a source of affectionate physical contact that often can be lacking in an institutional setting (Barrett & Mosher-Ashley, 1997).

Animal-Assisted Activities

Animal-assisted activities (AAA) are designed to improve quality of life through the use of the human-animal bond (Gammonley, Howie, Kirwin, Zapf, Frye, Gremman, & Stuart, 1997). AAA provides opportunities for motivational, educational,

and recreational benefits (Kruger & Serpell, 2004).   AAA is a broad category of activities that can be repeated from one person to another, with no specified treatment goal or required documentation (Kruger & Serpell, 2004). AAA can be provided in a variety of environments by trained professionals, paraprofessionals, or volunteers that meet pre-determined criteria (Gammonley et al., 1997).

A common form of AAA intervention is having dog and handler teams visit with patients in hospitals or residents in nursing homes (Coulter & Pichot, 2007). The team moves from person to person, allowing the opportunity for each to spend time interacting with both animal and handler. The handler is usually a volunteer, and both handler and animal must have completed some type of formalized screening to evaluate safety and skill (Coulter & Pichot, 2007). Although there are no specific treatment goals for individuals participating in AAA, there are expected positive benefits (Kruger & Serpell, 2004) that include increased socialization, increased activity involvement, promotion of a comfortable environment, positive distraction, and improved staff morale (Coulter & Pichot, 2007).

Animal-Assisted Therapy

A clear distinction is made between therapeutic treatment and the recreational use of animals (Kruger & Serpell, 2004). Animal- Assisted Therapy (AAT) is defined as treatment and Animal-Assisted Activities (AAA) as recreation (Kruger & Serpell, 2004). Animal-Assisted Therapy (AAT) involves a professional who uses an animal as

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part of his or her job (Pichot & Coulter, 2007) in goal-directed interventions as an integral part of the treatment process (Gammonley et al., 1997).

AAT is directed and/or delivered by the professional with specialized expertise and within the scope of practice (Kruger & Serpell, 2004). Specified goals and objectives are identified for each participant and progress toward the goal is measured (Kruger & Serpell, 2004). AAT is designed to promote improvement in physical, social, emotional, and/or cognitive functioning (Coulter & Pichot, 2007).   AAT is provided in a variety of settings such as mental health, education, residential, and correctional facilities, and may be delivered to an individual or a group (Gammonley, et al., 1997).

CHAPTER TWO: LITERATURE REVIEW PART B
ANIMAL-ASSISTED INTERVENTIONS WITH INSTITUTIONALIZED ELDERLY

Background

A strong positive relationship has been demonstrated between older persons'
health and the presence of an animal (Knapp, 1998). In a 1981 study in Melbourne,
Australia, the first formal animal therapy program was evaluated to determine the
influence of animals on morale and happiness among nursing home residents (Knapp,
1998). Sixty residents who had contact with the animal were rated as happier, more
alert and responsive (Knapp, 1998). They smiled and laughed more often, and
displayed more optimism about life (Knapp, 1998). The control group that had no
contact with the animals were less relaxed, more withdrawn and showed less interest in
others (Knapp, 1998). Recent research from a study completed in Colorado indicated a
positive influence of animals on social interactions among nursing home residents
(Schren, 2001).

There is a growing body of literature documenting the successful use of animals
for therapy with institutionalized elderly. A comprehensive review of the literature
related to the use of animal-assisted interventions (AAI) with institutionalized elderly
identified studies that examined the use of AAI in addressing socialization, loneliness,
and depression. The literature reviewed supports the use of animal-assisted

interventions as a method for improving the quality of life for older adults. Evidence

suggests that animal-assisted interventions are an effective means to increase

socialization, decrease loneliness, depression, and stress, and improve health and life

satisfaction in residents of

long-term care facilities (Schren, 2001).

<center>Animal-Assisted Interventions in Residential Care</center>

<center>*Socialization*</center>

In a study conducted by Frances, Turner & Johnson (1985), the effects of the

presence and absence of a dog in a group setting was evaluated. The study found that a

significant increase in person-to-person interactions occurred with the presence of the

dog, as compared to a control group who did not have visits with a dog. Reported

loneliness, often a cause of depression among the elderly, was lower in the presence of

an animal.

The study conducted by Frances et al., (1985) used a pretest-posttest design and

administered the Observed Patient Behavior Scale, Psychosocial Function Scale,

Geriatric Rating Scale, and Beck Depression Inventory to 21 residents. Following

completion of the pretests, the residents were given the intervention; every Wednesday

afternoon for 8 weeks, six puppies were brought to two residential homes. The residents

were gathered in a large foyer, and puppies were handed to the residents or placed on

the floor. Following the eight weeks, a posttest was administered to all of the residents.

Analysis of the data revealed statistically significant differences in the experimental

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group with social interaction *(p < 0.001)*, psychosocial function *(p = .003)*, life

satisfaction *(p= 0.004)*, mental function *(p < 0.005)*, and depression *(p = 0.011)*

(Frances et al., 1985).

Pet Facilitated Therapy (PFT) has been used with several populations, including

nursing home residents. Studies have reported positive social behavior changes as a

result of PFT intervention. Perelle and Granville (1990) completed a study of a PFT

program in a nursing home setting. Subjects for the study were 53 self-selected

residents of a nursing home. The intervention was given for ten weeks, and consisted of

weekly visits of one to two hours with four cats, two small dogs, and one rabbit.

Residents were assembled in a common area and were provided the opportunity to pet

and handle the animals. The Patient Social Behavior Scale was administered to the

residents pretest, midpoint, and posttest. Scores showed significant increases in social

behaviors from pretest to midpoint and midpoint to posttest *(p < .001)*. According to

Perelle and Granville (1990), the results of statistical tests indicated an immediate

positive change in behaviors, suggesting the introduction of visiting animals into the

nursing home did facilitate an improvement in residents' social behaviors.

An important goal of activities in long-term care facilities is to provide social

stimulation to the residents. The goal of these activity programs is to decrease

isolation, stimulate and maintain mental abilities, and increase social stimulation. A

qualitative study was undertaken by Bernstein, Friedmann and Malaspina, (2000) to

compare the effectiveness of animal-assisted therapy (AAT) with other therapies at providing opportunities for social interaction.

Thirty-three residents participated in the ten-week study conducted in two facilities. A behavioral observation approach was used to compare residents on two aspects of social interaction, conversation and touch, during animal-assisted and other activities. Activities in both facilities were similar. Volunteers from the local animal shelter brought kittens, puppies, cats and dogs into a large central area of each home for 1-2 hours, once per week. Other therapies included sewing, arts and crafts, and bingo. Results indicated that neither animal-assisted nor other therapies resulted in changes in stimulating touch. There were low rates of conversation during the AAT. However, there were high rates of long conversation between residents after AAT, suggesting that the animals may have served as facilitators for social interaction (Bernstein, Friedmann & Malaspina, 2000).

Few studies have reported the effects of therapeutic recreation programs in nursing homes that utilize animal-assisted therapy (AAT). A pilot study was conducted by Richeson (2003) to determine the effectiveness of AAT as a therapeutic recreation for increasing social interaction in older adults. The nine-week study was conducted in two nursing homes with a sample size of 17 residents. The AAT flow sheet, an evidence-based data collection tool used to determine if participants' social interactions increase after interactions with the therapy dog, was completed daily for each resident. The AAT intervention was conducted for three weeks, Monday through Friday, for one

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hour each day. The participants were placed in a group room and were seated in a

circle. Participants could play with the dog, feed it treats, talk to it, brush it, reminisce,

and talk to the handler and staff.   The data analysis of the nine-item AAT flow sheet

showed a significant difference between the first and last weeks of the intervention ($p =$

.009) indicating social interaction increased significantly (Richeson, 2003).

<center>*Loneliness*</center>

Yates (1986) reported on a study completed one year after the program was

initiated. Administrators of participating facilities and the program volunteers were

mailed a survey, with 58 usable responses being received, representing 83%. The

respondents were asked to comment on the program, visits, problems or successes, and

the perceived benefits of the program for the residents. Reports from both

administrators and volunteers suggested that many residents who participated in the

program whom had been withdrawn, depressed, or antisocial, were exhibiting positive

changes. For example, the participants were becoming active in group social activities

and seeking out friends. Residents who had never spoken began engaging in

conversation, and those who had been physically inactive were making efforts to reach

out and pet the visiting animals (Yates, 1986).

According to Neer, Dorn, & Grayson (1987), animal facilitated therapy is a

professionally structured human-animal interaction with potential benefits to people in

various populations, including elderly persons in residential homes or nursing care

centers. Geriatric health care is more than providing direct medical services, and

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requires an understanding of loneliness and isolation. Neer, et al. (1987) believes that

the use of animals shows great potential for improving the emotional needs of older

persons. In a study conducted by Neer et al. (1987) the researchers hypothesized that

dog interaction with institutionalized geriatric residents would have a positive effect on

socialization.

A study of 66 residents in two long-term care facilities receiving animal-assisted

intervention was conducted (Neer et al., 1987). Residents were randomly assigned to

sessions with dog activity and sessions with other activity in a crossover design. The

quantitative study involved a 12-week restudy activity period and two 12-week activity

periods, one before and one after crossover. Two dogs were used as independent

variables for interaction with the residents, with dependent measures being attendance,

blood pressures, psychological evaluation for depression, and use of medications. The

results of the study found that compared to control group participants, the experimental

group attendance was significantly higher at dog activity sessions ($p < .01$) and blood

pressures were significantly lower ($p = .02$); and, although not statistically significant,

depression scores also decreased. There was no distinguishable pattern in use of

medications for either treatment or control groups (Neer et al., 1987).

Persons residing in long-term care facilities often feel lonely and isolated. Some

of the negative effects of institutional living have been alleviated by animal-assisted

therapy programs (Fick, 1992). The relationship between companion animals and the

elderly have been shown to have positive effects on physical and mental health, as well

as social interaction with others. A study was conducted by Fick (1992) to determine

the effect of animal-assisted therapy on social interactions among nursing home

residents in a group setting.

The sample consisted of 36 residents of a long-term Veterans Affairs home that

were observed during weekly group therapy sessions that lasted for a period of four

weeks. Two of the sessions included a dog, and two did not. Point sampling was used to

2record the frequency of social and nonsocial behaviors of attentive listening, no

attentive listening, and verbal person interactions, both with and without the dog during

the group session. Results indicated no significant difference in non-attentive or

attentive listening. There was a significant increase in verbal interactions at the ($p <$

.05) level between participants with the presence of a dog ($p = 0.030$), suggesting that

the dog provided a comfortable environment that facilitated social interactions within

the group (Fick, 1992).

Banks and Banks (2002) completed research on the claim that animal-assisted

therapy (AAT) has a variety of benefits. They conducted their study with residents in

long-term care facilities to determine if AAT could objectively improve loneliness.

They completed a quantitative study utilizing a pretest-posttest control group.

Residents were randomly distributed into three groups consisting of 15 residents each:

the control group (no AAT), AAT-1 (one 30-minute session of AAT/week), and

AAT-3 (three 30-minute sessions of AAT/week).

The intervention, animal-assisted therapy (AAT), consisted of bringing a dog into the long-term care facilities that were then received by participants for 0, 1, or 3 sessions per week. A pet attendant accompanied the dog during the session, but did not interact with either the dog or the resident during the AAT session. The intervention took place in the individual's room of the long-term care facility, although walking the pet in the facility's hallway was also allowed. The resident was allowed to fully interact with the pet, holding, stroking, grooming, walking, talking to, and playing with the animal. The same animal was used for the same resident for a period of 6 weeks. The results of the study showed that AAT reduced loneliness in a statistically significant manner. The ANCOVA was significant, showing that there were statistically significant differences between the control group and the two AAT groups. There was no statistically significant difference between the 1 and 3 AAT sessions per week groups. Even one session of 30 minutes per week was effective in reducing loneliness to a statistically significant degree ($p = .001$). AAT can effectively reduce the loneliness of residents in long-term care facilities who wish to receive such therapy (Banks & Banks, 2002).

Depression

Robinson, Fenwick, and Blackshaw (1996) reviewed studies done by Andrysco (1982) that suggested a pet in a nursing home might provide relief from feelings of loneliness, depression, and boredom. In addition, they stated that Fogle (1981) believed animals could decrease anxiety, loneliness and depression. They cite the work of

Brickel (1984) who addressed the problem of depression in nursing homes by evaluating the effects of animal assisted therapy using psychological tests. Brickel's study showed there were significant treatment effects between groups on depression scores after implementation of an animal program, and the group involved with the animal showed increased social interaction.

The quantitative study completed by Robinson et al. (1996) was designed to assess whether tension, depression, anger, vigor, fatigue, and confusion scores of elderly nursing home residents were influenced by contact with animals, as measured by the Profile of Mood States (POMS). Three nursing homes were selected for the study, and the subjects were 95 elderly residents of the homes. They were subjected to a resident dog, a visiting dog, or no dog at any time. The POMS was used to assess changes in mood states throughout the study. The results indicate that tension decreased significantly with the resident dog, and there was a trend for reduced tension with the visiting dog although not significant. Depression and anger scores decreased significantly for the resident dog and again a non-significant trend for reduced depression was seen with the visiting dog group. All residents showed an increase in vigor scores and decreased fatigue and a trend for lower levels of confusion (Robinson et al., 1996).

According to Struckus (1989), the field of pet-facilitated therapy would benefit from an evaluation of treatment addressing depression. He conducted a study to test the

hypothesis that patients in a nursing home would report less depression, exhibit fewer depressed behaviors, and show an increase in social interaction following participation in a pet visitation program.

A pet visitation program was implemented in a long-term care facility (Struckus, 1989).   Prior to beginning the program, baseline data was collected from all subjects. Instruments used included the Profile of Mood States (POMS), the Geriatric Depression Scale (GDS), and the Geriatric Rating Scale (GRS). Fifty residents comprised the

sample, 25 in the experimental group and 25 in the control group. Participation in the program was voluntary. Two times per week for twelve weeks, volunteers brought their animals to the treatment floor of the facility. The visits consisted of individual visits with the residents lasting approximately twenty minutes. The results of the study supported Struckus's (1989) hypothesis that an animal visitation program could produce significant reductions in depression and increased social interaction in elderly persons living in long-term care. On the GDS and each of the six subscales of the POMS, participants improved significantly from baseline. Results on the GDS were statistically significant ($p < .001$). Control subjects showed no change over the twelve-week (Struckus, 1989).

Summary

Depression is a significant problem experienced by many elderly people, and is especially prevalent among institutionalized elderly. Institutions that provide care to

elderly persons would benefit from treatment that could effectively reduce depression and increase social interaction (Struckus, 1989). Studies to date indicate that animal visitation in nursing homes acts as a catalyst for social interaction among the elderly residents. The animal is something to talk to and something to talk about, a topic of conversation that is of interest to everyone. The animal promotes conversation and is a common bond, facilitating social interaction and encouraging new friendships.

The studies reviewed show that animal-assisted activity interventions are a simplistic, inexpensive treatment modality, something long-term institutions could implement almost immediately, and could significantly improve psychosocial function and quality of life (Cusack & Smith, 1984). Researchers are not surprised by the findings, "It has been fairly well documented that animals are therapeutically effective with various populations" (Cusack & Smith, 1984, p. 51). The effected, measured variable could be improvements in quality of life (Cusack & Smith, 1984).

The literature reviewed substantiates the claim that animal-assisted interventions are a successful therapeutic mode for use with older adults to improve socialization, loneliness, and depression. The literature did not provide recent information on the use of these interventions with older adults. Most of the articles were twenty years old. The terminology in many of the studies did not differentiate AAA from AAT, which is shown to be an important distinction in the recent literature. The studies completed were generally limited to addressing socialization and loneliness.

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This study will add to the body of literature regarding the use of animal-assisted interventions with older adults. It defines and distinguishes the differences between animal-assisted activities and animal-assisted therapy. The study will address the use of animal-assisted activities as intervention for reducing depression and loneliness.

CHAPTER THREE: THEORY

Models for Treating Depression

There are two prevalent theory models on depression, both based in learning theory. The cognitive-behavior model developed by Beck and the reinforcement model based on original work by Skinner that has been further developed by Lewinsohn (Struckus, 1989).

Cognitive-Behavior Theory

Cognitive-behavior theory of depression states that certain cognitive patterns cause people to interpret their experiences in a way that results in depression (Walsh, 2006). These cognitive patterns are thought to be relatively stable characteristics of the person, predisposing them to depressive episodes (Lobitz & Post, 1979). Unique to the individual, learned patterns of evaluating input from the environment assists in explaining individuals' differing responses to external stimuli (Walsh, 2006).

Cognitions include an individual's assumptions, ideas, beliefs, and expectations about the causes of events, perceptions, and attitudes (Walsh, 2006). An individual develops habits of thinking that are the basis for individual screening and coding of input from the environment (Walsh, 2006). These habits, or frameworks, are then used to categorize and evaluate experiences and provide guidance on how to behave in given situations (Walsh, 2006).

Cognitive-behavior theory encompasses emotions that are viewed as physiological responses that follow the cognitive evaluation of environmental input (Walsh, 2006). An environmental event, positive or negative, produces a thought or belief that subsequently produces an emotion and behavior (Walsh, 2006). According to Beck (1976), the characteristics of depression can be explained in cognitive terms. Depression can be seen as an outward expression of a shift in the individual's cognitive organization (Beck 1976). The dominant schema following the shift causes the depressed individual to view self, experiences, and the future in negative ways (Beck, 1976). The negative schema result in the individual ruminating on misinterpreted experiences that leads to other symptoms of depression including sadness, poor self-esteem, guilt, decreased pleasure, and suicidal thoughts (Beck. 1976).

Cognitive-behavior therapy is the most tested theory for use in psychotherapy with older adults who have depression (Smyer & Qualls, 1999), and has established efficacy through evidence-based research as a treatment for geriatric depression (Alexopoulos, 2004). In this type of therapy, work is focused on altering the cognitive frameworks to eliminate dysfunctional, depressive thought patterns. Cognitive techniques can be utilized that help residents identify dysfunctional thoughts contributing to depression, and to change behavior patterns to include an increase in positive environmental reinforcements (Smyer & Qualls, 1999).

Cognitive therapy can be useful in treating depression among residents of long-term care settings (Lobitz & Post, 1979). Cognitive techniques can be utilized that help

residents identify dysfunctional thoughts contributing to depression (Lobitz & Post, 1979). Cognitive therapy could be used in conjunction with psychologist Peter Lewinsohn's (1979) work on reinforcement theory that suggests increasing pleasant events to diminish depression (Lobitz & Post, 1979).

<center>Reinforcement Theory</center>

Reinforcement theories of depression state the importance of person-environment interactions in the development of depression (Lobitz & Post, 1979). Depression can result from too few pleasant and too many negative person-environment interactions. These environmental interactions are guided by the learning laws for normal behavior (Teri, 1991). Lewinsohn (1979) emphasized that changes in the quality and quantity of reinforcement leads to depression (Lobitz & Post, 1979). Specifically, a decrease in the number of positively reinforcing events and an increase in the number of negative events results in increased avoidance behavior and depression (Lewinsohn, et al., 1979).

The reductions in positive reinforcement can be the result of a loss of reinforcement sources, i.e. the loss of a spouse, and/or diminished physical or mental capacity that prevent the individual from participating in previously reinforcing activities (Lobitz & Post, 1979). The result of this imbalance between rewarding and negative events is discomfort, with subsequent withdrawal from the environment, two principal behaviors associated with depression (Lobitz & Post, 1979).

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Reinforcement theory is useful when conceptualizing the depressive behaviors exhibited by older adults living in long-term care facilities. The emphasis of reinforcement theory on the importance of changes in an individual's environment is compatible with the knowledge that institutionalized elderly have experienced dramatic environmental changes in their transition from community to nursing home (Struckus, 1989). This transition is often characterized by removal from home, loss of a spouse, reduced physical ability to care for self, chronic medical conditions, and sensory impairments. These losses can be associated with a reduction in availability of positively reinforcing events, resulting in a withdrawal from the environment. Disengagement with the environment is a strong indicator of depression in older adults.

Reinforcement theory suggests a treatment for institutionalized older adults with depression (Struckus, 1989). Providing a source of positive reinforcement, with the removal of some negative conditions, could relieve the depressive symptoms for some individuals (Lewinsohn et al., 1979). By diminishing the number and intensity of negative events and substituting in their place positive events there is opportunity for disrupting the depressive feelings (Lewinsohn et al., 1979). With an increase in positive reinforcements experienced from interaction with the environment would come a greater interest in having that interaction, increasing the potential to experience reinforcing events (Lewinsohn et al., 1979).

Lewinsohn et al. (1979) suggest a model for depression that includes biological predisposition, psychosocial stressors, and cognitive conditions that maintain

depressive thoughts. This is a combination of genetic inheritance, major life events, and cognitive schemas suggested by Beck (Lewinsohn, et al., 1979). The theory assimilates the cognitive-behavior and reinforcement theory into one integrated model (Lewinsohn, et al., 1979). Applying a reliable source of positive reinforcement with the removal of negative conditions could alter the cognitive pattern by disrupting the negative schema (Struckus, 1989). This increase in positive environmental stimulation would reduce the probability that the individual would withdraw from the environment, preventing the reoccurrence of the negative thought patterns and subsequent depression (Lobitz & Post, 1979).

The effect of animal-assisted interventions on depressive behaviors is consistent with the theoretical conceptualizations presented. Depression has been viewed as a condition resulting from negative thought patterns resulting from a decrease in positively reinforcing events and an increase in aversive events (Struckus, 1989). Treatment for the depressed, institutionalized person involves restructuring the environment to provide a greater number of positive experiences. The participants receiving animal-assisted intervention would most likely find the visits a positive experience. The animal-assisted activity program would increase the number and frequency of positive social interactions, resulting in a decline in social withdrawal with subsequent decrease in depressive symptoms.

CHAPTER FOUR: METHODOLOGY

Research Questions

The purpose of this study is to increase knowledge on the efficacy of animal-assisted activity in reducing depression and decreasing loneliness through socialization with a human-animal team visitation program provided to residents living in long-term care facilities.

Specifically, the study aimed to answer the following research questions:

1. Are there significant differences in level of depressive symptoms and level of loneliness after receiving animal-assisted activity for residents of long-term care facilities?

2. Are there significant differences in level of depressive symptoms between residents of long-term care facilities who receive animal-assisted activity plus usual care and those who receive usual care?

3. Are there significant differences in level of loneliness between residents of long-term care facilities who receive animal-assisted activity plus usual care and those who receive usual care?

The active independent variable in this study is the animal-assisted intervention. There are two levels to the independent variable, the experimental group that received animal-assisted activity plus usual care, and the control group that received usual care.

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The level of depression is the dependent variable for the first and second research questions and was measured by scores on the 30-item Geriatric Depression Scale (GDS-30). Of the 30 items on the GDS-30, a score of 10 or higher indicates the presence of depressive symptoms when answered positively, while the rest (question numbers 1, 5, 7, 11, 13) indicate depressive symptoms when answered negatively. Scores on the GDS-30 range from 0-9 (normal), 10-19 (mild depressive symptoms), and 20 or higher (severe depressive symptoms) (Kurlowicz & Greenburg, 2007).

The dependent variable for the first and third questions is level of loneliness, and was measured by scores on the UCLA-Loneliness Scale. The UCLA-Loneliness Scale is a 10-item questionnaire with scores ranging from 10, never lonely, to 40, always lonely (Russell, 1996).

Design

This quantitative study examined the effects of an animal-assisted intervention provided through the Human Animal Bond in Colorado (HABIC) program on reducing depression in elderly residents of a long-term care facility. An experimental, randomized pretest-posttest control group design was utilized. Residents diagnosed with depression were randomly assigned to the control group or the animal-assisted intervention group. Participants were administered the 30-item Geriatric Depression Scale and the UCLA Loneliness Scale as both a pre and post-test to measure their levels of depression and loneliness. The post-test measure was completed three months after initiation of the animal-assisted intervention.

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Human Animal Bond in Colorado (HABIC) is a program based out of Colorado State University, School of Social Work. Founded in 1993, HABIC provides Animal-Assisted Activity (AAA) and Animal-Assisted Therapy (AAA) programs.

A HABIC team consists of one human volunteer and one companion animal, usually the member's own pet and typically, but not necessarily, a dog. Before being placed in a facility and partnered with a professional staff member, all human-animal teams undergo extensive screening and training, lasting a minimum of four months.

With animal-assisted activity (AAA), the HABIC team independently provides one-to-one visits with the participants. These visits usually occur in the participant's room, where they engage in conversation and interaction with the animal. The HABIC team visits once per week for approximately fifteen minutes. Participants interact with the human-animal team using verbal and physical commands, giving the dog treats, grooming and petting the dog, as well as engaging in conversation with the handler.

Setting

The intervention was delivered to residents who are permanently placed in a long-term care facility in Fort Collins, Colorado. This 130-bed facility is licensed by the State of Colorado Department of Health to provide long-term skilled nursing care.

Sample

Ideally, the theoretical population that the findings of this study could be generalized to is all elderly persons diagnosed with depression that are living in a long-term care facility. The sampling frame is elderly diagnosed with depression living in a

long-term care facility in the United States. The actual sample was 48 residents

diagnosed with depression living in the long-term care facility previously identified.

The target population is elderly persons diagnosed with depression who are

institutionalized and who consented to participate in the study.

Utilizing convenient, purposive, non-probability sampling, the researcher, with

the assistance of facility staff, retrieved pertinent information from the computerized

medical record of each resident to determine if they met inclusion criteria. These

criteria included a diagnosis of depression, a cognitive ability to participate in the study,

and no allergies, dislike, or fear of animals.

Informed Consent

Informed consent was obtained from the residents prior to participation in the

study and after approval from the Review Board of Colorado State University.

Data Collection Procedures

One hundred and thirty residents were screened to reach a sample size of 48

residents, 24 in the treatment group and 24 in the control group. All new residents, as

well as existing residents who are reassessed quarterly, were screened by facility social

work staff using the Mini-Mental Status Exam (MMSE) and the 30-item Geriatric

Depression Scale (GDS-30). Residents that scored 20 or over on the MMSE and had a

score of 10 or greater on the GDS-30 were referred to the researcher for participation in

the study.   Following referral, the researcher met with the resident, explained the

project, determined if the resident would like to participate, and obtained consent.

Residents who consented to participate but prior to randomization were asked to complete the UCLA Loneliness Scale. Participants were randomized to groups by flipping a coin and choosing heads (experimental) or tails (control). Participants were notified at that time the results of randomization to the experimental or control group.

The control group received usual care, which consisted of one or a combination of the following interventions: anti-depressant medications, psychotherapy, one-to-one visits with social service staff, and volunteer visits. The experimental group received usual care; in addition, they received the animal-assisted activity intervention being studied. The animal-assisted activity intervention consisted of the HABIC team independently providing one-to-one visits with the participants. The visits usually occurred in the participant's room, where they engaged in conversation and interaction with the animal. The HABIC team visited for approximately 15 minutes once per week for twelve weeks.

<div align="center">Measurement</div>

The social service staff of the facility administered the pre-test for the Geriatric Depression Scale. The 30-item Geriatric Depression Scale (GDS-30), first created by Yesavage, et al., has been tested and used extensively with older adults (Kurlowicz & Greenburg, 2007).   The GDS-30 is a brief, 30-item questionnaire in which participants are asked to respond by answering yes or no in reference to how they felt over the past week. The GDS-30 was found to have 92% sensitivity and 89% specificity when evaluated against diagnostic criteria (Kurlowicz & Greenburg, 2007).   Yesavage, et al.

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(1982) also found the GDS-30 to have excellent validity and reliability; reliability = .85 and internal consistency = .94 (Kurlowicz & Greenburg, 2007).

The researcher then administered the pre-test for the UCLA Loneliness Scale, explaining the procedure and addressing any concerns the participants had. This scale has become the most widely used measure of loneliness, with over 500 citations in the Social Science Citation Index of the 1980 publication on the measure (Russell, 1996). Scores on the loneliness scale have been found to predict a wide variety of mental (i.e., depression) and physical (i.e., nursing home admission, mortality) health outcomes (Russell, 1996).

Analyses of the reliability, validity, and factor structure of the UCLA Loneliness Scale were conducted (Russell, 1996). Results indicate that the measure is highly reliable, both in terms of internal consistency (coefficient a ranging from .89 to .94) and test-retest reliability over a 1-year period (r = .73) (Russell, 1996). Convergent validity for the scale was indicated by significant correlations with other measures of loneliness. Construct validity was supported by significant relationship with measures of the adequacy of the individual's interpersonal relationships, and by correlations between loneliness and measures of health and well-being (Russell, 1996). After receiving the experimental intervention for three months, a posttest GDS-30 and UCLA Loneliness Scale were administered to both groups.

Data Analysis Techniques

The outcomes of this study were analyzed utilizing the SPSS statistical software program. Scores on the 30-item Geriatric Depression Scale and UCLA Loneliness Scale were examined to evaluate if there is a difference following the animal-assisted intervention pretest to posttest. Independent sample t-tests were conducted to determine if there is a change in depression and loneliness comparing pre and posttest scores. If there was a difference, the Gains score was calculated for results on the GDS-30 and UCLA Loneliness Scale by subtracting the pre-score from the post-score, and an independent sample t-test conducted using the Gains score. The assumption of homogeneity of variance was examined using the Levene's test. The assumption of normality was examined for skewness and kurtosis with a histogram. The appropriate independent sample t-test tables display the results of both analyses. Simple regression analysis was completed to determine if loneliness is a predictor of depression.

Limitations

There are several limitations to this study. There is a threat to internal validity due to plausible rival hypotheses, as the effect of treatment as usual on reducing depression was not determined. There is an ecological threat to external validity, as the study was only conducted in long-term care facilities.   Elderly persons with depression also reside in the community and other residential settings. With the absence of funding, this randomized study was conducted in one long-term care facility. In addition, random sampling was not utilized.

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CHAPTER FIVE: RESULTS

This chapter includes an analysis of the study data. Results will be reported on demographic characteristics of the sample population and paired samples and independent samples *t*-tests on the 30-item Geriatric Depression Scale (GDS-30) and UCLA Loneliness Scale.

Table 5.1 displays the demographic characteristics for the sample of residents who consented to participate in the study. For age group, 2.1% of residents are less than 50 years old, 8.4% are 50-60 years old, 8.4% are 70-80 years old, 62.3% are 80-90 years old, and 18.8% of residents are over 90 years of age. For gender, of 14.6 % of residents are male and 85.4 % are female. For ethnicity, 2.1% of residents are Hispanic, and   97.9 % are Caucasian. For level of education, 14.6 % of residents had less than a high school education, 62.5 % had a high school education, 12.5 % had a 4-year degree, 2.1% had a graduate degree, and 8.3 % had technical or trade school degrees. For marital status, 4.2% of residents never married, 16.7 % are married, 10.4 % are divorced, and 68.7% are widowed. Regarding religious preference, 82.4% of residents are Protestant, 13.3% are Catholic, and 2.2% are non-denominational, and 2.1% had no religious preference. For payer source, 25% of residents are private pay, 52% are Medicaid, 18.8% are Medicare, and 4.2% are Hospice. For depression diagnosis, 58.3%

of residents had no diagnosis, 39.6% are diagnosed with depressive disorder, and 2.1% are diagnosed with major depression.

The first set of analyses compared the experimental group on the GDS-30 and UCLA Loneliness Scale from pre-intervention to post-intervention. According to the guidelines for skewness, the assumption of normality was not markedly violated for the GDS-30 or UCLA Loneliness Scale pretest or posttest scores for the experimental group. Table 5.2 displays the results of the paired samples t-test on the GDS-30 and UCLA Loneliness Scale scores for the experimental group. There was a statistically significant difference from pretest to posttest on the GDS-30 ($p < .001$) and on the UCLA Loneliness Scale ($p = .002$), which indicates that participants in the experimental group experienced decreased levels of depression and loneliness after receiving the AAA intervention.

The second set of analyses compared the experimental and control groups on gain scores for the GDS-30 and UCLA Loneliness Scale. According to the guidelines for skewness, the assumption of normality was not markedly violated for the GDS-30 or UCLA Loneliness Scale gain scores for the experimental or control groups. As for homogeneity of variance on the GDS-30, the Levene's Test did not have a statistically significant result, $F = 1.22$, $p = .728$, which indicates that the two groups had equal variances. Table 5.3 displays the results of the independent samples t-test on the GDS-30 gain score. According to the results, there was not a statistically significant difference between experimental and control groups on this measure ($t = 0.61$,

$p = .547$). Although not statistically significant, the experimental group ($M = 3.96$) had a greater reduction in depression scores than did the control group ($M = 3.08$), which yielded a small effect size of $d = .18$.

As for homogeneity of variance on the UCLA Loneliness Scale, the Levene's Test did not have a statistically significant result, $F = 0.42$, $p = .521$, which indicates that the two groups had equal variances. Table 5.3 displays the results of the independent samples t-test on the UCLA Loneliness gain score. According to the results, there was not a statistically significant difference between experimental and control groups on this measure ($t = 0.45$, $p = .654$). Although not statistically significant, the control group ($M = 1.58$) had a greater reduction in loneliness scores than did the experimental group ($M = 1.29$), which yielded a small effect size of $d = .13$.

Table 5.1
Sample Demographic Characteristics of Participants (N = 48)

Characteristic	Frequency	Percent
Age Group		
Under 50	1	2.1
50-60	3	8.4
70-80	3	8.4
80-90	9	62.3
Over 90	6	18.8
Gender		
Male	7	14.6
Female	41	85.4
Ethnicity		
Hispanic	1	2.1
Caucasian	47	97.9
Level of Education		
Less than high school	7	14.6
High school	30	62.5
4-year degree	6	12.5
Graduate Degree	1	2.1
Technical/Trade	4	8.3
Marital Status		
Never married	2	4.2
Married	8	16.7
Divorced	5	10.4
Widowed	33	68.7
Religious preference		
Protestant	39	82.4
Catholic	6	13.3
Non-denominational	1	2.2
No preference	3	2.1
Payer source		
Private	12	25.0
Medicaid	25	52.1
Medicare	9	18.8
Hospice	9	18.8
Depression diagnosis		
None	28	58.3
Depressive Disorder	19	39.6
Major Depression	1	2.1

Table 5.2

Pretest and Posttest Differences for Experimental Group on GDS-30 and UCLA
Loneliness Scale Results

	Pretest		Posttest			
	N=24		*N*=24			
Outcome	*M*	*SD*	*M*	*SD*	*df*	*t*
Geriatric Depression Scale	14.79	4.95	10.83	5.55	23	4.43***
UCLA Loneliness Scale	19.75	6.84	18.46	6.12	23	3.55**

* p < .05. ** p < .01. *** p < .001.

Table 5.3

*Group Differences for Experimental and Control Groups on GDS-30 and UCLA
Loneliness Scale Results*

	Experimental		Control				
	N=24		N=24				
Outcome	*M*	*SD*	*M*	*SD*	*df*	*t*	*d*
Geriatric Depression Scale	3.96	4.38	3.08	5.55	46	0.61	.18
UCLA Loneliness Scale	1.29	1.78	1.58	2.62	46	0.45	.13

CHAPTER SIX: DISCUSSION AND RECOMMENDATIONS

Findings

The demographics of the study population are typical of long-term care facilities in general. There were more female residents in the facility than males (41% versus 7%). The largest group of residents was 80-90 years of age (62.3%). Older adults between the ages of 80 and 90 generally account for more than 50% of all residents living in long-term care facilities.

By race, 97.9% of the participants were Caucasian and 2.1% were Hispanic, consistent with the general population of the state of Colorado. By marital status, as expected the largest proportion of residents was widowed (68.7%). Married residents constituted the next largest group.

The level of education of the 48 participants in the study was attained. The largest proportion of participants reported completing high school (62.5%). A fairly large proportion (14.6%) completed four years of college or obtained a graduate degree.

The purpose of this study was to increase knowledge on the efficacy of animal-assisted activity in reducing depression and decreasing loneliness through socialization with a human-animal team visitation program. Specifically, the first research question asked if there are significant differences in the level of depressive symptoms and level of loneliness after receiving animal-assisted activity for residents of long-term care

facilities. To determine if there was a difference following the animal-assisted

intervention, paired samples *t*-tests were completed. The results indicate there were

statistically significant differences in levels of depression ($p < .001$) and in levels of

loneliness ($p = .002$), indicating that participants in the experimental group experienced

decreased levels of depression and loneliness after receiving the AAA intervention.

The second research question asked if there are significant differences in level

of depressive symptoms between residents of long-term care facilities who receive

animal-assisted activity plus usual care and those who only receive usual care. To

determine if there were differences between groups, independent samples *t*-tests using

gain scores were conducted. There were no statistically significant differences between

the experimental and control groups on the depression and loneliness measures. An

analysis of the GDS-30 scores found that although not significant, there was a greater

decrease in level of depressive symptoms for participants who received the animal-

assisted activity plus usual care.

One unexpected finding of this study was the percentage of participants with a

depression diagnosis. To qualify for participation, a GDS-30 score of 10 or greater was

needed. Scores on the GDS-30 of 10-19 indicate mild depressive symptoms and a

score over 20 indicates severe depressive symptoms. Of the participants, over half

(58.3%) had no diagnosis of depression. This information could support the findings

stated earlier by Alexopoulos (2004) that depression is under recognized in the elderly

population, and Baldwin, et al. (2002), depression is often not recognized or adequately treated.

<div align="center">Limitations</div>

There was no statistically significant difference between the experimental and control groups, with both exhibiting a decrease in symptoms of depression and loneliness. This could be partially attributed to a small sample size and a limited intervention time of fifteen minutes once per week. A larger sample size in conjunction with an increase in the intervention from fifteen minutes once per week to thirty minutes once per week may provide for more definitive results. The literature reviewed provided results indicating participants who received AAA for thirty minutes per week exhibited statistically significant results.

As there was a decrease in depression and loneliness for both groups and no differences between groups, it is unclear whether AAA was what made the difference for the experimental group. However, the mean change in depression among participants in the experimental group was greater, relative to control.

<div align="center">Discussion</div>

Overall, the animal-assisted activity intervention resulted in a positive change for the participating subjects. The participants receiving usual care only also exhibited positive changes. These results are consistent with the theoretical conceptualization for treatment of depression in the elderly. Providing a variety of positively reinforcing

<div align="center">55</div>

events, such as animal-assisted activities, volunteer visits, and individual attention from staff produced a reduction in depressive symptoms.

Reinforcement theory states that an increase in the amount and availability of positively reinforcing events encourages increased attention to the environment (Lewinsohn, 1979). With an increase in engagement with the social environment comes greater access to more sources of positive reinforcement. According to cognitive-behavioral theory (Beck, 1976) these positive environmental events produce a thought or belief that subsequently produces an emotion and behavior with potential to alter the negative schema.

The implications of this conceptualization and results of the study are worthy of noting. As the participants in the experimental group showed a decrease in levels of depression and loneliness following AAA, the treatment of depression for many institutionalized older adults should involve the provision of increased opportunities for positive reinforcing events such as animal-assisted interventions.

Implications for Social Work Practice

The elderly population is growing. This growth in population, combined with extended life expectancy, will bring a subsequent increase in rates of institutionalization. Depression among elderly living in long-term care facilities has been demonstrated to be a problem, and effective interventions to reduce this depression are needed. By conducting this research, social workers and other professionals are provided another intervention to utilize.

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Currently, there is a tendency to limit interventions to medication and psychotherapy. Elderly persons are often over medicated and many are resistant to accessing mental health services for fear of stigmatization. For some, use of an animal-assisted intervention could be an enjoyable, less invasive, effective intervention to decrease symptoms of depression and feelings of loneliness while increasing socialization, improving quality of life. Animal-assisted programs have been demonstrated to be simple and inexpensive. They can be easily instituted and provided entirely by volunteers from outside the facility.

The presentation of this study is most pertinent for agencies providing services to the elderly. A PowerPoint presentation will be developed providing an informational overview of the intervention, design and methodology, with the statistical results of the study displayed in tables and figures.   The presentation will be given to facilities providing long-term care, assisted living, independent living, Hospice, and inpatient psychiatric care. The presentation will be provided to the Office on Aging for distribution to other agencies providing services to the elderly. To disseminate the findings of this study to a larger audience, it could be published in several journals including *Activities, Adaptation & Aging, Aging and Mental Health, Anthrozoos, International Journal of Geriatric Psychiatry, Journal of Gerontology, Psychological Reports*, and *Research on Social Work Practice*.

Recommendations

More studies are needed to increase empirical evidence on the efficacy of animal-assisted interventions with older adults. This study was limited to one long-term care facility caring for older adults. Similar studies need to be conducted in other types of residential settings including assisted living, board and care, and inpatient Hospice facilities. A study could be done with both an increased sample size and larger dose of intervention. Social support could be studied as a theoretical basis along with depression. Given the high number of elderly with cognitive deficits, a study could be completed that focused on the effects of AAA with the cognitively impaired.

The results of this study indicate that a mixed method design providing both qualitative and quantitative information with a larger sample size may be a more effective approach. Although statistical results are more readily accepted, including observation of the residents participating in the animal-assisted activity may be a more appropriate design to provide for increased generalization.

The growth of animal-assisted programs in health care facilities is dependent on the health care professionals employed within them. Research on various professional groups regarding level of education about animal-assisted interventions and attitude toward the integration of animals into treatment should be explored.

Organized animal-assisted activity and therapy programs are well established in many long-term care facilities. These programs are safe, affordable, and provide many benefits toward improving the quality of life for residents. There are many common

challenges faced by organizations that utilize volunteers such as volunteer availability,

training and supervision of volunteers, and absenteeism and unreliability.   Expansion

of AAA programs may be dependent on both implementation of instruments for

evaluation and documentation of the positive results, as well as provision of financial

reimbursement for trained human-animal teams.

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APPENDICES

APPENDIX A

Mini-Mental Status Exam

ORIENTATION: Ask the resident to tell you each of the following.
Check each correct answer and score 1 point each.
 Resident can tell you the year
Resident can tell you the county you are in
Resident can tell you the season
Resident can tell you the town/city you are in
Resident can tell you the date
Resident can tell you the address/name of the building you are in
Resident can tell you the day
Resident can tell you the floor/hall they are on
Resident can tell you the month
Resident can tell you the state you are in
Resident unable to tell any of the above - No points

REGISTRATION - Name 3 objects, such as, ball, penny, tree, taking one second to say
each. Then ask resident to name all three. Repeat the answers until the resident learns
all three.
Check each correct answer and score 1 point each.
 Object 1   Object 3
 Object 2 Unable to learn objects - No points

ATTENTION AND CALCULATON - Ask resident to count backwards from 100 by 7.
Stop after five answers.
Serial 7's - Check each correct answer and score 1 point each.
1st Answer - 93   4th Answer - 72
2nd Answer - 86   5th Answer - 65
3rd Answer - 79   Unable to do any part of Serial 7's - No points

(ALTERNATIVE to Serial 7's) WORLD spelled backwards.
Check each correct letter and score 1 point each.
1st Letter - D   4th Letter - O
2nd Letter - L   5th Letter - W
3rd Letter - R   Unable to do any part of spell WORLD backwards - No points

RECALL - Ask for names of the three objects learned in REGISTRATION.
Check each correct answer and score 1 point each.
Object 1   Object 3
Object 2   Unable to recall any of the objects - No points

LANGUAGE - Point to a pencil and a watch. Have the resident name them as you point.
Check each correct answer and score 1 point each.
Pencil
Watch
Unable to identify the objects - No points

LANGUAGE - Have the resident repeat 'NO IFS, ANDS, OR BUTS'.
Score 1 point if able to repeat correctly.
Resident repeated NO IFS, ANDS, OR BUTS.
Unable to repeat correctly - No points

LANGUAGE - Have the resident follow a three-stage command: 1) Take the paper in your right hand; 2) Fold the paper in half; 3) Put the paper on the floor.
Check each correct action and score 1 point each.
Took the paper in right hand.
Put the paper on the floor.
Folded the paper in half.
Unable to follow any of the commands - No points

LANGUAGE - Have the resident read and obey the following command: CLOSE YOUR EYES.
Score 1 point for following the command.
Read and closed eyes.
Unable to follow the command - No points

LANGUAGE - Have the resident write a sentence of their own choice. (The sentence should contain a subject and an object and should make sense. Ignore spelling error(s) when scoring.)
Score 1 point for appropriate sentence.
Wrote Sentence
Unable to write a sentence - No points

LANGUAGE - Give the resident a copy of the intersecting pentagons design and have the resident copy it.
Score 1 point if all the sides and angles are preserved and if the intersecting sides form a quadrangle.
Copied design correctly.
Unable to copy design correctly - No points

EVALUATION
Calculate Points and Record Total (30 points possible)

INTERPRETATION OF SCORE

25-30 QUESTIONABLY SIGNIFICANT - May have clinically significant but mild deficits. Likely to affect only most demanding activities of daily living.

20-25 MILD - Significant effect. May require some supervision, support and assistance.

10-20 MODERATE - Clear impairment. May require 24-hour supervision.

0-9 SEVERE - Marked impairment. Likely to require 24 hour supervision and assistance with ADLs.

APPENDIX B

Geriatric Depression Scale

(yes/no response)

1. Are you basically satisfied with your life?
2. Have you dropped many of your activities and interests?
3. Do you feel that your life is empty?
4. Do you often get bored?
5. Are you hopeful about the future?
6. Are you bothered by thoughts you can't get out of your head?
7. Are you in good spirits most of the time?
8. Are you afraid that something bad is going to happen to you?
9. Do you feel happy most of the time?
10. Do you often feel helpless?
11. Do you often get restless and fidgety?
12. Do you prefer to stay at home, rather than going out and doing new things?
13. Do you frequently worry about the future?
14. Do you feel you have more problems with memory than most?
15. Do you think it is wonderful to be alive now?
16. Do you often feel downhearted and blue?
17. Do you feel pretty worthless the way you are now?
18. Do you worry a lot about the past?
19. Do you find life very exciting?
20. Is it hard for you to get started on new projects?
21. Do you feel full of energy?
22. Do you feel that your situation is hopeless?
23. Do you think that most people are better off than you are?
24. Do you frequently get upset over little things?
25. Do you frequently feel like crying?
26. Do you have trouble concentrating?
27. Do you enjoy getting up in the morning?
28. Do you prefer to avoid social gatherings?
29. Is it easy for you to make decisions?
30. Is your mind as clear as it used to be?

0-9 are considered normal
10-19 indicates mild depressive symptoms
over 20 indicates severe depressive symptoms

APPENDIX C

UCLA Loneliness Scale

Indicate how often each of the statements below is descriptive of you.

Circle one letter for each statement:

0 indicates "I often feel this way"

S indicates "I sometimes feel this way"

R indicates "I rarely feel this way"

N indicates "I never feel this way"

1. How often do you feel unhappy doing so many things alone? O S R N

2. How often do you feel you have nobody to talk to? O S R N

3. How often do you feel you cannot tolerate being so alone? O S R N

4. How often do you feel as if nobody really understands you? O S R N

5. How often do you find yourself waiting for people to call or O S R N write?

6. How often do you feel completely alone? O S R N

7. How often do you feel you are unable to reach out and communicate with those around

   you? O S R N

8. How often do you feel starved for company? O S R N

9. How often do you feel it is difficult for you to make friends? O S R N

10. How often do you feel shut out and excluded by others? O S R N

Interpreting the UCLA Loneliness Scale

To determine your level of loneliness give yourself:

1 point for each question you answered "never" N

2 points for each question you answered "rarely" R

3 points for each question you answered "sometimes" S

4 points for each question you answered "often" O

APPENDIX D

Consent to Take Part in a Research Study
Colorado State University

TITLE OF STUDY: Animal-Assisted Activity as an Intervention for Reducing Depression in Residents of Long-Term Care Facilities.

PRINCIPAL INVESTIGATOR: Louise M. Quijano, PhD, MSW
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Colorado State University, School of Social Work
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WHY AM I BEING INVITED TO TAKE PART IN THIS RESEARCH? You are being asked to take part in a research project. The project involves studying the use of animals as a treatment to reduce depression for people who live in long- term care facilities. Your choice to take part or not take part is up to you. You may choose to participate and later stop taking part at any time.

WHO IS DOING THE STUDY? Dr. Louise M. Quijano, PhD, MSW of Colorado State University and a masters-level social work student will carry out this study.

WHAT IS THE PURPOSE OF THE STUDY? The purpose of this project is to test a treatment for depression for residents of long-term care facilities. During the study, you will continue to receive your regular treatment. If you are chosen to take part in this study, you will be randomly assigned to one of two groups. One group will receive regular treatment and the animal-assisted activity intervention, and the second group will receive regular treatment. The project staff will let you know which group you are in. The study has 4 parts: 1 screening assessment, treatment that consists of regular care and the intervention, and 2 follow up screening assessments.

WHERE IS THE STUDY GOING TO TAKE PLACE AND HOW LONG WILL IT LAST? The research will take place at Lemay Avenue Health and Rehab Facility. The study will last about 6 months.

Page _____ of _____ Participant's Initials _____ Date _____

WHAT WILL I BE ASKED TO DO?
Evaluation: If you agree to take part and have signed the consent form, you will be asked questions about loneliness. This will take no more than 15 minutes. By random assignment, you will be placed in one of two groups, the group receiving regular treatment and the intervention, or the group receiving regular treatment. The staff will tell you which group you will be in.

Intervention: Animal-assisted activity will be done in approximately 12 visits over 12 weeks. At each visit, you will meet with a human-animal team for approximately 15 minutes. You can talk with the person and pet, groom, play, and give treats to the animal. Project staff will supervise the visits until you and the team feels comfortable together. The project staff will check in with you on a regular basis.

Regular Treatment: You will continue to receive regular treatment that can consist of medications, psychotherapy, visits with the facility social worker, and volunteer visits.

Follow-up: After the 12 weeks of treatment, you will have a meeting with the project staff. We will repeat the questions asked during the first meeting and ask some additional questions about your mood. This will take about 30 minutes.

ARE THERE REASONS WHY I SHOULD NOT TAKE PART IN THIS STUDY? This study is for residents who are placed for long-term care at Lemay Avenue Health and Rehab Facility and who have depression. If you do not meet these criteria, you will receive regular treatment.

WHAT ARE THE POSSIBLE RISKS AND DISCOMFORTS? The evaluation part of the study when you are asked questions about your mood and feeling lonely poses very small risk. Talking about these things may have an affect on your feelings for a little while. The animal-assisted activity intervention poses low risk. This type of intervention is not new and has been used with many people in different settings, children and older adults. The organization that provides the human-animal teams, Human Animal Bond in Colorado (HABIC) does extensive testing and training before the teams are placed for service. They have been in practice since 1993 and have not had any injuries. It is not possible to know all the risks in research procedures, but the researcher(s) have taken steps to reduce any known and potential, but unknown, risks.

Page _____ of _____ Participant's Initials _____ Date _____

ARE THERE ANY BENEFITS FROM TAKING PART IN THIS STUDY? You will receive no direct gain from taking part in this study. However, your involvement may help the researchers better understand decreases in the severity of depressive symptoms. Also, information from this study will further our general knowledge about the treatment of depression in residents in long-term care facilities.

DO I HAVE TO TAKE PART IN THIS STUDY? Your part in this study is voluntary and you may take away your consent and stop at any time. If you stop taking part in the study, you will not lose benefits that you would have received.

WHAT WILL IT COST ME TO PARTICIPATE? There are no costs to you for this research study.

WHO WILL SEE THE INFORMATION THAT I GIVE? We will keep private all research records that identify you, to the extent allowed by law. When we write about the study results to share it with other researchers, we will only write about the combined information we have gathered. You will not be identified in these written materials. We may publish the results of this study but we will keep your name and other personal information private. We will do this by giving your research record a code instead of keeping your name in our records (Example: S01E). Social Security numbers will not be used in this study.

We will make every effort to keep anyone who is not on the research team from knowing that you gave us information, or what that information is. For example, your name will be kept separate from your research records. These two things will be stored in different places under lock and key. There may be times, though, when we may have to show your information to other people. For example, the law may require us to show your information to a court or to tell authorities if we believe you pose a danger to yourself or someone else.

CAN MY TAKING PART IN THE STUDY END EARLY? By signing this consent form you are stating that you have received the information about this study and that you agree to be a part of the study. You will be given a copy of this signed form to keep. You are not giving up any of your rights by signing this form. Even after you have signed this form, you may change your mind at any time. Please contact the project staff if you decide to stop taking part in this study.

The researcher may decide to stop you from taking part in this study ay any time. You could be removed from the study for reasons related only to you (for example, if you move or do not take part in sessions). You could also be removed from the study because the entire study is stopped.

Page _____ of _____ Participant's Initials _____ Date _____

WILL I RECEIVE ANY COMPENSATION FOR TAKING PART IN THIS STUDY? You will not receive any compensation for taking part in this study.

WHAT HAPPENS IF I AM INJURED BECAUSE OF THE RESEARCH? The Colorado Governmental Immunity Act determines and may limit Colorado State University's legal responsibility if an injury happens because of this study. Claims against the University must be filed within 180 days of the injury.

WHAT IF I HAVE QUESTIONS? Please ask any questions that you have now before you decide to take part in the study. Later, if you have more questions about the study, you can contact the researcher, Dr. Louise Quijano at 970-491-7448. If you have any questions about your rights as a volunteer in this research, contact Janell Barker, Human Research Administrator, at 970-491-1655. We will give you a copy of this consent form to take with you.

"This consent form was approved by the CSU Institutional Review Board for the protection of human subjects in research on November 5, 2009."

WHAT ELSE DO I NEED TO KNOW? By signing on the next page, you agree that you have read the information stated and willingly sign this consent form. Your signature also means that you have received a copy of this 5-page form.

Page _____ of _____ Participant's Initials _____ Date _____

Consent to Take Part in Research Study
Colorado State University
Signature Page

TITLE OF STUDY: Animal-Assisted Activity as an Intervention for Reducing Depression in Residents of Long-Term Care Facilities.

_____   _____
Signature of person agreeing to take part in the study   Date

_____   _____
Printed name of person agreeing to take part in the study   Date

_____   _____
Name of person providing information   Date

_____   _____
Signature of Research Staff   Date

Page _____ of _____ Participant's Initials _____ Date _____

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APPENDIX E

TITLE OF STUDY: Animal-Assisted Activity as an Intervention for Reducing Depression in Residents of Long-Term Care Facilities.
PRINCIPAL INVESTIGATOR: Louise M. Quijano, PhD, MSW
Colorado State University, School of Social Work
132 Education Building
Phone: (970) 491-7448
Email: Lquijano@cahs.colostate.edu

CO-PRINCIPAL INVESTIGATOR: Angela Condit, BSW
Colorado State University, School of Social Work
132 Education Building
Phone: (970) 581-2433
Email: angela.condit@columbinehealth.com

SCRIPT

Hello, my name is Angela Condit. I'm a graduate student in the social work program at Colorado State University. As part of the requirements for my degree, I am completing a research project. This research project will take place at Lemay Avenue Health and Rehab Facility and will last about 6 months. The purpose of the project is to test animal-assisted activity as a treatment for depression in residents of long-term care facilities.   I will be working on the project with Dr. Louise M. Quijano, PhD, LCSW, of Colorado State University.   I would like to explain the project to you and give you an opportunity to determine if you would like to participate. Thank you for giving me the time to explain the project to you and for considering taking part. Please stop me at anytime during the explanation if you have a question.