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## Current Usage of Animal Assisted Therapy in Nursing Homes in Ramsey County, Minnesota

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**CURRENT USAGE OF ANIMAL ASSISTED THERAPY IN NURSING HOMES IN  
RAMSEY COUNTY, MINNESOTA**

A MASTER'S PROJECT  
SUBMITTED TO THE GRADUATE FACULTY  
GRADUATE SCHOOL  
BETHEL UNIVERSITY

BY  
LAUREN K. DUERST  
NATALIE E. NIKONOVICH  
ASHLEY M. YOUNG

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS  
FOR THE DEGREE OF  
MASTERS OF SCIENCE IN PHYSICIAN ASSISTANT

2015

RESEARCH COMMITTEE APPROVAL

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Chair: Mary Michener, Ed.D.                      Date

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Member: Laurie Foster                              Date

## ABSTRACT

Animal assisted therapy is a well-established modality of therapy that has several physiological & psychological benefits in patients' diagnosed with a wide variety of medical conditions. In particular, research proves that the usage of animal assisted therapy in nursing homes, as a form of adjunct therapy, has numerous benefits for the residents (Colombo et al., 2006; Horowitz, 2010; Le Roux & Kemp, 2009; Moretti et al., 2011). As the United States' elderly population increases, animal assisted therapy has the potential to be an important form of palliative treatment if implemented in nursing home facilities.

The main purpose of this study was to determine the use of animal assisted therapy (AAT) for residents living in nursing home facilities in Ramsey County, Minnesota. Furthermore we compiled the thoughts and opinions of each facility director regarding the usage and perceived barriers that accompany the implementation of AAT programs.

The results of this study indicated that of the 15 facility directors who completed the survey, 8 indicated that their facility is currently involved with any AAT programs at this time and 7 indicated they were not.

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## **Chapter 1: Introduction**

### **Background to problem**

The powerful connection that is present between human and animal is no secret to most. Animal assisted therapy (AAT) is defined as, “The presentation of an animal to one or more persons for the purpose of providing a beneficial impact on human health or well-being” (Palley, L., O’Rourke, P., & Niemi, S., 2006, p. 199). The physical, emotional, psychological and social support that animals provide to humans has unveiled many valuable therapeutic uses (Horowitz, 2010; Le Roux & Kemp, 2009; Moretti, et al., 2011). “Animal assisted therapy (AAT) reduces pain in children, improves outcomes in adults hospitalized with heart failure, and reduces medication uses in elderly patients” (Horowitz, 2010, p.339).

Companion animals have been greatly utilized for therapeutic purposes in many different ages, settings and for a wide range of illnesses. One study showed that pet therapy improved mood and depressive symptoms, as well as, greatly improved a self-perceived quality of life in residents living in a nursing home by up to 50% (Moretti et al., 2011). In addition, participants in AAT programs displayed an increase of responsiveness, social interaction, companionship and happiness, which are all documented observations that have been cited by several research studies through the years (Le Roux & Kemp, 2009).

For thousands of years, humans and animals have formed a natural relationship that is still very prominent today. “Throughout history and cultures worldwide animals have been respected as essential partners in human health, healing and survival” (Walsh, 2009, p. 463). In the recent decades, animals have shown to be significantly important in the lives of Americans. More than 63% of American households and 75% of American households with children own at least one pet (Walsh, 2009). In addition, most pet owners regard their pets as their friends and/or

family members and are extremely devoted to their companion animals (Walsh, 2009). Animals are an essential part of human lives and have been used to improve and better the emotional and functional status of humans for many years (Macauley, 2005). This symbiotic human-animal relationship and its proven benefits have warranted AAT as an effective therapy for patients and residents in care and rehab facilities all over the world (Le Roux & Kemp, 2009).

The first known documented use of animals in therapy occurred in 1792 in England at the York Retreat, where providers used farm animals to improve the attitudes of their mentally unstable patients (Macauley, 2005). Then in 1860, Florence Nightingale, the known founder of nursing, utilized animals in various therapy settings to show their companion benefits in the healing of the sick. Throughout the 20<sup>th</sup> century, animals have been incorporated into numerous healthcare professions including,

“Psychology, physical, occupational, recreational and speech therapies and has been used in many different environments including, clinics, hospitals, nursing homes, assisted living /long-term care facilities, hospice care centers, residential facilities for persons with severe physical and/or mental disabilities, schools, juvenile detention centers and prisons” (Macauley, 2005, p. 358).

Animal assisted therapy’s proven benefits range from companion relationships with hospitalized patients to residents living in nursing home facilities (Walsh, 2009). AAT contributes positively to the health and recovery of patients coping with a serious illness or trauma . Similar benefits have also been seen in persons coping with chronic diseases such as heart disease, dementia and cancer. Furthermore, AAT has been shown to provide positive benefits to war veterans and their families struggling to cope with the effects of wartime military service (Walsh, 2009). In addition, Colombo, G., Buono, M., Smania, K., Raviola, R., & De

Leo, D (2006) concluded that the presence of an animal seemed to improve mood outcome and reduce depressive & obsessive compulsive symptoms in patients. The same study reported AAT decreased symptoms in regard to anxiety and paranoia in persons suffering from mental illness (Colombo et al., 2006). Animal therapy's ability to decrease paranoia has more recently been of interest to researchers and is currently being studied as a potentially beneficial therapy for Alzheimer's disease patients (Walsh, 2009).

Growing research evidence confirms the physiological, psychological, and social benefits of interactions with animals and the therapeutic potential of animal-assisted programs in a wide variety of settings (Walsh, 2009). Over the years animal assisted therapy has shown to be beneficial for many and has revealed the significance of companion animals for the health, well-being and happiness of humans (Walsh, 2009). The potential use and benefits of animal assisted therapy is endless (Colombo et al., 2006; Horowitz, 2010; Le Roux & Kemp, 2009; Moretti et al., 2011).

### **Problem Statement**

To date, to the best of our knowledge, no compiled information is available on the use of AAT programs in nursing homes in Ramsey County, Minnesota. Furthermore, there is no documented information regarding the rationale as to why facilities in MN are or are not using AAT. As the elderly population continues to grow, the need for residency in nursing home facilities is rising. The therapeutic use of AAT for the residents living in these care facilities should be further examined, understood and conveyed to healthcare professionals.

### **Purpose**

The purpose of this study is to determine the current use of animal assisted therapy (AAT) for residents living in nursing home facilities in Ramsey County, Minnesota. Furthermore



we aim to compile the thoughts and opinions of each facility director regarding the usage and perceived barriers that accompany the implementation of AAT programs.

### **Significance of Problem**

As the country's aging population continues to grow, a significant need exists for the use of nursing home facilities. Residents residing in these facilities will require a wide range of health and therapeutic care, and the quality of life for these residents' remains a hot topic. The potential benefits of AAT on physiological, psychosocial, health and well-being, according to our literature review seem to prove that the benefits far outweigh any risks or negatives (Walsh, 2009). At this time we are unsure if programs in Ramsey County, Minnesota are not utilizing or implementing AAT.

Historically several research studies and systemic reviews have been conducted that present valid evidence of the therapeutic use and benefits of AAT for people with chronic conditions (Walsh, 2009). These research studies also illustrate the benefits of AAT for children and adults residing as inpatients in the hospital setting or residents living in nursing home facilities (Le Roux & Kemp, 2009). Even though this is true, AAT has a great need for further attention. AAT has a great deal of promise for many and not only requires but also deserves greater examination for its potential value in healthcare practice and community interventions (Walsh, 2009). AAT programs will significantly benefit from additional qualitative and quantitative research that will help to continue building, developing and strengthening effective therapeutic programs (Walsh, 2009).

Through our extensive literature review and compiling of the differing thoughts and opinions on AAT among facility directors of nursing home facilities in Ramsey County, MN we aim to better understand the benefits and barriers regarding the implementation of AAT

programs. As the research on AAT continues to grow and evolve, healthcare, nursing homes and rehab facilities will be able to better utilize the valuable benefits and effectiveness that animal assisted therapy programs provide.

### **Research Questions:**

The following research questions will be addressed in this study:

- What is the current utilization of AAT programs in nursing home facilities in Ramsey County, Minnesota?
- For facilities that have already implemented AAT programs for their residents, how often and what type of programs are offered to residents? What is the approximate percentage of resident participation in the programs?
- For facilities that are not currently implementing AAT programs for their residents, which of the following factor(s) best describes their reasoning: lack of funds, health concerns or allergies, lack of resident interest, lack of resources, lack of information or education on AAT programs, facility regulations or restrictions, legal concerns, or other?

## **Chapter 2**

### **Introduction**

The following is a literature review concerning the usage of animal assisted therapy (AAT) in nursing homes in Ramsey County, MN. This literature review will include: the background of AAT, the nursing home demographics today, physiological & psychological benefits of AAT, alternative models & use of AAT, previous research on the usage of AAT and limitations in AAT research.

### **Background of Animal-Assisted Therapy**

Animal assisted therapy (AAT) may be defined as the “the use of trained animals in facilitating patients’ progress towards therapeutic goals” (Nepps, Stewart, & Bruckno, 2011). AAT was first documented at a retreat in York, England, in 1792 (Hooker, Freeman, & Stewart, 2002). The retreat featured a large courtyard where residents were encouraged to garden and exercise. The animals that inhabited the courtyard, such as rabbits and birds, were also integrated into the treatment plans (Hooker et al., 2002). In the United States, “...pet therapy’s history began in 1919 when Secretary of the Interior Franklin K. Lane suggested using dogs with psychiatric patients at St. Elizabeth’s Hospital in Washington, DC” (Hooker et al., 2002, p.18). During this time, Dr. Boris Levinson, an American child psychiatrist, largely promoted AAT’s utilization. Dr. Levinson documented his observations with AAT and urged the healthcare field to consider the integration of AAT into everyday patient therapy (Hooker et al., 2002). He urged medical professionals and administration to look at therapy animals as a bonding tool with the potential to help patients create a relationship with a trained therapist (Hooker et al., 2002). Dr. Levinson introduced AAT into healthcare by first working to establish a relationship between the patient

and animal, and then slowly transitioning the projection of the patient's feelings onto the trained therapist (Hooker et al., 2002).

Florence Nightingale, founder of the nursing model, was another early advocate for AAT. She believed "a small pet is often an excellent companion of the sick" (Compas & Gittler, 2009, slide 4). Exploration into AAT research and intervention began more than a hundred years ago and to date the evidence of the "immediate and long-term human health benefits of animals on the mind, body and spirit continue to be documented" (Halm, 2008, p. 373). Research regarding AAT indicates that over the years the use of pet therapy has transformed from its serendipitous roots, to a methodology that is incorporated into a wide variety of health care settings (Hooker et al., 2002). The incorporation of animals into everyday healthcare settings stems from the proven therapeutic benefits of AAT for persons with a wide variety of health disorders including, hypertension, diabetes, heart failure, cancer and mental illness (Hooker et al., 2002).

The beneficial bonds that were originally present hundreds of years ago continue to be studied and utilized today. The prevalence of animals as pets in American society is widespread. The 2013-2014 American Pet Products Association (APPA) National Pet Owners Survey reports that 83.3 million dogs are owned and 47% of households own at least one dog. There are also 95.6 million cats owned in the United States (APPA, 2013). Of those individuals with a pet, 50% report, "My pet is just as much a part of the family as any other person in the household" (Compas & Gittler, 2009, slide 8). A survey of elderly persons, who had recently lost a spouse, reported that pet ownership and strong attachment to pets was linked to significantly less depression (Bolin, 1987). Another study of senior citizens, age 65 or older, revealed that pet owners are able to maintain activities of daily living over a one-year period more sufficiently as compared to non-pet owners (Raina, 1995). Dogs, specifically, help people stay active and

provide a need for routine and a reason to get up each day (Raina, 1995). An animal's unique ability to provide a person with a nonjudgmental relationship full of unwavering loyalty and unconditional love, solidifies their role in humans' lives (Reed, Ferrer, & Villegas, 2012).

### **The Nursing Home Demographics Today**

Elderly persons who reside in nursing facilities are said to be at an increased risk for developing psychological feelings of loneliness, anxiety, and depression (R. Banks & A. Banks, 2002). The prevalence rate for minor depression in the elderly nursing home residents was 14.4% and 6.7% for major depression (Tiong, Yap, Huat Koh, Phoon Fong, & Luo, 2013). Other sources report that nursing home depression affects up to 50% of residents (Geriatric Mental Health Foundation, 2013). Significant risk factors that were found to be associated with depression were a length of stay for more than 2 years, known history of depression or pain, and lack of social contact (Tiong et al., 2013). Certain predisposing factors may be responsible for causing an increased feeling of loneliness in this population (R. Banks & A. Banks, 2002). These predisposing factors may include, decreased social interaction and/or relationships, physical separation from loved ones, coping with medical conditions and decreased independence (R. Banks & A. Banks, 2002). These health issues are a major source of concern as the age demographics of the U.S. are dramatically changing.

In 2011, the well-known baby boomer generation began to reach the age of 65. As a result, the U.S. elderly population is expected to continue growing at a steady rate and eventually begin to accelerate at a rapid rate as these baby boomers continue to age (American Health Care Association [AHCA], 2011). The rapid growth in the number of persons age 65 and over will have a large impact on services and programs required by the elderly, which includes eventually living in some type of nursing home facility. In June of 2011, the AHCA reported that there were

1,393,070 patients living in nursing homes throughout the U.S. making up an 87% occupancy rate. Occupancy rate is calculated by dividing the number of nursing home residents by the number of available beds (AHCA, 2011). In 2013, the Minnesota Health Department reported a total number of 381 certified nursing home facilities. In Ramsey County, MN alone there were a total number of 30 certified nursing home facilities (Minnesota Health Department, 2013).

### **Physiological & Psychological Benefits of Animal Assisted Therapy**

The role that animals play in creating optimal healing environments has gained recognition in many health care settings over the years (Halm, 2008). In AAT, the recognized human-animal bond may be used as an adjunct to a patient's treatment to achieve therapeutic goals through a facilitated interaction (Cole, Gawlinski, Steers, & Kotlerman, 2007; Halm, 2008). AAT is a highly effective intervention that has been shown to improve physiological stress in addition to providing relief from psychological distress (Halm, 2008). Furthermore, AAT provides patients with a sense of companionship that has been shown to improve feelings of isolation and loneliness (Duke Cancer Institute, 2011). AAT has continued to demonstrate proven benefits as an intentional healing modality for chronic conditions that affect both children and adults (Halm, 2008).

Patients that are dealing with chronic conditions including hypertension, diabetes, heart failure, cancer and mental illness, for example, are more prone to comorbidities such as stress, anxiety, and depression (Duke Cancer Institute, 2011). Furthermore, patients with chronic conditions are also at an increased risk for decreased medication adherence, due to increased pain and extensive and complicated medication treatment regimens. Certain comorbidities may have severe negative effects on the health outcomes of these patients due to their "immunosuppressive effects and decreased treatment adherence which may lead to a slowed

recovery, and increased mortality” (Duke Cancer Institute, 2011, para. 3). Emotional and psychological health is an especially important topic for patients coping with and undergoing treatment for chronic illnesses. The use of palliative and integrative medicine as health care modalities is important for improving patients’ emotional health and the effect that emotional health has on disease recovery (Duke Cancer Institute, 2011).

Psychotherapies, such as AAT, have “been shown to be beneficial for reducing stress, improving moods and energy level, decreased perceived pain, and decreasing anxiety... [as well as] reversing the immunosuppressive effects of depression, stress and anxiety” (Duke Cancer Institute, 2011, para. 5). Several AAT studies, reviewed in a large systemic research study conducted by Cole et al, have documented the psychosocial, emotional, and physical benefits for patients who have obtained brief exposures of AAT of 10 to 30 minutes (Cole et al., 2007). These psychosocial and emotional benefits included, “A decrease in anxiety, isolation and fear of procedures and improvements in social interaction, social support, communication, sensory stimulation and happiness” (Cole et al., 2007, p. 576). The studies reviewed also reported physiological changes in certain variables with short-term (2-12 minutes) interactions with animals and with pet ownership (Cole et al., 2007). The physical benefits demonstrated included a reduction in blood pressure and heart rate as well as an increase in peripheral skin temperature, after the brief interaction with the therapy animals (Cole et al., 2007).

Heart failure is one of the most common diagnoses in hospitalized adults in the United States and it is responsible for nearly one million hospitalizations each year (Cole et al., 2007). In addition, “Hospitalization for heart failure is associated with a poor prognosis for patients and readmission rates within six months are close to 50%” (Cole et al., 2007, p. 576). While heart failure can occur at any age, many of those who are diagnosed are living in nursing homes (Cole

et al., 2007). The Center for Disease Control states that the number of residents in nursing homes with heart disease is roughly 42% (Center for Disease Control [CDC], 2013a). Since AAT is helpful in patients with heart failure (Duke Cancer Institute, 2011), the effects of AAT could potentially benefit thousands of elderly patients who are living with the effects of heart failure in nursing homes around the country.

Patients with heart failure are at a significantly higher risk for developing physiological and psychological stressors as a result of coping with their illness and frequent hospitalizations (Cole et al., 2007). Heart failure patients undergo certain episodic neurohormonal changes, which include, the activation of the sympathetic nervous system and the renin-angiotensin aldosterone system and a reduction in the parasympathetic nervous system, which are induced by the patient's heart failure. At first, these neurohormonal changes might appear beneficial due to an increase in cardiac output toward baseline. However, as these changes continue to progress, as a result of physiological and psychological stressors brought on by the chronic disease, this chronic neurohormonal activation may actually be harmful and contribute to the progression of the patient's heart failure (Cole et al., 2007).

Through the years, advances in medication therapy have helped to improve the outcomes of patients with heart failure. Extensive pharmacological regimens "have an unintended consequence of making polypharmacy a central component of the management of heart failure" (Cole et al., 2007, p. 576). The interactions with animals decreased physiological indices such as heart rate and blood pressure, while improving psychosocial variables such as anxiety and depression (Cole et al., 2007). In a randomized controlled study, Cole et al. (2007) demonstrates the significance of AAT as an adjunctive therapy for improving the manifestations of physiological and psychological stress in patients living with advanced heart failure. Cole et al.'s



(2007) study concluded that a 12 minute visit with an AAT dog helped to improve heart and lung function in patients with heart failure. Physiologically, patients participating in the study were found to have a pulmonary capillary wedge pressure lowered by up to 10%, levels of stress hormone epinephrine decreased by an average 17%, and an anxiety score reduced by as much as 24% (Cole et al., 2007). This specific study verified the important physiological and psychological benefits of patients with AAT therapy (Cole et al., 2007).

Additional benefits of AAT have been documented in patients who survived a myocardial infarction (Cole et al., 2007). “The risk for cardiovascular disease, morbidity, and mortality one year after the infarction was lower in those who were pet owners than in those who were not” (Cole et al., 2007, p. 576). Dog ownership is an important independent predictor of survival one year after a myocardial infarction (Cole et al., 2007).

A diagnosis of cancer can be extremely detrimental for anyone. Today, over 60% of the incidence of cancers in the U.S. occur in people 65 years of age and older (Cancer.Net, 2013). Not surprisingly, the single greatest risk factor for developing cancer is aging (Cancer.Net, 2013). The potential benefits associated with AAT and cancer patients are noteworthy, especially with 7.2% of the nursing home resident population currently diagnosed with some type of cancer (CDC, 2013b).

When a person is diagnosed with cancer, a flood of negative thoughts and emotions may be associated along with it and coping with this diagnosis can be extremely difficult. The patient and/or their family may be unable to cope effectively which may lead to a decreased quality of life (Urbanski & Lazenby, 2012). In addition, a cancer diagnosis for older adults may result in anxieties or worries that affect the way they cope with cancer. These concerns may include, finances, maintaining physical independence, spiritual concerns and social isolation (Cancer.Net,

2013). Psychological stress may result from the fear of the disease along with the disturbance of normal daily activity that accompanies a cancer diagnosis (Urbanski & Lazenby, 2012). These concerns may develop, in addition to the normal physical and emotional concerns of coping with the cancer diagnosis itself as well as the effects of frequent hospitalizations and intensive treatments (Cancer.Net, 2013).

Cancer treatments may include pharmacological treatment with chemotherapy, radiation therapy and/or surgery. Additionally complementary and alternative medicine (CAM) modalities, including AAT, have been shown to be an effective therapy in adult studies and have been beneficial in decreasing patients' distress (Urbanski & Lazenby, 2012). Urbanski & Lazenby's (2012) systematic review reported that the benefits of AAT "lead to positive outcomes both physiologically and psychologically" in pediatrics with a chronic illness or hospitalization (p. 273).

AAT has been recognized as a reputable adjunct therapy for psychiatric patients for many years (Hooker et al., 2002). The U.S. military was at the forefront of AAT promotion when they began a program that utilized dogs as a therapy for patients with psychiatric disorders in 1919 (Hooker et al., 2002). Since then, AAT has been utilized with psychiatric patients in a multitude of settings. Today, the CDC reports have over 66% of nursing home residents are diagnosed with a psychiatric disorder (CDC, 2013c).

Nepps et al.'s (2011) study focused on the effects of an existing AAT program on hospitalized psychiatric patients over a two-year period. Physiological and psychological variables including blood pressure, pulse, salivary cortisol, pain, depression and anxiety were measured (Nepps et al., 2011). This study was conducted on a volunteer basis and allowed hospitalized psychiatric patients the opportunity to choose between either attending an AAT

program session or a video-based stress management program. Each of the programs consisted of one-hour weekly group sessions at Lancaster General Hospital (Nepps et al., 2011). The methods section of the study was developed with the specific goal of the AAT program being “to encourage social interaction and to improve coping through interaction with the dog and its handlers [and the stress management program] cognitive restructuring and coping through humor” (Nepps et al., 2011, p. 57). The results of the study concluded that those who attended the AAT program showed a reduction in both physiological as well as psychological variables including, anxiety, depression, pain and pulse (Nepps et al., 2011). The study also concluded that the AAT intervention program was just as effective as the stress management program and was documented as a safe and cost effective therapy tool for the inpatient mental health unit (Nepps et al., 2011).

Filan and Llwelllyn-Jones conducted a systemic study on the effects of AAT in persons suffering from dementia (2006). Benefits were well documented and showed lowering blood pressure and increasing release of neurochemicals, which are known to aid in bonding and relaxation (Filan & Llwelllyn-Jones, 2006). In summary, the presence of therapy animals caused a significant decrease in overall agitation and aggression in dementia patients (Filan & Llwelllyn-Jones, 2006). Furthermore, a significant increase was seen in appropriate social behavior in persons suffering from dementia when involved in AAT (Filan & Llwelllyn-Jones, 2006). A study conducted by Greer, Pustay, Zaun, & Coppens (2001) documented the effects of toy versus live cats on communication in a small group of elderly women with dementia. Live cats stimulated more communication both during their presence and immediately afterwards in the elderly patients (Filan & Llwelllyn-Jones, 2006). Overall, AAT has been shown to lead to

improvements in social and psychological states of patients suffering from dementia (Filan & Llwellyn-Jones, 2006).

### **Alternative Models & Use of Animal-Assisted Therapy**

While 66% of nursing home residents are diagnosed with dementia, more specifically over 15% of these residents are diagnosed with Alzheimer's Disease (AD) (CDC, 2013a). In one study, Nancy Edwards and Alan Beck (2002) examined the influence of AAT on the nutritional intake in individuals with AD. Weight loss and nutritional deficits are closely linked to AD (Edwards & Beck, 2002). The effects of chronic weight loss may lead to a loss of functional independence, which in turn may increase various risks such as falls, skin irritations, and decreased overall quality of life. Additionally, weight gain significantly decreases the mortality risk associated with AD (Edwards & Beck, 2002).

Edwards & Beck (2002) measured the influence of placing fish tanks in various nursing homes as a form of AAT and then recorded changes in nutritional intake. The study found that nutritional intake was increased considerably after the fish tanks were installed (Edwards & Beck, 2002). The increases in nutritional intake lead to patients who needed less nutritional supplementation and in turn savings in health care costs (Edwards & Beck, 2002). Other benefits, which were documented, included a decrease in pacing and wandering of patients and an increase of sitting quietly at the fish tank (Edwards & Beck, 2002). Likewise, more attentive and awake residents were noted, which also helped with their nutritional intake (Edwards & Beck, 2002). This study illustrated AAT's ability to go beyond the commonly thought of AAT model of visiting dogs or cats and alternatively using live-in fish. In line with AAT using a mammal such as a dog or a cat, this study concluded that fish tanks improved the overall quality of life for residents by helping to increase their dietary intake (Edwards & Beck, 2002).

According to Velde, Cipriani, & Fisher (2005) nursing homes are increasingly being used as a transitional rehabilitation facility for patients recovering from injury or illness (Velde, Cipriani, & Fisher, 2005). Velde et al. (2005) conducted a study to determine whether or not AAT would be beneficial in occupational therapy (OT). The research team used the “Lifestyle and Performance Model” as the framework to assess AAT’s impact on patients’ recovery (Velde et al., 2005). The lifestyle performance model:

“focuses on five areas of a persons’ life. Four of these domains involve clusters of human performance. They include those activities that are intrinsically gratifying, facilitate societal contribution, promote reciprocal interpersonal relationships and maintain self-care and self-maintenance. The fifth area is the responsive environment and includes the temporal, physical, social and political environments” (Velde et al., 2005, p. 47).

Improvements in patient’s fine motor skills and an increased ability to move one’s hands was seen with petting and caring for the animals. Furthermore, caring for an animal may require special attention such as feeding, holding, and stroking, which help to facilitate one’s physical and mental well-being. In summary, the study concluded that AAT has numerous beneficial effects to patient’s rehabilitation and promotes the use of AAT in regards to OT (Velde et al., 2005).

Another emerging use of AAT, in the recent years, has been in hospice settings. Therapy animals help provide socialization and supportive listening for the hospice patients and, in some instances, assistance with symptom management (Van Pelt, 2010). Because a primary goal of hospice services is comfort care, AAT is an ideal option for providing comfort to patients who often feel alone in the hospice setting (Van Pelt, 2010).

“A patient at the end of life can receive comfort from the touch of petting an animal. A patient with dementia can feel positive validation through this touch.

Patients who have had animals or love animals find the visits a chance to reconnect to their positive past experiences” (Van Pelt, 2010, para. 4).

Therapy animals can also be incorporated into grief support therapy, especially for children in hospice care or their siblings (Van Pelt, 2010). “Interacting with a therapy dog by giving it commands during play can enable a young patient in hospice to express feelings of grief by providing a sense of control, as well as providing memorable play time together with other family members” (Van Pelt, 2010, para. 11). Therapy animals can also be a source of comfort for family members following the death of a patient and also can be a “tool in bereavement counseling” (Van Pelt, 2010, para. 8). AAT is expected to continue to grow in the hospice setting, as its benefits in comforting patients at the end of life continue to be demonstrated (Van Pelt, 2010).

As mentioned previously, studies have shown AAT to stimulate communication and socialization during the presence of animals and immediately afterwards. (Filan & Llwellyn-Jones, 2006). Fick (1993) highlights the value of AAT programs as an effective method for increasing socialization among residents in nursing homes. An increase in social interactions may lead to improvements in the social climate of an institution, and occupational therapists frequently incorporate group process into their treatment. Therefore, the therapeutic use of animals can become a priceless adjunct to the attainment of treatment goals. AAT has also been seen as a link for stimulating conversation by indirectly encouraging patients to talk about their “pasts and their passions” (Fick, 1993, p. 530). Overall, research shows that the elderly living in nursing homes often withdraw from social activities and place a greater importance on the

nonhuman environment, allowing large potential for gain from the companionship that animals have to offer (Fick, 1993).

### **Previous Research on the Usage of Animal Assisted Therapy**

While the literature seems to strongly support the health and mental benefits of AAT for nursing home patients and other patients alike, current usage is not known in Ramsey County, Minnesota. A similar study was conducted in 2009 that surveyed AAT usage in Iowa & Arkansas nursing homes (Compas & Gittler, 2009). Researchers found that 78% of facilities in Iowa had animal visitation programs. This study reported that 98% of these facilities had dogs participate in their programs and 59% of the programs were conducted by volunteers with their personal pets. In regard to the Arkansas facilities, researchers found that 63% of the facilities had pet visitation programs and 37% did not. Of those with programs, 100% had dogs participating in it and 94% were conducted by volunteers with their personal pets (Compas & Gittler, 2009). These results suggest that while the majority of the nursing homes have programs in place, there is still substantial potential for AAT implementation and growth.

Some nursing homes have taken AAT one step further and now house live-in therapy animals. Compas & Gittler (2009) found that of the total respondents in Iowa, 54% of the facilities had a live-in pet, ranging from dogs, cats, birds and fish. In Arkansas, of the total respondents, 44% had a live-in facility pet (Compas & Gittler, 2009). One of the benefits noted in using aquariums, as a type of AAT, over dogs or cats, was the decrease in risks such as fleas, allergies, and the need for constant supervision by a trained animal professional (Edwards & Beck, 2002).

Compas & Gittler (2009) came across several potential barriers and concerns that nursing home directors voiced in regards to implementing ATT in their facility. These concerns included

legalities, transmission of infectious disease, allergies, aggression by animals, fall risk, and residents not caring for their pets (Compas & Gittler, 2009).

In regard to legalities addressing AAT, as of now, no federal regulations specifically address animals in the nursing home setting (Compas & Gittler, 2009). Currently, 32 states do not have statutes or regulations concerning animals in nursing homes. The other 18 states do have statutes and regulations addressing specifically animals in nursing homes. These laws regarding AAT vary. Some laws limit the number of animals or the type of animals allowed in a facility and other laws require that animals must not infringe on the rights of or negatively affect the well-being of other residents. Today, Minnesota's Administrative Rules specifically allow pet animals to be kept on premises of a nursing home as long as the other conditions listed in 4638.0200 "Pet animals in Health Care Facilities" are met (Office of the Revisor of Statutes, 2013). Several of the other previously mentioned concerns appear to be easily addressed and essentially eliminated with minimal effort.

Transmission of infectious disease can be greatly reduced if animals undergo routine health screening and receive a veterinarian check up regularly (Compass & Gittler, 2009). In addition, all animals should be kept away from food preparation areas to avoid contamination and disease transmission. Smaller animals and animals with certain coloration should be avoided to reduce potential walking obstacles for patients. The financial burden that comes with a live-in animal in particular may be supplemented or eliminated with partnerships and/or sponsors. Potential partnerships for nursing home facilities interested in starting a program include; regulatory entities, veterinarians, animal services (shelters), humane societies, and culture change resources (Compas & Gittler, 2009).



### **Limitations in Animal Assisted Therapy Research**

A significant amount of research has been conducted on the physiological and psychological effects of AAT programs on specific populations as well as in a variety of different environments. Many of these studies are associated with positive effects but it is also important to discuss and address the limitations of these studies. To date, some of these limitations include: small sample sizes, poor research designs, difficulty designing objective studies of psychological variables and preventing measuring their physiological correlates due to self-report (Nepps et al., 2011). Furthermore, not all patients enjoy the company of animals and are not willing to participate in AAT studies. As with any animal interaction, potential health hazards including, zoonotic infections and allergies may be present (Nepps et al., 2011 & Cole et al., 2007). In conclusion, every research study has some limitations, which are encountered throughout the study. It is important to acknowledge such limitations and understand that generalizations about AAT as a whole should not be taken from one individual study's conclusion.

### **Conclusion**

The elderly population currently makes up the fastest growing population in the U.S. society (American Healthcare Association, 2011). It is estimated that by 2020, over 30% of the overall U.S. population will be older than 65 years old (American Healthcare Association, 2011). Over the past 20 years, the 65 to 84 year old population increased by more than 20% and the population over the age of 85 increased over 80% (Houser, 2007). The most common cause of a person moving into a nursing home or assisted-living facility is a decline in health (Gaugler, J., Duval, S., Anderson, K., & Kane, R., 2007). The move from community to institution is

generally accompanied by a further decline in a person's sense of well-being (Gueldne et al., 2012).

A significant decline in a person's mental or physical health or both "added to leaving one's home, personal belongings, family, and pets has contributed to a patient feeling disorientated, isolated, angry or depressed" (Fick, 1993, p. 529). These persons are prime candidates for deprivation in terms of socialization and sensory stimulation (Fick, 1993).

The proven physiological benefits of AAT include, "a reduction in pain and vital signs and positive changes in activity, where as the psychological benefits included better coping abilities, reduction in loneliness and an increase in comfort and relaxation as well as socialization and self esteem" (Caprilli & Messeri, 2006, p. 380). The information reported by Urbanski & Lazenby's (2012), systematic research study illustrates that the physiological and psychological distress effecting patients with a chronic illness can be reduced and quality of life can be improved with the addition of AAT interventions.

One study concluded, "most patients who are depressed and withdrawn, helpless and hopeless have been hurt by words. Animals do not use words, and patients can safely approach them when they cannot approach people" (Fick, 1993, p. 530). Overall, the literature review strongly supports the use of AAT in nursing homes. The next step is to determine the utilization rate of AAT in Ramsey County, MN.

## **Chapter 3: Methodology**

### **Introduction**

The purpose of this study was to determine the current usage of animal assisted therapy (AAT) for residents living in nursing home facilities in Ramsey County, Minnesota. Furthermore our aim was to compile the thoughts and opinions of each facility director regarding specific usage of and/or barriers that accompany the implementation of AAT programs. This study addresses and analyzes three questions regarding AAT usage:

- What is the current utilization of animal assisted therapy (AAT) programs in nursing home facilities in Ramsey County, Minnesota?
- For facilities that have already implemented AAT programs for their residents, how often and what type of programs are offered to residents? What is the approximate percentage of resident participation in the programs?
- For facilities that are not currently implementing AAT programs for their residents, which of the following factor(s) best describes their reasoning: lack of funds, health concerns or allergies, lack of resident interest, lack of resources, lack of information or education on AAT programs, facility regulations or restrictions, legal concerns, or other?

This chapter includes the following information: study population, materials used, instrumentation, validity and reliability, study design, procedures, statistical analysis, and potential limitations.

### **Study Population**

The participants of this study were the facility directors of nursing homes in Ramsey County, MN. No personally identifying demographic data on the individual participants was asked or collected throughout the study. The residents of these nursing homes were assumed to

fall within the United States' nursing home demographics. The Centers for Medicare & Medicaid Services (CMS) reported in 2012 that female residents account for 67.2% of the nursing home population and that 78.9% of the nursing home population is non-Hispanic Whites (CMS 2012).

### **Materials Used**

In order to insure all 30 nursing homes in Ramsey County, MN were contacted, the Minnesota Health Department's online directory was utilized. The directory has each facility director's name listed and corresponding phone number. This information allowed us to contact nursing homes and distribute surveys. All subjects did not participate and/ or complete the survey. The goal of this study was to contact all 30 facilities in order to increase statistical significance.

### **Instrumentation**

A Qualtrics survey was utilized in this research project, which included one set of demographic questions and another set of questions pertaining to AAT. The survey consisted of three sections designed to collect demographic data, current usage of AAT in facility, and the opinions on the barriers of AAT implementation.

The first section collected demographic data including: number of current residents, most common medical diagnosis of residents, and average age of residents. The second and third sections were drafted and then edited and approved by a research design developer from the Children's Hospital Clinical Research Department in St. Paul, MN. The second section included questions regarding the current use of AAT in their facility. These questions included frequency of AAT therapy, types of animals used in the programs, and the approximate percentage of residents participating in the AAT program. The last section asked the participants for their reasoning behind AAT not being utilized in their facility including: lack of funds, health

concerns or allergies, lack of resident interest, lack of resources, lack of information or education on AAT programs, facility regulations or restrictions, or legal concerns. A copy of the Qualtrics survey can be found in Appendix A.

### **Validity and Reliability**

At this time there is minimally published research on AAT usage in nursing homes. The validity and reliability of the questionnaire designed for this study has not been established due to the fact that the questionnaire has not been used prior to this study. The general concept for the survey will be derived from Compas & Gittler's previous study of AAT usage in Arkansas and Iowa (2009). A field test was conducted during which research design experts reviewed the survey prior to distribution. These experts helped us determine that the survey's questions could be easily read and understood by the participants, as well as confirm that the information collected would allow us to answer our research questions.

### **Study Design**

This study was a qualitative study targeting the 30 facility directors of nursing homes in Ramsey County, Minnesota. Information regarding demographics, AAT usage, and opinions on barriers to AAT implementation in nursing homes was collected through a Qualtrics survey. The duration of the study from the initial phone call to the intended completion of the questionnaire was approximately two weeks. Further explanations of the comparisons made between subjects are discussed later in the statistical analysis section.

### **Procedures**

In June of 2014, a phone call was placed to each nursing home facility director in Ramsey County, MN to introduce the research project and ourselves. If the facility director was reached directly, a brief scripted overview was presented in which we discussed the logistics of

the study and attempted to receive participation confirmation. In order to maintain the highest level of standardization within our participant population, facility directors must have been able to be reached directly via phone. If we were unable to achieve such level of communication with a facility director, they were not eligible to participate in the study.

Facility directors interested in participating were then asked to provide research personnel with their preferred e-mail address at which they received the Qualtrics survey link. By talking to the facility directors directly on the phone we were able to facilitate response rate, obtain preferred contact information, and address potential questions that may arise from the facility directors. Each facility director received the link to the Qualtrics survey within 7 days of the initial phone call. Upon opening the Qualtrics link, a disclaimer was displayed at the beginning of the survey and the participant's consent was obtained through their decision to continue further with the study. For those participants who did not immediately complete the survey, a reminder survey link was sent to those facility directors a week later. The reminder survey link was intended to increase overall facility director response rate. Two weeks after sending out the link to the Qualtrics survey, it expired. If the survey was not complete at that time, the nursing home was considered a "no response."

### **Statistical Analysis**

The data was collected via Qualtrics and entered into a password-protected account. It is also important to note that in the final data analysis, no personal identifiers were reported. Numerical statistical data were compiled into charts, graphs, and tables. For our study, percentages were calculated and used to describe the current utilization of AAT programs in nursing home facilities in Ramsey County, MN. Calculations were done to determine the frequency of answers to the survey questions regarding how often AAT programs are offered to

residents, types of animals used in programs and approximate percentage of resident participation in programs. Frequency of responses to reasons why the facilities are not implementing AAT programs for their residents are also reported. Research personnel conducted all statistical analysis with the assistance of Qualtrics.

### **Conclusion**

In conclusion, this study was conducted in order to determine the current usage of animal assisted therapy for residents living in nursing home facilities in Ramsey County, MN. Our intent was to compile the thoughts and opinions of each facility director regarding specific usage of and/or barriers that accompany the implementation of AAT programs. Through the Minnesota health department's online registry we obtained contact information for the 30 nursing home facilities located in Ramsey County, MN. A scripted overview of the study being conducted was then presented to each facility director reached via phone. Upon expressing interest in the study at hand, a Qualtrics survey link was then sent to the facility director's preferred email. The Qualtrics survey included one set of demographic questions and another set of questions pertaining to AAT. The survey consisted of three sections designed to collect demographic data, current usage of AAT in facility, opinions on the barriers of AAT implementation. The duration of the study from the initial phone call to the intended completion of the questionnaire was approximately two weeks. Once all of the responses were obtained, percentages were calculated and used to describe the current utilization of AAT programs in nursing home facilities in Ramsey County, MN. Specific calculations regarding types of animals, frequency of animal visits, and limitations were also compiled.

## **Chapter 4: Results**

### **Introduction**

This chapter will examine and explain the data collected from the Qualtrics online survey. Each question on the distributed online survey was individually examined and is discussed in this chapter. Throughout this chapter participants, facilities, respondents, facility directors, and nursing homes will be used interchangeably to describe collected responses. Microsoft Excel and Qualtrics program were used to analyze results from the study. Tables are used to display the data analyzed.

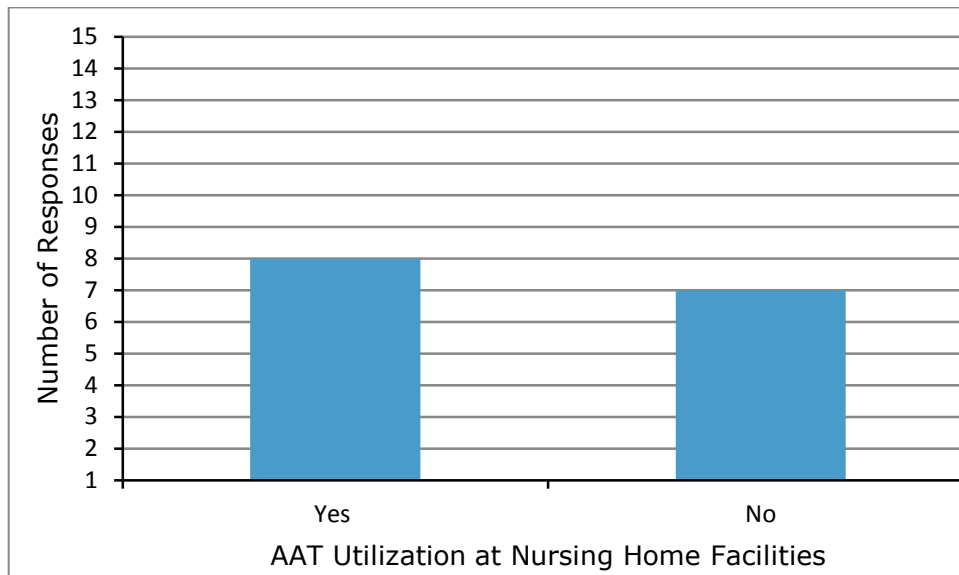
### **Data Analysis**

There were 24 nursing home facility directors that research personnel were able to directly connect with on the phone. Of those 24 nursing homes, 23 agreed to complete the survey and 1 facility director declined to participate. Of those 23 facility directors who expressed desire to participate, 15 completed the survey within the two-week time frame. The remaining six nursing home directors could not be reached after multiple phone call attempts.

The demographic data collected allowed us to obtain an overall idea of the resident population in the Ramsey County, MN nursing homes. The mean of “Average Age of Residents” was 80.23 years old with the maximum response being 97.39 years old and the minimum response being 66.00 years old. The most frequent response for “Most Common Medical Diagnosis of Residents” was dementia, with six facilities reporting that diagnosis. The “Current Facility Occupancy (# of beds occupied)” could not be accurately interpreted due to the mixed responses of percentages and non-percentages. Overall, of the 15 facility directors who completed the survey, 8 indicated that their facility is currently involved with any AAT programs at this time and 7 indicated they were not (Figure 1).



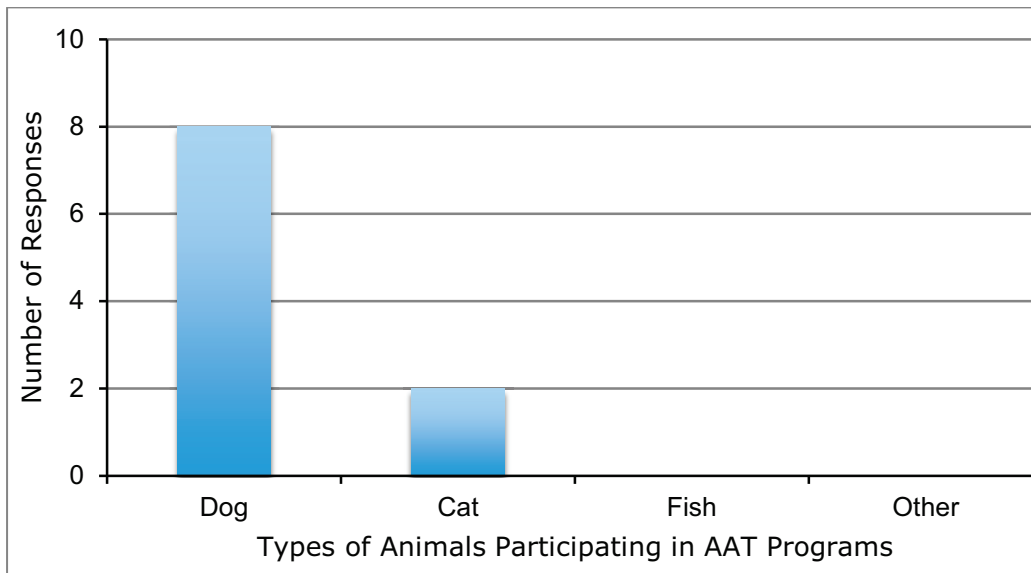
**Figure 1: Current Usage of Animal Assisted Therapy (AAT) in nursing home facilities in Ramsey County, MN**



All of the eight respondents that reported having AAT programs visit their facility regularly report that less than 70% of the residents participate in these programs. Three of those nursing homes reported 60-69% of residents participate and three reported that 50-59% of residents participate. The remaining two indicated that less than 50% of their residents participate in these visiting programs. Even though these results indicate that not all residents are participating, all eight of the directors reported that they would recommend AAT to another nursing home facility director.

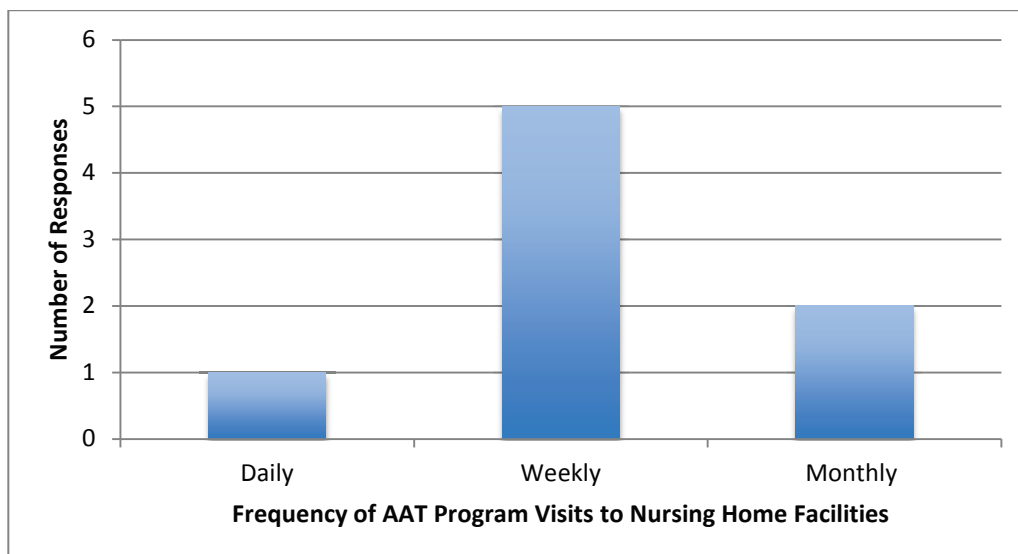
Of the eight respondents that currently are utilizing AAT, 75% of those nursing homes reported that they do not have a live-in animal. The two facilities housing live-in animals both indicated that the animals were owned by the facility. One nursing home housing live-in animals reported having fish and the other reported having fish and birds on-site (Figure 2).

**Figure 2: Types of animals participating in AAT programs at nursing home facilities in Ramsey County, MN.**



Facility directors currently involved in AAT programs reported approximately how often AAT program(s) visited their facility. The majority of those directors indicated that the visits were weekly. One nursing home has visits daily and two reported monthly visits (Figure 3). The types of animals that were involved in any visiting AAT programs included dogs and cats. All eight facilities reported having dogs visit and two reported having cats visit.

**Figure 3: Frequency of AAT visits to nursing home facilities in Ramsey County, MN.**



Seven facility directors indicated that they do not currently use AAT in their facility. However, based on their “Other. Please Specify” responses, which included statements such as “We have volunteers that bring in therapy animals,” “Staff have animals that provide joy and companionship needed by patients,” and “We have volunteers that bring their animals some are certified and others are not. We don’t have a specific AAT program that comes in” it appears that the validity and reliability of our survey is in question. Based on the definition of AAT presented in this paper those reasons listed would have qualified those facility directors to selected “Yes” to the question of “Is your facility currently involved with any animal assisted therapy (AAT) programs at this time?”

Other reasons selected as reasons why AAT is not being utilized in their facility include lack of funds (two respondents), lack of resources (three respondents), and lack of information or education on AAT programs (Figure 4).

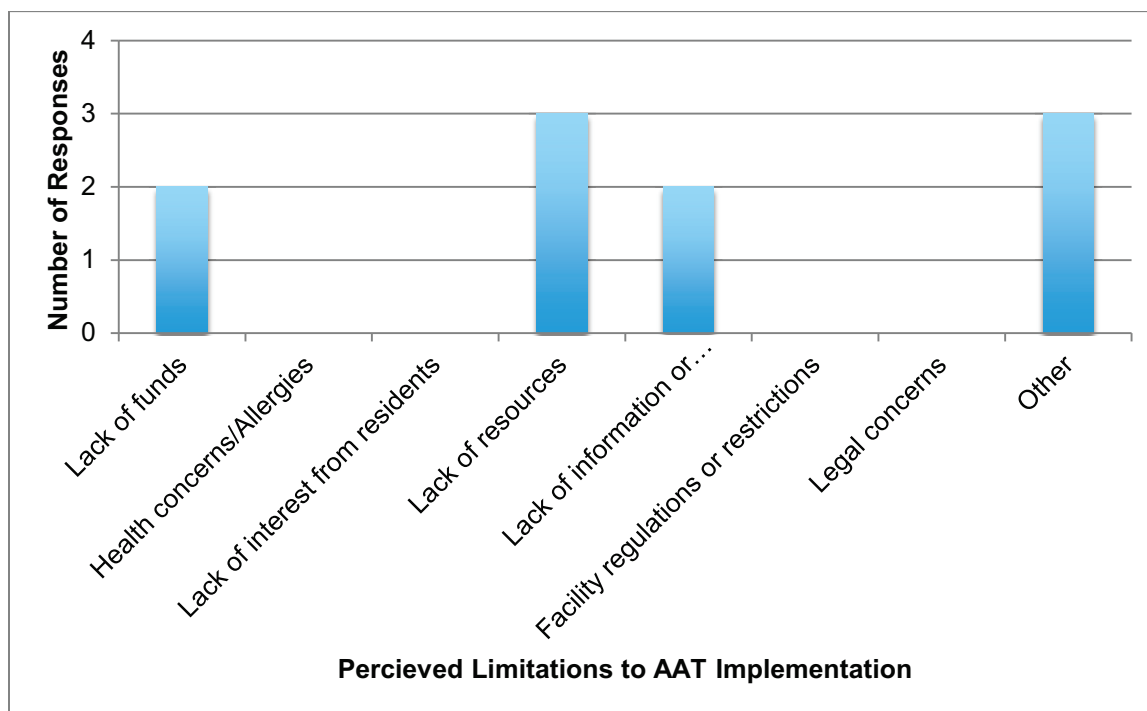
The seven facility directors who indicated they are currently not using AAT were asked to answer if their facility would be interested in starting an AAT program. Four participants responded yes and two responded no. In addition these facility directors were asked if AAT programs had been previously offered in their facility. One participant said yes, three said no and three were unsure.

### **Conclusion**

In conclusion, our results were collected and then analyzed via Microsoft Excel and Qualtrics programs. Tables are provided to demonstrate the findings. In the end, 15 nursing homes participated in our study within the time constraints. There were four separate areas that we collected data on through our study. These areas included the current usage of animal assisted therapy in nursing home facilities in Ramsey County, MN, the types of animals participating in

AAT programs at nursing home facilities in Ramsey County, MN, the frequency of AAT visits to nursing home facilities in Ramsey County, MN, and the limitations for usage of AAT program(s) reported by nursing home facilities in Ramsey County, MN. The reasons as to why certain facilities do not have AAT programs were also identified. The data presented above demonstrates the findings from our overall study. When further analyzed it seemed as though a few participants may have misinterpreted the question “Do you currently use AAT in your facility?” This could have led to inaccurate answers and ultimately questionable validity and reliability of our survey.

**Figure 4: Limitations for usage of AAT program(s) reported by nursing home facilities in Ramsey County, MN.**



## **Chapter 5: Discussion and Conclusion**

### **Introduction**

In this chapter we discuss the findings of the study. We begin with exploring limitations that were encountered during the data collection portion of the study. We also discuss recommendations of any areas for potential improvement for the method, design or data collection portions of the study and possible research opportunities going forward. Lastly, a detailed conclusion is provided to conclude data analysis and research study findings.

### **Findings**

Overall, the majority of participants who responded to the proposed AAT research study questionnaire indicated that their nursing home facility is currently implementing some type of AAT program at this time. In various studies that we reviewed, respondents who currently use AAT programs at their facilities consider these programs to be both effective and beneficial for the residents living in their facility. Of the participants who responded ‘yes’ to currently utilizing AAT programs at their facility, each of them would recommend AAT programs to other nursing home facilities, indicating that they feel these programs are beneficial to their residents. Even though resident participation varied from one facility to another, each facility that offered the AAT program had resident participation. This indicates that when AAT programs are offered in the facility, residents do have an interest in participating in the AAT program. As stated in chapter 1, companion animals have been greatly utilized for therapeutic purposes in a variety of different age groups and settings. Companion animals may help to lessen physical, psychological and emotional problems in persons of the elderly population. Our study was responsible for primarily determining the current usage of AAT in nursing home facilities in Ramsey, County MN. Through our study we found that, of the 15 facility directors who completed the survey, 8

indicated that their facility is currently involved with an AAT program at this time. We also determined if those who are currently utilizing AAT programs in their facility would recommend AAT programs to other facilities at this time. Our study was also responsible for determining the frequency of AAT programs in these facilities, what type of animal was being utilized and the resident participation in these AAT programs. Our findings indicated that the majority of respondents had weekly AAT visits, the types of animals that were involved in any visiting AAT programs included dogs and cats, and less than 70% of residents participate in the provided AAT programs.

The questionnaire used in this research study was designed with the intent to not measure specific parameters such as the physical, psychological and emotional benefits of AAT programs on the elderly population but instead the current usage by nursing home facilities. Due to the low complexity of the questionnaire it is unable to be determine what benefits, if any, the AAT programs have on the residents overall health and well-being, but the study was able to determine that the nursing home facilities in Ramsey, County MN are utilizing AAT programs and residents are participating at each facility.

### **Limitations**

One major limitation encountered during this study was the inability of research personnel to reach facility directors directly and speak to them about the research project. This inability to contact facility directors did not allow research personnel to discuss and present the research project and gain further consent. Another of the limitations for our study included facility directors declining to participate in the research project once they were contacted. The one facility director that declined expressed confusion about the study and ended the phone

conversation prior to the research personnel having the ability to clarify. Such an interaction and response may have been avoided by an in-person appointment.

Further limitations included the questionnaire possibly being completed by a person other than the facility director. It was determined by research personnel that in order to maintain uniformity across the study only facility directors would be contacted. Because it was distributed via internet there is no way to confirm it was the facility director and not support staff that completed the survey.

Additional limitations included surveys not being received by the facility director and/or completed before the expiration of the link. One facility director in particular contacted research personnel after providing us with her email address because she had not received the link within a weeks' time. It was then determined that some of these emails could have potentially been weeded out by a company's firewall or sent directly to a Spam folder. Because of the anonymous set-up of this study it was determined best not to re-contact all facility directors and ask if they had received the emails, in order to maintain the integrity and privacy of the respondents.

Restricting our population to Ramsey County may have posed another possible limitation. Readers of our study may generalize the analyses concerning all AAT usage, when in actuality the analyses are only general for Ramsey County, Minnesota. A larger sample population would have allowed for a larger response pool and possibly more widely applicable data.

### **Reliability**

Upon review of the data it appeared there were further limitations in the readability and therefore reliability of the survey. Based upon the fill-in answers it seemed that some of the questions were not clearly understood by the facility directors and there appeared to be incorrect

answers selected because of that extrinsic factor. In particular the main question of “Is your facility currently involved with any animal assisted therapy (AAT) programs at this time?” appeared to not be clearly interpreted. Of the 7 facilities that selected “No” three respondents provided “Other. Please Specify” responses that based on the definition of AAT presented earlier in this paper those reasons would have qualified a “Yes” response. Such response included “We have volunteers that bring in therapy animals,” “Staff have animals that provide joy and companionship needed by patients,” and “We have volunteers that bring their animals some are certified and others are not. We don’t have a specific AAT program that comes in.” After reading such responses it appears that the validity and reliability of our survey is in question and the results could not be interpreted straightforwardly.

### **Recommendations**

If another survey were to be distributed it may benefit participants and increase the validity and reliability of the survey to have a brief introduction of the survey defining and clarifying what AAT is prior to the participants answering any questions. After reviewing the survey answers it is evident that participants may have benefited from additional clarification prior to taking the survey. In addition, meeting with the facility directors in person and having them take the survey at that appointment may increase the overall response rate. That was not done in this particular study due to time and budget restraints. Finally, utilizing a larger sample population in future studies would allow for a larger response set and potentially provide researchers with more statistically significant data. Further research could include the larger Minneapolis metro area where more data could be collected and further analyzed. Including a larger area may also aid in increasing response rates.



Further research on this topic could most certainly be done at a future date. For example, more specific research could be done in regards to the particular physiological or psychological benefits AAT has on residents. Future researchers could branch off of our study and look into what specific benefits are seen in those patients who are exposed to AAT. Data showing the specific beneficial outcomes associated with AAT may aid in nursing home facilities willingness to provide such programs.

### **Conclusion**

Upon conclusion of our study on AAT it is clear that from the data we collected, extensive further investigation into this subject may be done. Furthermore, improvements on our study may be made and the study could be performed again in order to obtain more conclusive data. Although our particular study may not have obtained data that was representative of a large population, we were still able to attain information that may benefit those who are interested in the usage of AAT, particularly in Ramsey County, Minnesota. The research question that we posed at the beginning of our project, and all of its components was answered to the best of our ability. Those interested in learning about the usage of AAT in Ramsey County, Minnesota could potentially use the data we have obtained in order to assess usage, types of animals, and participation rates. Thus our study produced data that we believe could potentially aid those in need of detailed information in regards to the usage of AAT in Ramsey County, Minnesota.

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**APPENDICIES**

**APPENDIX A: Animal Assisted Therapy Usage Survey**



## Current Usage of Animal Assisted Therapy Survey

### I. Facility Demographics

Current Facility Occupancy (# of beds occupied): \_\_\_\_\_

Most Common Medical Diagnosis of Residents: \_\_\_\_\_

Average Age of Residents: \_\_\_\_\_

### II. Animal Assisted Therapy Usage

Is your facility currently involved with any animal assisted therapy (AAT) programs at this time?

- Yes (1)  
 No (2)

If Yes Is Selected, Then Skip To Does your facility currently have a l...If No Is Selected, Then Skip To What are the main reason(s) why AAT i...If No Is Selected, Then Skip To What are the main reason(s) why AAT i...

Does your facility currently have a live-in animal?

- Yes (1)  
 No (2)

Answer If Does your facility currently have a live-in animal? >Yes</span> Is Selected

Who owns the live-in animal(s)?

- Resident (1)  
 Facility (2)  
 Both (3)

Answer If Does your facility currently have a live-in animal? >Yes</span> Is Selected

What type of animal(s) are involved in the live-in AAT program? Please check all that apply.

- Dog (1)  
 Cat (2)  
 Fish (3)  
 Other. Please Specify (4) \_\_\_\_\_

Answer If Is your facility currently involved with any animal assisted therapy (AAT) programs at this time? Yes Is Selected

Approximately how many times per week does the AAT program(s) visit your facility?

- Daily (1)
- Weekly (2)
- Monthly (3)

Answer If Is your facility currently involved with any animal assisted therapy (AAT) programs at this time? Yes Is Selected

What type of animal(s) are involved in any visiting AAT programs? Please check all that apply.

- Dog (1)
- Cat (2)
- Fish (3)
- Other. Please Specify (4) \_\_\_\_\_

What is the approximate percentage of residents who participate in visiting AAT programs?

- 90-100% (1)
- 80-89% (2)
- 70-79% (3)
- 60-69% (4)
- Less than 50% (5)

Would you recommend AAT programs to other nursing home facility directors?

- Yes (1)
- No (2)

Answer If &nbsp;Is your facility currently involved with any animal assisted therapy (AAT) programs at this time? <o:p></o:p> <span style="font-size:22px;">No</span> Is Selected

What are the main reason(s) why AAT is not being utilized in your facility? Please check all that apply.

- Lack of funds (1)
- Health concerns/ Allergies (2)
- Lack of interest from residents (3)
- Lack of resources (4)
- Lack of information or education on AAT programs (5)
- Facility regulations or restrictions (6)
- Legal concerns (7)
- Other. Please Specify. (8) \_\_\_\_\_

Answer If Is your facility currently involved with any animal assisted therapy (AAT) programs at this time? <span style="font-size:22px;">No</span> Is Selected

Have AAT programs been offered in your facility previously?

- Yes (1)
- No (2)

Answer If Is your facility currently involved with any animal assisted therapy (AAT) programs at this time? <span style="font-size:22px;">No</span> Is Selected

Would your facility be interested in starting an AAT program?

- Yes (1)
- No (2)

## **APPENDIX B: Phone Call Script**

Hello Mrs./Mr. \_\_\_\_\_, my name is Lauren Duerst and I am a student with the Bethel University Physician Assistant Program.

I, along with my classmates Ashley Young and Natalie Nikonovich, am conducting a research project as part of our Masters capstone.

The purpose of our study is to determine the current usage of Animal Assisted Therapy (AAT) programs for residents living in nursing home facilities in Ramsey County, Minnesota.

In order to do so we are contacting each nursing home facility in Ramsey County Minnesota inquiring each to participate in a brief online survey.

Does this sound like something you may be interested in?

The online survey itself should only take 5 minutes or less....

On behalf of my group members, and myself we thank you for your attention and we appreciate you taking the time to speak with us regarding our research study. Have a good day.

Thank you for taking the time to speak with me regarding the following information about our study. We understand that your schedule is extremely busy and we truly appreciate you taking the time out of your day.

Our intent is to compile the information regarding the usage of AAT programs in nursing home facilities in Ramsey County, Minnesota. We are looking to collect the thoughts and opinions of each facility director regarding specific usage of AAT programs and potential barriers that may accompany the implementation of such AAT programs in your facility.

Shortly after this phone call, the online survey that you agreed to participate in completing will be sent to your preferred email.

Once the survey is received you have one week to complete it. If you become too busy and forget to complete the survey within one week, one reminder email with the survey link will be sent to you. The survey will include one set of demographic questions and another set of questions pertaining to AAT.

Once all the responses have been obtained, percentages will be calculated and used to describe the current utilization of AAT programs in nursing home facilities in Ramsey County, MN. Once all the data has been calculated and analyzed, it will be available for those who participated in the study to access.

Thank you for your time.