PERCEPTIONS OF STAFF ON THE ADDITION OF AN
ANIMAL-ASSISTED ACTIVITY AT A
REGIONAL CANCER CENTER

A Thesis
Presented
to the Faculty of
California State University, Chico

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Master of Arts
in
Psychology
Psychological Science Option

by
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PERCEPTIONS OF STAFF ON THE ADDITION OF AN
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Jessica Bibbo

Spring 2011

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DEDICATION

This work is dedicated to my mom, my dad, Missenda, and Mary.
ACKNOWLEDGEMENTS

I am grateful to the Enloe Medical Center, the Enloe Regional Cancer Center, and the staff who helped make this project possible. This project could never have been done without the volunteer teams. I am forever grateful to the people who volunteered to share their loving relationship with a canine companion to the staff, patients, and caregivers at the Enloe Cancer Center.

I have been fortunate to have had a thesis committee whose wide range of expertise enabled for the creation of a much stronger study and thesis than would have been possible without each member. I am thankful for their help and guidance. Special thanks are due to my Thesis Chair, Dr. Kline, whose mentorship and support have gone well beyond the scope of this study.

While this thesis is dedicated with bottomless love and appreciation to my immediate family, I hold deep gratitude to other family and friends as well. I would like to thank Mandy, Megan, and Michaela for their unlimited encouragement. Finally, profound appreciation is due to Neko-san, Trash Bear, and above all, Woot, my family whose love and understanding enabled me to produce this work.
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ABSTRACT

PERCEPTIONS OF STAFF ON THE ADDITION OF AN ANIMAL-ASSISTED ACTIVITY AT A REGIONAL CANCER CENTER

by

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Master of Arts in Psychology

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Spring 2011

This study was grounded in the emerging view of animal-assisted interventions as a complementary and alternative therapy for cancer patients. The study explored the perceptions of staff at a regional cancer center on the addition of a volunteer-based animal-assisted activity. The medical center had recently adopted a patient-centered care model. The intervention aimed to incorporate the model’s integrative approach, while simultaneously further establishing animal-assisted activities as appropriate and effective complementary therapies. Staff perceptions regarding the effects of the intervention on patients and informal caregivers, as well as staff pet ownership were examined. The study also explored the perception of the effect of the
intervention on staff communication due to the documented importance of staff intercommunication on job satisfaction in healthcare settings. Descriptive statistics and Pearson’s product-moment correlations were conducted to determine staff perceptions and the relationships between those perceptions. Staff perceived that the intervention had been beneficial for both patients and caregivers. Staff who had more direct and indirect contact with the visiting teams were more likely to perceive the intervention as being beneficial. Attitudes toward dogs in general and pet ownership were related to attitudes toward the intervention. The results indicated that the handler in the volunteer visitation team played an equally important role (with the dog) in staff acceptance of the animal-assisted activity. Staff did not agree on the influence of the intervention on staff communication. The results illustrated overall staff acceptance of the intervention and agreement for animal-assisted activities to continue at the facility.
CHAPTER I

INTRODUCTION

Introduction

This study explored the perceptions of the staff at a regional cancer center on the addition of a volunteer animal-assisted activity program. The medical center in which the regional cancer center was housed had adopted the Planetree model of patient-centered care in 2008. Planetree is a non-profit organization that provides hospitals with the tools needed to facilitate care based on their mission to provide health care models that, “...integrate human caring with the best of scientific medicine and complementary healing traditions” (Enloe Medical Center, 2010, para three). This study was specifically designed to incorporate Planetree’s Acute-Care Components of Family, Friends and Social Support; Complementary Therapies; and Healthy Communities (Planetree, 2009).

The introduced intervention was intended to promote the model’s commitment to the incorporation of complementary adjunctive therapies in the provision of healthcare. The aim of introducing a community volunteer-based intervention was to establish a connection between the medical center and the community that would continue beyond the duration of this study.

This study was grounded in the emerging view of animal-assisted interventions as appropriate and effective complementary and alternative therapies for cancer patients. The Planetree Coordinator at the Enloe Medical Center was contacted in
the spring of 2010 to assess whether the institution would be amenable to the addition of an animal-assisted activity in the Enloe Regional Cancer Center. Staff from various departments within the Enloe Medical Center had already begun working toward the addition of such interventions. In order to introduce any intervention including an animal, specific protocol had to be developed. Approval from the medical center’s Infection Control Committee was also necessary.

The document, “Enloe Medical Center Animal Assisted Activities (AAA),” was approved in the summer. The document was largely based on “Guidelines for Animal-Assisted Interventions in Healthcare Facilities,” published in the *American Journal for Infection Control* in 2008. Enloe Medical Center’s Volunteer Services department established the PAWS (Pets Assisting With Service) volunteer program. The document, “Volunteer Service Description PAWS Volunteer. Position Description & Competency,” was published in the fall of 2010. The human-canine volunteer teams followed the procedures established in both documents. The teams who participated in this intervention were the first to be enrolled in the PAWS program. The intervention began in February of 2011, and as of the writing of this thesis, the intervention remains ongoing.

The human-canine volunteer teams were all registered with the Delta Society, a national therapy and service animal organization. Each team followed strict guidelines established by the Delta Society and carried a liability insurance policy through the organization. In addition, teams adhered to the specific protocol and procedures set by the Enloe Medical Center and the Enloe Regional Cancer Center.
The main goal of the study was to evaluate how the addition of such an intervention directly impacted staff. The study evaluated the perceptions of all staff, both healthcare providing and administrative. The other focus of the study was to explore how the anticipatory perceptions prior to the introduction of the intervention correlated with staff perceptions after the intervention had been implemented.

Animal-assisted interventions have been shown to facilitate communication in healthcare settings (e.g., Bernstein, Friedmann, & Malaspina, 2000; Winkler, Fairnie, Gericevich, & Long, 1989). The intervention’s effect on staff intercommunication was assessed. The degree to which interacting directly with the human-canine teams in general, and with each member, was also explored. It was hypothesized that staff who had more interaction with the teams would have more favorable perceptions of the teams and their effect at the facility. The study also looked at the degree to which staff observed patients and caregivers interacting with the teams and the degree to which patients and caregivers spoke to staff about the teams. Again, it was expected that staff who had experienced more observation and communication would have more positive perceptions of the intervention.

Animal-assisted activities are not appropriate for everyone, and participation should always be voluntary (e.g., Lefebvre et al., 2008). People who have fears, allergies, or dislike of the animal (in this case, dogs) should not participate. Procedures were put in place so that individuals who did not wish to interact with the visiting teams would not have to. There is a great deal of evidence that individual perceptions toward animals and dogs have a strong influence on how individuals perceive animal-assisted
interventions (e.g., Friedmann, Son, & Tsai, 2010). Perceptions toward animals often are a result of past and present experience with animals. The study also explored staff members’ present and past companion animal history and attitude toward dogs in general.

The foundation for this study also rested on the established mutuality of experience that develops between cancer patients and their informal caregivers. This was the first study to address the impact that an animal-assisted activity may have on informal caregivers in an outpatient setting. The beneficial effects that the intervention had on both patients and caregivers were estimated through reported staff observations. The perceptions of patients and caregivers were not included in the study.

Questionnaires were distributed in the break rooms in each department where the intervention had taken place four weeks after the formal introduction of the animal-assisted activity. Participation from the 55 staff members at the facility was voluntary and anonymous. There was a response rate of 61.8%.

Self-selection of participation was a major limitation in this study and may have influenced the validity of the results. The questionnaire used was developed specifically for this study; neither the validity nor the reliability had been established for this instrument. The levels of patient interaction and levels of expertise vary greatly in healthcare staff; however, the methodologies put in place to ensure anonymity did not allow for these variations to be taken into account in analyses. The comparisons between anticipatory and actual perceptions toward the intervention would have benefited from a pre-test post-test design. However, circumstances concerning the commencement of the animal-assisted activity did not allow for a pre-test to occur.
Despite these general limitations, there was general staff agreement that animal-assisted activities should continue at the facility. The staff expressed positive perceptions of the intervention overall and generally agreed that it had been beneficial for cancer patients and their caregivers. The aim of the intervention continuing beyond this empirical study appears to have been met.
CHAPTER II

LITERATURE REVIEW

Introduction

This study incorporated the emerging acceptance of animal-assisted interventions as a complementary and alternative therapy for cancer patients, the relationship between the perceptions of health care staff and their job satisfaction, the established mutuality of the health care experience that is shared between cancer patients and their caregivers, and the Planetree model of patient-centered care adopted by the Enloe Regional Cancer Center.

Animal-assisted Interventions

Animal-assisted interventions (AAI) are based upon the recognition of the human-animal bond and its potential health benefits. Animal-assisted interventions are made up of two distinct types of programs: animal-assisted activities (AAA) and animal-assisted therapies (AAT). AAA, such as canine visitation programs, provide opportunities for motivational, educational, recreational, and therapeutic benefits that can be delivered in a variety of environments (Delta Society, 2009). AAT are interventions with specific goals and objectives in either individualized or group settings. AAI are sometimes referred to as “pet therapy”; however, this term is not often used in empirical analyses. Though there is a definitive difference between animal-assisted activities and therapies,
the terms have often been used interchangeably in the literature (Wells, 2007). This study implemented an animal-assisted activity in an outpatient oncology center. The methodologies of AAA and AAT overlap a great deal; consequently, studies involving animal-assisted therapy have been included.

Animal-assisted interventions have been academically studied for over 30 years, and within the past decade, empirically based research has become more prevalent. The field had previously relied heavily on anecdotal evidence and case studies. This shift in research has led to an increase in the validity and acceptance of animal-assisted interventions as therapeutic tools. Animal-assisted interventions have been shown to have a positive impact on people’s physiological and psychological health.

Friedmann, Katcher, Lynch, and Thomas (1980) are often credited with providing the first empirical evidence of the influence of animals on physical health. Their study found that people who owned a companion animal had a significantly higher rate of survival than those who did not over a one year period following discharge from a coronary care unit. While the validity of the results has been questioned by some, the hypotheses that the findings generated furthered the field and served as an impetus for research that followed.

In recent years, meta-analyses have begun to emerge regarding the efficacy of animal-assisted interventions. One such analysis of five empirical studies concluded that canine AAI can significantly reduce depression (Souter & Miller, 2007). A more comprehensive meta-analysis of 49 empirical studies found animal-assisted activities to have a significant impact on both medical difficulties and emotional well-being (Nimer &
Lundhal, 2007). In their discussion, Souter and Miller addressed gaps they had found in the AAI literature, not the least of which was a lack of solid empirical design which had a direct effect on the low number of studies included in their analysis.

The authors addressed issues of design and areas of research that could improve the validity within the field and serve to prove its efficacy and increase its acceptance outside of the field. Souter and Miller addressed the lack of physiological evidence, the possible long-term effects of AAI, the effects of AAI in an individual versus a group setting, the lack of studies using animals aside from canines, and a differentiation of the effects of AAA verses AAT. These issues were beyond the scope of this study; however, this study did focus on one of the major gaps in the literature, whether and to what degree the effects of an animal-assisted intervention may be attributable to the human volunteer, referred to as the handler, in the visitation team.

Possible Underlying Mechanisms for the Efficacy of AAI

E.O. Wilson’s biophilia hypothesis is often cited as a possible underlying mechanism in animal-assisted interventions; however, the concept may be too overarching and broad to serve as the theoretical foundation for AAI (Joye, 2011). Wilson defined biophilia as, “the innately emotional affiliation of human beings to other living organisms” (Wilson, 1993, p.31). If this were to be the true mechanism at work there would most likely be a greater diversity of species used in animal-assisted interventions.

Dogs are the animal used most often in animal-assisted interventions (Wells, 2009). There is good reason for this; dogs can be trained, follow verbal and physical
commands, dogs are a familiar species, and most people perceive dogs as friendly. Dogs are also perceived to be nonjudgmental. Consequently, they have been considered to be social catalysts that can facilitate interactions between people (Wells, 2009). McNicholas and Collins (2000) found that being in the company of a dog facilitated social interaction between strangers. They also found that a dog can act as a social “ice breaker,” providing a topic of conversation in subsequent meetings even when the dog is not present.

It is important to emphasize the influence of perceptions towards dogs and how they directly impact AAI. Wells (2004) found that the “social catalyst” effect was specific for each dog. The effect was found to be stronger with a puppy and a Labrador Retriever compared to a Rottweiler. While this is probably not surprising, it is of great importance in the design and implementation of an animal-assisted intervention. There is evidence that the physiological responses to stressors in the presence of an animal are positively correlated to their perceptions of that animal (Friedmann, Locker, & Lockwood, 1993). The perceptions that people hold toward dogs will have a direct impact on their perceptions of the efficacy of an animal-assisted activity that employs them.

These qualities may act to decrease the physical stress response (Barker, Knisely, McCain, Schubert, & Pandurangi, 2010; Wells, 2009). These physiological responses may be due to dogs’ ability to elicit physical touch. Physical touch can have a relaxing effect, but is often awkward between people whereas it comes naturally between humans and dogs (Beck & Katcher, 1996).
The neurochemical processes which take place in such interactions have been explored. Neurochemicals associated with “affiliation behavior” (β-endorphin, oxytocin, prolactin, β-phenylethylamine, and dopamine) increased in both humans and canines after a positive interaction (Odendaal & Meintjes, 2003). The same study found that the blood level of cortisol decreased significantly in humans, though not in canines. Beneficial physiological consequences from interacting with companion animals can clearly occur in people.

Dogs’ nonjudgmental nature, their ability to elicit physical contact, and the endocrine system response may act together to provide social support. Social support is critical for human well-being, and especially for people going through transitions and stressors. It has been suggested that the efficacy of animal-assisted interventions most likely comes from the social support it provides (Fine & Beck, 2010).

When a volunteer animal-assisted activity takes place, the dog is not the only visitor; there is a handler as well. This person, almost always a stranger, is also providing direct social support to the patient. The human element is an essential component in animal-assisted activities and must be included in discussions concerning their efficacy. In a study comparing the preference of nursing home residents to visits from a dog accompanied by a handler (who was not allowed to speak) or a friendly young adult by him or herself, results found that they were equally liked. However, the dog visit did elicit more physical touch (Kaiser, Spence, McGavin, Struble, & Keilman, 2002). Many empirical studies emphasize that the human visitor plays a significant role in such interventions (Chur-Hansen, Stern, & Winefield, 2010).
The volunteer teams also provide a welcome distraction in the healthcare setting. Their value as a distraction or diversion will be further addressed in the section discussing AAI as a complementary and alternative medical intervention for cancer patients. Distraction may serve as another significant underlying mechanism of animal-assisted interventions, which may provide a welcome alternative focus of attention for healthcare patients.

Animal-assisted Activities in Healthcare and Oncology

Animal-assisted Activities in Healthcare

Friedmann et al.’s (1980) study is widely cited as a seminal work in the establishment of animal-assisted interventions as a valid therapeutic tool. In 1995, the study was replicated by Friedmann and Thomas, two of the original authors, in order to address some methodological deficits. The authors again explored one-year survival rates of people who had survived an acute myocardial infarction. The results showed that companion animal ownership and high social support both independently predicted survival rate. Dog ownership was predictive of survival independent of high social support, but cat ownership was not. These results indicate that there is most likely a quality unique to dog companionship.

A great deal of the literature concerning the impact of animals on human health explores the effect of pet ownership (Katcher & Beck, 2010). Because companion animals play an important role in people’s lives, it is necessary to include these relationships in interventions focused on improving mental well-being (Friedmann et al.,
Animal-assisted activities are available to people independent of their pet ownership history or status. This review of the literature will not focus on studies of pet ownership; it will concentrate instead on animal-assisted interventions’ effect on the mental and physical health of oncology patients and in healthcare in general.

The field of nursing has had a large influence on the acceptance of animal-assisted interventions in healthcare settings. Many of the articles advocating the efficacy of such interventions have been written by Registered Nurses and/or published in nursing journals (Barba, 1995; Brodie & Biley, 1999; Cole & Gawlinski, 2000; DeCourcey, Russell, & Keister, 2010; Johnson, Meadows, Haubner, & Sevedge, 2008). Jorgenson (1997) reviewed the existing literature and concluded, “Nurses are in a perfect position to pursue AAT research. Our philosophy embraces total well-being. Animal Assisted Therapy combines both the physical and emotional components of health” (p. 254). Jorgenson also suggested that the AAT may decrease stress by providing an alternative focus of attention as well as changing the patients’ perceptions of the healthcare environment for the better.

Cole, Gawlinski, Steers and Kotlerman (2007) empirically demonstrated the health benefits of AAT on heart failure patients in a study using random assignment, a control group, and a robust sample size. The study found that patients who had visits with an AAT team had significantly lower self-reported state anxiety and significantly greater decrease in both systolic pulmonary artery pressure and pulmonary capillary wedge pressure during and after the intervention compared to the control groups. Having
both physical and self-report evidence made this study unique, but what made this study extraordinary in the literature was the use of the control groups. One control group had no intervention and one control group received a visit from a volunteer for the same amount of time as the AAT visit (12 minutes). In order to account for the human factor described above, the authors tried to use the same human volunteers that were the handlers in the AAT teams. Their methodology gave further credence to their findings that AAT can serve as an adjunctive therapy to lessen stress and that the canine serves a unique role in the intervention.

There is also evidence that AAI can have significant positive impacts on pediatric patients and their parents in healthcare settings. A recent exploratory study concluded that AAT can decrease the systolic blood pressure of hospitalized children (Tsai, Friedmann, & Thomas, 2010). A randomized pilot study found that such an intervention significantly decreased the amount of pain experienced by children following surgery (Sobo, Eng, & Kassity-Krich, 2006). Wu, Niedra, Pendergast, and McCrindle (2002) conducted a study on a pediatric oncology ward examining the effect of an animal-assisted activity on the perceptions of children and their parents. The study found that the visits helped to relieve stress and normalize the transition into the hospital setting. All three studies suggested distraction as an underlying mechanism in the interventions’ efficacy. These studies proposed that the addition of an animal-assisted intervention focused the attention of pediatric patients and their families away from the disease and medical setting, which led to beneficial effects on their mental well-being.
There is growing evidence that animal-assisted interventions can play a role in the treatment of cancer patients. A pilot study published in 1984 showed an animal-assisted activity could serve to provide comfort and alleviate fears in older adult terminal cancer patients (Muschel, 1984). Orlandi et al. (2007) provided evidence that an animal-assisted activity decreased depression as well as increased arterial oxygen levels in adult cancer patients during chemotherapy compared to a control group.

The research team of Johnson, Meadows, Haubner, & Sevedge (2003) found that animal-assisted interventions met the National Cancer Institute’s requirements of a complementary and alternative medical intervention. In 2008, the same team explored the effects of an animal-assisted activity on cancer patients’ mood, self-perceived health and sense of coherence during radiation therapy. Participants in this study were randomly assigned to receive either an animal-assisted activity, visits from a friendly human, or take part in quiet reading for fifteen minutes prior to radiation therapy. People who received the animal-assisted activity reported that their emotional health had improved over the four-week period, while participants in the other two groups reported that it had declined. The majority of patients in each group would have recommended the intervention to other cancer patients. The same patients reported as having perceived the activity as a welcome distraction prior to radiation treatment.

O’Conner-Von (2010) stressed the role animal-assisted therapy can have in creating a more comfortable environment for patients, their family and staff. The ability to facilitate communication and being cost-effective are qualities often cited for
introducing animal-assisted interventions in the nursing literature (Barba, 1995; Carmack & Fila, 1989; Cole et al., 2007; DeCourcey et al., 2010).

The efficacy of animal-assisted interventions as a complementary and alternative therapy for cancer patients is thought to stem from its ability to shift the focus of attention. Various authors have stressed the ability of volunteer teams to distract the focus away from the stressors inherent in the healthcare experience (Barba, 1995; Cole & Gawlinski, 2000; Johnson et al., 2008; Moody, King, & O’Rourke, 2002; Sobo et al., 2006). Adjunctive therapies that are employed specifically to refocus patient attention are known as diversional therapy. Animal-assisted interventions have been considered to be forms of diversional therapy (Lee, 2003).

Finally, Johnson et al. (2003) wrote of complementary and alternative medicine techniques’ ability to “enable [patients] to be active participants in both managing their disease and expanding their quality of life” (p. 66). Patients initiate the contact with the volunteer team in an animal-assisted intervention. It is up to the patient whether or not, and the degree to which, he or she participates in such an intervention. Thus, the patient gains a sense of control and autonomy in an environment where his or her role is primarily passive. This may be the reason why patients overwhelmingly support the inclusion of complementary and alternative medical interventions (Coss, McGrath, & Caggiano, 1998). Johnson et al. (2008) found that participants would have preferred the intervention to have been introduced at the beginning of treatment. The reason given was that the CAMs served to lessen apprehension and fear of the unknown. This possible explanation may be tied to the effects of distraction; perhaps a shift of focus
from the unfamiliar setting and pending procedures helps patients to relax? However, there may be a stronger argument to be made that the larger underlying mechanism at work may be the increased social support provided by an animal-assisted intervention.

**Future Directions for AAI**

The dearth of empirical evidence for the beneficial effects of animals, particularly dogs, on human physical and mental health remains (Wilson, 2010). In their review of the literature, Chur-Hansen et al. (2010) found two major gaps in the AAI literature: the need for empirical studies and the lack of control for other possible mechanisms at work in AAI (such as social support received from the handler). The authors also cited a need for future studies to explicitly state the level of interaction the patient had with the dog as well as the characteristics of the dog (such as sex and breed). These factors may also influence the outcomes of such interventions and inclusion of detailed methodologies will also allow for replication. Palley, O’Rourke, and Niemi (2010) expressed concern regarding the inconsistency of the methodologies employed in AAI studies and emphasized that AAI must empirically prove itself in order to be successful. The authors addressed their concern that such interventions were “generally characterized as a ‘push’ by enthusiastic advocates rather than a ‘pull’ by prescribing physicians” (p. 199).

For AAI to be welcomed into medical facilities, it is imperative that the people running the facilities have input on whether and how such interventions take place. Johnson, Odendaal, and Meadows (2002) suggested that any extra work by staff be kept to a minimum. The evidence for perceptions of healthcare staff towards the
addition of animal-assisted interventions will be discussed in greater detail below. The aim of the present study was to explore the perceptions of staff on the addition of an animal-assisted intervention in order to better understand how it may influence the workplace. It was also the author’s objective to include sufficient information to allow for replication.

Cancer Patients and Their Informal Caregivers

Cancer Patients

The experience of a cancer diagnosis is inherently stressful and demanding both physically and mentally. Stress, depression, and social support have all been shown to affect how a person copes with the disease, along with the progression of the disease itself. Stressful life experiences have been shown to be related to higher cancer mortality rates (Chida, Hamer, Wardle, & Steptoe, 2008). The physiological consequences of stress (activation of the HPA axis, etc.) have been directly linked to the progression of the disease. Antoni et al.’s (2006) review of the epistemological literature found an empirical basis for the connection between behavioral and biological influences on cancer. Their study concluded that social and behavioral factors, including mood and social support, can influence the progression (but not incidence) of the disease.

Spiegel and Giese-Davis (2003) provided evidence of a bidirectional relationship between cancer and depression. While some of the behavioral effects of cancer treatment (e.g., fatigue, weight loss) mimic that of depression, the evidence that social support plays a significant role in cancer management serves to underscore the validity of this bidirectional relationship. A recent study found that men and women who
were separated at the time of their cancer diagnosis had the lowest survival rates of all unmarried groups (widowed, divorced, never married) (Sprehn, Chambers, Saykin, Konski, & Johnstone, 2009). The authors hypothesized the difference was due to the combination of the recent loss of social support, additional strain, and abrupt change in the lives of separated adults.

Social support provides reinforcement for dealing with any stressor and plays a central role in coping with cancer (Antoni et al., 2006). The role of social support may be most important at the stage of initial diagnosis. A longitudinal study of cancer survivors found that those who had received greater social support during the first three months following diagnosis were more likely to positively reflect on the experience eight years later (Schroevers, Helgson, Sanderman, & Ranchor, 2010).

Cancer patients not only receive social support from family and friends, but also from the staff at healthcare facilities. Nurse-patient communication plays a significant role in how cancer patients deal with their diagnosis and treatment. In their review of the literature, Kruijver, Kerkstra, Bensing, and van de Wiel (2000) found that nurses’ communicative behavior played “. . . a crucial role in meeting the cognitive and more especially, the affective needs of patients with cancer” (p. 29). This finding underlies the importance of preventing burnout and compassion fatigue in healthcare staff which will be addressed later.

Informal Caregivers

An informal caregiver is an individual who provides unpaid care for another adult who is unable to care for himself or herself. Unpaid family caregivers are the largest
source of long-term care in the United States (The National Alliance for Caregiving [NAC] & American Association of Retired Persons [AARP], 2005). It is estimated that there are 52 million informal caregivers caring for people of varying ages with varying diseases in the United States. In 2009, the national estimate of newly diagnosed cancer cases was 1.5 million, and it was expected that many of these cancer patients would rely on an informal caregiver (National Cancer Institute [NCI], n.d.).

Caregiver burden is a subjective measure of the emotional strain that is experienced due to caregiving. The term overlaps with the concept of the stress experienced as a result of the role. Higher rates of burden have been correlated with various adverse mental and physical health consequences.

Higher levels of caregiver burden have been related to higher levels of anxiety and depression (Cannuscio, Jones, Kawachi, Colditz, & Berkman, 2002). The experience of caregiver burden may make caregivers more vulnerable to disease (Ratnakar et al., 2008). It has also been negatively correlated to overall health (Pratt, Schmall, Wright, & Cleland, 1985). Situational factors and events have been shown to have a stronger effect on burden than demographics (Wullschleger, Lund, Caserta, & Wright, 1996). Coping strategies have also been found to be determinants of caregiver burden (Pratt et al., 1985; Schultz & Beach, 1999).

**Effects of Caregiving for Cancer Patients**

The caregiver of a cancer patient must also go through a period of adjustment following diagnosis. The adjustment to the addition of the large and demanding role of caregiver can lead to additional stress and the mental and physical consequences of
caregiver burden. Being an active parent can lead to greater amounts of stress and negative affect (Kim, Baker, Spillers, & Wellisch, 2006). This was found in adults regardless of employment status. The same study found adults who were employed and not taking care of children found greater emotional meaning in their caregiving role than those who were not employed. The results indicated that additional roles do not have a simple additive effect, it is the resources that they demand which impact the stress experienced by a caregiver. The demands of care and socioeconomic resources available to the caregiver can either intensify or ameliorate the stress than the caregiver experiences (Gaugler et al., 2008).

Caregiving for individuals with cancer is a unique experience, just as the experiences of caring for individuals with dementias, stroke, and other illnesses are. Caring for cancer patients or those with dementia has been shown to result in significantly higher self-report ratings of both physical and psychological distress when compared to caring for people with diabetes or for frail, elderly people (Kim & Schultz, 2008). However, spouses caring for individuals with dementia experience greater adverse effects on overall well-being. The difference cannot be attributed to age or the employment status of the caregivers or the length of time providing care; the difference is thought to be due to “the dissimilarities between providing for a spouse with cognitive impairment versus one who is physically ill but lucid” (Clipp & George, 1993, p.539). Evidence that caring for a person with brain cancer is significantly more difficult than with other types of cancer furthers this assertion (Gaugler et al., 2005).
The relationship between the cancer patient and caregiver is often affected by the disease. Relationships are changed whether the caregiver is a spouse, family member or friend. There may be a feeling of “loss of togetherness” and the role can also affect outside relationships, which may exacerbate the negative effects of the role (Matthews, Baker, & Spillers, 2003). There is often a significant decrease in physical intimacy between spouses, which can lead to further emotional distress (Gaugler et al., 2005).

An increase in the caregiver’s perception of the cancer patient having unmet needs has been associated with higher rates of caregiver burden and poorer health of the caregiver (Sharpe, Butow, Smith, McConnell, & Clarke, 2005). The degree of physical pain experienced by a cancer patient may adversely affect the moods of caregivers. Caregivers treating advanced cancer patients with pain reported more tension, depression, and total mood disturbance than those who were caring for those who were not experiencing pain (Miaskowski, Kragness, Dibble, & Wallhagen, 1997). Finally, it has been established that there is a mutuality of psychiatric disorders between cancer patients and their caregivers, specifically in regard to fears and anxiety (Bambauer et al., 2006). The mutuality of experience between the caregiver and cancer patient has led to the common suggestion that both the caregiver and the patient be targeted with interventions addressing mental health issues (Bambauer et al., 2006; Kim et al., 2006; Matthews et al., 2003; Miaskowski et al., 1997; Sharpe et al., 2005).

Factors of Job Satisfaction for Healthcare Staff

A great deal of research has been conducted exploring the relationship between work stress and job satisfaction for health care professionals, particularly nurses.
Zangaro and Soeken’s (2007) meta-analysis of 31 studies found that nurses’ job satisfaction was negatively correlated to job stress; the correlation was most robust for nurses in the United States. Zangaro and Soeken’s (2007) meta-analysis was preceded by Blegen’s (1993) meta-analysis of 48 studies addressing the same topic, which described similar results. Blegen found a robust negative correlation for stress was the strongest to job satisfaction. Although these two analyses were separated by nearly fifteen years, their results were quite similar, which speaks to the strengths of their findings.

The perceptions that healthcare workers hold towards their place of work have been shown to significantly influence overall job satisfaction. Perceptions of workload (Adams & Bond, 2000) and the organization of the facility (Arnetz, 1999) both can play an important role. These studies found that the perception of these qualities were more important in predicking job satisfaction than objective demographic factors.

Adams and Bond (2000) concluded that interpersonal relationships have an influence on job satisfaction for hospital nursing staff. Blegen’s results also illustrated the importance of interpersonal communication in job satisfaction; nurses’ communication to supervisor and communication to peers were both positively correlated to job satisfaction. Communication is vital to all working environments, but is of great consequence in healthcare settings.

Job Satisfaction for Oncology Staff

Factors for oncology staff job satisfaction are similar to those for healthcare staff in general. Stress plays a significantly deleterious role in job satisfaction and greater perceived work load is positively correlated with experienced work stress for oncology
staff (Dougherty et. al., 2009). The relationships that develop between staff and patients are what separate the experience of working in an oncology unit apart from healthcare facilities in general. Oncology staff establish relationships with individual patients due to the chronic nature of the illness. Consequently, the deaths of patients can lead to additional stress and having insufficient time to grieve the passing of patients has been associated with job dissatisfaction (Dougherty et. al., 2009).

Emotional exhaustion is common in oncology as evidenced by the large amount of research in the field’s literature exploring burnout. Burnout is defined as, “A syndrome of emotional exhaustion, depersonalization, and low personal accomplishment that occurs among individuals who work with people” (Mashlach & Jackson, 1981, as cited in Zangaro & Seoken, 2007, p. 446). Oncology nurses have demonstrated more physical symptoms due to burnout and less emotional distance to patients than oncologists (Kash et al, 2000). The same study found that negative work events contribute to burnout and that the most common way staff relax is though talking to a friend.

Burnout can have direct and indirect effects on the experiences of patients in oncology units. A negative relationship between high rates of nurse burnout and patient satisfaction has been found in hospitals across the United States (Vahey, Aiken, Sloane, Clarke, & Vargas, 2004). Nurse burnout has also been associated with negative nurse perceptions of patient safety in the workplace (Halbesleben, Wakefield, Wakefield, & Cooper, 2008). The reduction of burnout can not only improve the job satisfaction of
staff, but can also have a positive impact on patient satisfaction, which is often used as a measure of a healthcare facility’s performance.

Compassion fatigue is a unique form of burnout. The term is used to describe the experiences that are distinctive to those in the caregiving professions (Joinson, 1992). Rather than concentrating on the experience of job dissatisfaction, the concept focuses on the experiences of compassion and empathy. Peer support has been shown to be instrumental in alleviating compassion fatigue (Aycok & Boyle, 2009). Interpersonal communication has been shown to be crucial for maintaining mental well-being for individuals in the caregiving professions.

The fact that it is better to prevent both of these conditions rather than ameliorating their effects is widely acknowledged (Aycok & Boyle, 2009; Joinson, 1992; Kash et al., 2000; Medland, Howard-Ruben, & Whitaker, 2004; Najjar, Davis, Beck-Coon, & Doebbeling, 2009). Suggested interventions addressing both burnout and compassion fatigue in healthcare staff concentrate on peer support and increased interpersonal communication (Aycok & Boyle, 2009; Kash et al., 2000). Communication is not only a way to improve working conditions but also a tool to relieving work related stress.

When nurses believe that an organization is well run and the interventions being practiced are appropriate, nurses are more satisfied with their work environment (Adams & Bond, 2000). The inclusion of staff in management issues has been suggested as a means of improving job satisfaction (Arnetz, 1999). The established relationships between perceived work load, high rates of burnout, and the role of communication
indicate the importance for oncology healthcare workers to have opportunities to comment and provide feedback regarding the procedures that take place in a healthcare setting.

Administrative staff play pivotal roles in any healthcare setting; yet, they are often overlooked in studies exploring healthcare. Cashavelly et al. (2008) found that the support staff in an oncology unit reported their highest job satisfaction with patient relationships and their lowest job satisfaction with job recognition from supervisors. Administrative staff have expressed dissatisfaction due to the lack of acknowledgement they receive from other staff in healthcare settings. Job satisfaction for administrative staff may be improved if the significant role they play in healthcare settings were to be recognized and they were included in workplace decision making. It is clear that administrative staff care deeply for the oncology patients. Direct interaction between patients, caregivers, and administrative staff occurs a great deal in an oncology setting. Improvement in job satisfaction for administrative staff may have the same improvements for staff-patient/caregiver interactions that have been proposed to occur between healthcare staff.

**Healthcare Staff Perceptions of AAI**

Researchers have explored how various animal-assisted interventions have been received by professionals in various healthcare settings. In an anecdotal report, a Nurse Manager of a hospital described the addition of an animal-assisted therapy program as having been beneficial for staff as well as for patients (Carmack & Fila, 1989). The Nurse Manager reported that the program helped staff to initiate and maintain
communication with patients. In addition, it decreased staff stress levels and provided a mutual experience that further enabled communication between staff. In another anecdotal report, it was found that the addition of a canine to a hospital’s rehabilitation unit had the unexpected effect of improving the moods of staff and the patients visiting families (Haggard, 1985).

Moody et al. (2002) found staff perceptions towards an animal-assisted activity were more positive following the introduction than anticipatory perceptions of the dog visitation program. This study employed a pre-test post-test design distributing anonymous surveys to administrative staff, doctors, and nurses in an acute pediatric medical ward. One hundred and fifteen staff members responded to the pre-test six weeks before the intervention and 45 responded to the identical post-test 12 weeks following its introduction. The results also found that staff perceived the work place to be happier and more interesting due to the program. Qualitative analyses have shown that health care professionals ranging from occupational therapists (Velde, Cipriani, & Fisher, 2005) to behavioral health staff (Rossetti, DeFabisi, & Belpedio, 2008) view AAA and AAT as a way to facilitate interaction with patients and clients.

Animal-assisted interventions in long-term care facilities have been shown to affect the residents, the staff, and the interactions between the two groups (Bernstein, Fridmann, & Malaspina, 2000). Animal-assisted activities can lead to a reduction in depression among residents (LeRoux & Kemp, 2009). Attitudes towards animals have been shown to influence how staff in long-term care facilities perceive the interventions,
with more positive attitudes being related to more positive perceptions (Crowley-Robinson & Blackshaw, 1998; Winkler, Fairnie, Gericevich, & Long, 1989).

Crowley-Robinson & Blackshaw (1998) was a unique situation in which a resident dog went missing after two days at a War Veterans Home in Australia. Nearly 60 percent of the 80 staff members completed questionnaires addressing their attitudes towards AAT programs along with scales assessing their general attitudes towards pets. The results indicated that staff who held more positive perceptions towards AAT and pets were more affected by the dog’s disappearance and subsequent return, did not anticipate that an AAT program would increase their work load, and wanted an AAT program at the facility. Winkler et al. (1989) found the introduction of a resident dog had long-term effect of increasing social interaction between staff. The longitudinal case study employed behavioral mapping procedures as well as interviews with staff and residents six weeks prior to the introduction of a resident dog and again 22 weeks following the dog’s introduction. Staff viewed the dog as a beneficial diversion for the residents and themselves. Staff were found to have more positive evaluations of the dog than the residents (though the residents also had generally positive opinions of the dog). The addition of an animal-assisted activity has also been shown to increase the rate of touch that residents experience (Bernstein et al., 2000).

The intervention must not only be well-designed for the specific setting, but the staff at the healthcare facility must be involved in the implementation and design for such an intervention to be successful (Moody et al., 2002; Muschel, 1984). Experts have suggested that programs be evaluated in order to assess their efficacy and to create the
optimal program for both patients and staff (Barba, 1995; Johnson et al., 2003). This study was based upon the idea that any intervention introduced into a healthcare setting must have the approval of the staff in order to be effective for the patients.

Research Questions and Hypotheses

The addition of any intervention will have direct impacts on the environment at a healthcare facility and its staff. There were four major areas of exploration in this study. The first area of study concerned the staff’s general perceptions of animal-assisted interventions and activities in healthcare settings. The second area concentrated on the direct impact the intervention had on staff. The study also explored the impact the intervention had on patients and informal caregivers according to staff. Finally, the study investigated how current and past companion animal ownership influenced staff perceptions towards the intervention and animal-assisted activities in general.

The opinion of staff regarding animal-assisted activities in general and the appropriateness of animal-assisted interventions in healthcare facilities were investigated. Hypothesis 1: Staff who generally liked the idea of animal-assisted activities and held other positive perceptions towards such interventions would have more positive perceptions regarding the introduced intervention. Likewise, staff who believed such interventions were inappropriate and created an increased risk of disease would not hold positive perceptions towards the impact of the intervention.

Staff were asked about the degree to which the intervention had caused extra stress in the workplace in general and more work for themselves individually. The degree to which they felt either would occur when they had first heard about the
intervention was also asked. Hypothesis 2: The amount of anticipated extra stress and extra work would be greater than either having actually occurred.

The staff were asked to report whether and what degree they had interacted with the visiting teams. Hypothesis 3: Staff who had more interaction with the visiting teams would have more positive perceptions towards the intervention and its impact on the facility.

The handler has been shown to play a vital role in animal-assisted interventions and there is evidence that a large part of the social support may come from the handler. There were two separate items asking respondents the degree to which they enjoyed interacting with the visiting human volunteer and the visiting canine. While these items could not measure the degree to which the person impacts the intervention’s efficacy, it could provide information on how these types of interventions were perceived. A research question asked whether there would be a significant difference between staff enjoyment of interacting with the handler and enjoyment of interacting with the dog. The pattern of correlational relationships in Hypothesis 1 was expected to be reflected in staff enjoyment during team visits, the enjoyment of interacting with the handler, and the enjoyment of interacting with the dog.

Healthcare and administrative oncology staff have been shown to care a great deal about the people they serve. There is evidence that increased communication and social interaction can have a positive effect on job satisfaction in an environment prone to burnout and compassion fatigue. The study addressed what, if any, effect the intervention had on staff interactions. Staff were asked the degree to which they enjoyed
when teams were visiting and whether the intervention had had an impact on staff interactions. In an effort to gauge the overall opinion of the appropriateness of the intervention, staff were asked the degree to which they felt the intervention should continue at the facility. Hypothesis 4: The animal-assisted activity was hypothesized to have a generally positive impact on staff interactions at the facility. It was hoped that there would be a general agreement for animal-assisted activities to continue at the facility. Hypothesis 5: Staff who agreed that animal-assisted activities should continue at the facility would hold more positive perceptions towards animal-assisted activities in general and agree more that the intervention had been beneficial for patients and caregivers.

Separate items addressed the anticipated benefit of the intervention and individual items assessed the perception of the intervention’s actual benefit for patients and their informal caregivers. Previous studies have shown that staff impressions towards introduced animal-assisted interventions tend to improve after their introduction. Hypothesis 6: The perceived actual benefit of the animal-assisted activity would be higher than the benefit anticipated by staff.

The setting was chosen because social support has been shown to be crucial for cancer patients and their caregivers, and the effects of animal-assisted activities may be attributed to providing additional social support. The study hoped to determine whether the staff believed the intervention had been beneficial for patients and their caregivers. Staff were asked the degree to which they observed the volunteer teams interact with patients and caregivers. Hypothesis 7: Staff who had observed more
interaction between patients, their caregivers, and visiting teams would find the intervention to have been more beneficial than those who had seen little or no interaction. The degree to which patients and caregivers had spoken to staff about the introduced intervention was also addressed. Hypothesis 8: Staff whom patients and caregivers had spoken to a lot about the intervention would be more likely to view the intervention as beneficial for patients and caregivers.

The other focus of the study was to explore how past and present companion animal ownership influenced perceptions and opinions of the intervention. The degree of closeness that people felt to a present or past companion animal was also assessed. Hypothesis 9: Staff who presently owned a companion animal and those with a history of companion animal ownership would have more positive perceptions toward the addition of the volunteer animal-assisted activity. Hypothesis 10: Staff who held a more favorable opinion of dogs in general would be more likely to have positive perceptions of the animal-assisted activity, as would those who felt closer to a companion animal.
CHAPTER III

METHODOLOGY

Human-Canine Visitation Teams

Four of the five teams had completed training through the Canine Connection’s Pets with Purpose volunteer outreach program. Pets with Purpose uses the criteria developed and published by the Delta Society’s “Pet Partner” program for therapy animal evaluation. The Delta Society’s mission is “improving human health through therapy, and service animals” (Delta Society, 2008). The Society’s 22-step evaluation process has become a standard in the field and registered Pet Partner teams visit healthcare facilities in every state and in 13 countries. The dog in each successful team must undergo a complete veterinary examination. The handler must then pay fees to register as an official Pet Partner team. All registered teams are covered under the Delta Society’s primary commercial general liability insurance. Continued registration is contingent upon up-to-date fees, an annual veterinary exam, and a biennial revaluation.

The owner of the Canine Connection is a licensed Pet Partners evaluator. The owner allowed the researcher to send an email to teams with current registration for the purpose of recruitment. One team was recruited through personal contact. The team had been evaluated and registered as a Pet Partner team through Prescription Pets in Red Bluff, CA.
The Enloe Medical Center required that all handlers interested in participating complete the medical center’s standard volunteer intake process. The process included a volunteer orientation meeting, an application form, two letters of recommendation, and a two-step tuberculosis screening. Handlers attended a volunteer orientation meeting that was specifically scheduled and designed for the volunteers in this project. The orientation meeting was lead by the Volunteer Coordinator and took place at the Enloe Cancer Center in October of 2010. A total of seven people completed the process and received identification badges to demarcate themselves as Enloe Medical Center volunteers. These badges were worn by the volunteers during every visit. The handlers were the first to be enrolled in Enloe’s PAWS (Pets Assisting With Service) program.

Handlers were then required to complete a proctoring/shadowing session in order independently visit the Cancer Center. The Cancer Support Program Liaison led the proctoring. The team that included the Husky mix had visited the facility prior to the Cancer Center’s incorporation into the Enloe Medical Center (animal-assisted interventions had been discontinued following incorporation) and this team was used to begin the shadowing process. Once a team had completed this training it could independently visit the Cancer Center and lead the shadowing for another team. These trainings took place between mid-December and the beginning of February.

The five volunteer teams who took part in the study were all comprised of an adult woman and her dog. There was a total of six canines, four males and two females. One handler had two registered dogs; she took only one dog on each visit. One dog was a female four year-old black Labrador Retriever, one a male four year-old Anatolian
Shepherd, one an older male Husky (exact age unknown), one a male eight-year-old Golden Retriever, and one male and one female two-and-a-half-year-old Golden Retriever / Yellow Labrador Retriever mix. All teams made a total of two visits, with the exception of the Anatolian Shepherd team which made three.

**Materials and Procedure**

Handlers scheduled their visitation with the Cancer Support Program Liaison at the Enloe Cancer Center. Visits took place on Mondays, Wednesdays, and Fridays over a four week period. The visiting team arrived at either 10:30 or 11 in the morning. There was no set length of time for the visits. The duration of the visits ranged from 20 minutes to one and a half hours.

The animal-assisted activity took place in two separate waiting areas, one for Radiation Oncology and the other for doctors’ offices, as well as in the Infusion Therapy room. Prior to visiting each area the volunteer contacted a designated member of the department’s staff via an in-house phone. The member of the staff then “cleared” the area. Clearing was done by first verbally ascertaining that no patients or visitors have any fear, dislike, or allergies to dogs. The member of the staff then asked who in the room would like to receive a visit with the team. Individuals who wanted a visit (and were not immunocompromised) were then given a sticker to indicate their interest in a visit. Once the room was “cleared” the team entered and visited individuals with the stickers.

People who received a visit were given hand sanitizer from the handler immediately before and after interacting with the dog. No directions were given to
handlers as to whether or not they could initiate contact. The stickers indicated that a person would like to and was able to receive a visit. There was no set amount of time for the length of individual visit with a team, the amount of time was determined on a case-by-case basis by the handler. No directions were given to individuals who received a visit; people were allowed to calmly interact with the team as they chose.

The animal-assisted activity visits took place over a four week period in February and March. The final visit did not take place due to unforeseen circumstances. The cancellation was not thought to influence the results of the study because visits had begun two weeks prior to the four week period. These visits were not regularly scheduled in the same manner as the month long intervention period.

Following the four week period staff were given one week to complete an anonymous questionnaire developed by the primary investigator. Volunteer teams continued scheduled visits during this week. Questionnaires were placed in break rooms for the staff to complete at their leisure. A paperclip attached a debriefing form and a plain white envelope to each questionnaire. The instructions directed the respondents to fold the completed form into the white envelope, seal the envelope, and give it to the receptionist at the front desk of Radiation Oncology.

No demographic or employment characteristics were included in the questionnaire in order to maintain strict confidentiality and promote honest responses from the respondents. There were three sections to the questionnaire (see Appendix A), containing a total of 26 items. The first section asked respondents about their perceptions of the animal-assisted activity and their perceptions of animal-assisted
activities in general. There were 15 Likert-style scale items ranging from 1 (Disagree Completely) to 9 (Completely Agree). One item addressing the experience over the past four weeks with three possible choices: “No,” “Yes, a little,” and “Yes, a lot,” respondents were asked to circle the appropriate response.

The second section addressed the respondents’ perceptions of the effect of the intervention on patients and their caregivers. There were four experiential items with the same three response choices as above, and three Likert-style items with the same ranges as above. Both sections concluded with an area of blank lines in which respondents could include comments on the topic which was clearly indicated as optional.

The final section of the questionnaire asked respondents about their current and past companion animal ownership history. Companion animals were referred to as pets in the questionnaire. The first two items asked whether or not respondents currently have or have had pets in the past. If respondents circled “Yes,” they are asked to provide what type of animal and how many. The final item was used to indicate the degree of closeness respondents feel or have felt with the pet with which they felt closest to either in the present or past. Respondents were instructed to circle the pair of circles that best described that relationship (see Figure 1). The Closeness to Pet item was developed for a previous study by Dr. Linda Kline and used with permission.

The Cronbach alpha coefficient for the 18 Likert-style items in the questionnaire was .856. There were three items which if deleted would have increased the coefficient. The deletion of two of those items would have raised the coefficient score of .859; they were: “The addition of the animal-assisted intervention has created
Figure 1. Closeness to Pet Item.


extra work for me in my work place,” and “In general the presence of a team has a positive impact on staff interactions.” The deletion of the item, “Interactions between staff are different when a visiting team is present” would have increased the Cronbach alpha coefficient to .894.

Data analyses were conducted using PASW Statistics 18. The level of statistical significance was set .05, and two-tailed tests were employed in analyses.

**Participants**

The Regional Cancer Center had had a total of 55 on-site staff. Five staff members worked on multiple campuses within the Enloe Medical Center and were not full-time staff of the cancer center. Six of the 55 were doctors. 14 (25.45%) were administrative staff, and there was a total 30 healthcare staff at the facility.
A total of 36 questionnaires were collected, 34 were completed by staff. The response rate was 61.8%. Two questionnaires were completed by volunteers (which were demarcated with a capital “V” on the first page) and were not included in the analyses. One doctor completed the questionnaire; the participants’ position at the Cancer Center was ascertained through the participant’s comments. This questionnaire was included in analysis. There was no way to determine whether or not other doctors had completed the survey. While doctors were not targeted respondents, they are part of the staff in an oncology unit.
CHAPTER IV

FINDINGS AND RESULTS

Staff Perceptions of the Intervention

Staff perceptions were based on descriptive statistics from 18 Likert-style items (9-point scale). Pearson’s product-moment correlation coefficients were used to determine relationships between the various perceptions of animal-assisted activities in general, their degree of appropriateness in healthcare facilities, perceptions of the intervention’s impact on staff, staff perceptions on the impact of the intervention on patients and caregivers both prior to and following its implementation, as well as the influence of current and past companion animal ownership.

Perceptions of Animal-Assisted Activities in General

The staff perception of animal-assisted activities in general was very positive. The mean score for liking such interventions was 8.24 (SD = 1.2). Holding a positive perception toward animal-assisted activities in general was negatively correlated to believing that animals should not be allowed in healthcare settings, $r(32) = -0.492, p = 0.003$, while it was positively correlated to agreeing that animal-assisted activities are appropriate for cancer patients, $r(32) = 0.662, p < 0.001$. Holding a positive perception of animal-assisted activities in general was significantly correlated to liking dogs in general, $r(32) = 0.371, p = 0.031$; enjoying interacting with the handler, $r(32) = 0.403, p = 0.030$;
enjoying interacting with the dog, $r(32) = .375, p = .041$; and enjoying when the teams were visiting, $r(32) = .762, p < .001$.

There was a very strong correlation between a positive perception toward animal-assisted activities in general and believing the intervention would be beneficial before its implementation, $r(32) = .848, p = .003$; however, the correlation with the intervention having been beneficial after implementation was much less robust for patients, $r(32) = .358, p = .048$, and their caregivers, $r(32) = .444, p = .011$. There was a strong correlation between a positive perception of animal-assisted activities in general and agreeing that such interventions should continue at the facility in the future, $r(32) = .697, p < .001$.

**Perceptions on the Appropriateness of Animal-assisted Interventions in Healthcare Facilities**

Staff agreement with the statement, “I do not think animals should be allowed in healthcare facilities” had a mean score of 2.71 ($SD = 2.28$). The belief that animals should not be allowed in healthcare facilities was highly correlated to the belief that animal-assisted activities create an increased risk of disease in such facilities, $r(32) = .816, p < .001$, and was negatively correlated to the belief that such interventions were appropriate for cancer patients, $r(32) = -.518, p = .002$.

There was a significant correlation between the belief that animals should not be allowed in healthcare settings and that the animal-assisted activity would create extra stress (prior to the intervention taking place), $r(34) = .505, p = .002$. There were
significant negative correlations between the perception that animals should not be allowed in healthcare settings and enjoying when the teams were visiting, $r(31) = -.451, p = .008$; enjoying interacting with the handler, $r(27) = -.389, p = .037$; generally liking dogs, $r(32) = -.428, p = .012$; and the perception that teams had a generally positive impact on staff interaction, $r(31) = -.385, p = .027$.

There was also a negative correlation between the belief that animals should not be allowed in healthcare facilities and anticipating that the intervention would be beneficial prior to its implementation, $r(30) = -.625, p < .001$. The significant negative correlations between the perception that the animal-assisted activity had been beneficial for patients after implementation, $r(29) = -.401, p = .025$, and for their caregivers, $r(32) = -.397, p = .024$ were less robust. The perception that animals should not be allowed in healthcare settings was negatively correlated to the belief that animal-assisted interventions should continue at the facility, $r(33) = -.601, p < .001$.

Agreement with animals creating an increased risk of disease in healthcare settings had a mean score of 3.41 ($SD = 2.2$). Significant negative correlations were found between the perception that animal-assisted interventions create an increased risk of disease and that animal-assisted activities are an appropriate intervention for cancer patients, $r(32) = -.409, p = .016$. There was a positive correlation between the perception that such interventions increase the risk of disease and the anticipatory perception that they would create extra stress in the work place, $r(32) = .435, p = .010$.

There were negative correlations between the perception of animal-assisted interventions increasing the risk of disease in healthcare settings and having enjoyed
when teams were visiting, $r(31) = -0.356, p = 0.042$, and the perception that they had a generally positive impact on staff interactions, $r(31) = -0.511, p = 0.002$.

The perception that interventions involving animals would create an increased risk of disease was negatively correlated to the perception that the intervention would be beneficial for the patients prior to implementation, $r(30) = -0.370, p = 0.037$; however, there were not significant correlations between whether the intervention had been beneficial for patients or caregivers. There was a moderate negative correlation between the perception that animals create an increased risk of disease and agreeing that animal-assisted activities should continue at the facility, $r(31) = -0.500, p = 0.003$.

Staff generally agreed that animal-assisted activities were appropriate interventions for cancer patients ($M = 7.71, SD = 1.64$). The perception of animal-assisted activities being appropriate for cancer patients was negatively correlated to anticipating that such activities would create extra stress in the work place, $r(32) = -0.462, p = 0.006$.

Positive correlations were found between the perception of animal-assisted activities as appropriate interventions for cancer patients and having enjoyed when teams were visiting, $r(31) = 0.485, p = 0.004$; having enjoyed interacting with the handler, $r(32) = 0.435, p = 0.016$; and generally liking dogs, $r(32) = 0.360, p = 0.037$.

A one-way ANOVA with the independent variable of amount of interaction between staff and visiting teams (none, $n = 4$; a little, $n = 21$; a lot, $n = 9$) indicated that staff agreement on whether animal-assisted activities were an appropriate intervention for cancer patients varied significantly between the degree of interaction staff had with
visiting teams, \( F(2,31) = 5.60, p = .008 \). Post-hoc Tukey comparisons indicated that staff who had a lot of interaction with the teams agreed significantly more with their appropriateness \( (M = 8.67, SD = .71) \) than those who reported no interaction with the teams \( (M = 5.75, SD = .96) \). There were no significant differences in agreement toward the appropriateness of the intervention between those with a little interaction and no interaction or those with a little interaction and a lot of interaction with the teams.

Perceiving such interventions as appropriate for cancer patients was positively correlated to the perception that the intervention would be beneficial for patients prior to implementation, \( r(30) = .545, p = .001 \); that it had been beneficial after implementation for patients, \( r(29) = .445, p = .012 \); and the relationship was even stronger for their caregivers, \( r(30) = .630, p < .001 \). The perception that animal-assisted activities were appropriate for cancer patients was strongly correlated to agreeing that the intervention should continue, \( r(31) = .619, p < .001 \).

**Perceptions of the Intervention’s Impact on Staff**

Staff generally disagreed with the statement that the intervention would cause extra stress in the work place prior to implementation \( (M = 2.74, SD = 2.3) \). There was slightly more disagreement that the intervention had caused extra stress after its implementation \( (M = 2.24, SD = 2.15) \). A paired-samples t-test indicated that the perception of the animal-assisted activity actually causing extra stress was not significantly lower than the anticipatory perception that it would. There was a significant
correlation between the perceptions that the intervention would create extra stress in the work place that it had (see Table 1).

Anticipating that the animal-assisted activity would cause extra stress in the work place was also correlated to anticipating that it would create extra work, and having had created extra work (see Table 1). The perception that the intervention would create an extra stress was negatively correlated to having enjoyed when the teams were visiting, having enjoyed interacting with the human visitor, and not liking dogs in general. The perception was also negatively correlated to anticipating the perception to be beneficial for patients, perceiving that the intervention was beneficial for patients, perceiving that the intervention was beneficial for caregivers, and that the intervention should continue.

The perception that the intervention had created extra stress in the work place after its implementation was negatively correlated to enjoying when teams were visiting and interacting with the handler (see Table 1). The perception that the intervention had created extra stress in the work place was positively correlated to the perception that staff interactions were different when a team was visiting. There was a strong negative correlation between the perception that the intervention had created extra stress in the work place and agreeing that animal-assisted activities should continue at the facility.

The mean score that such an intervention would create extra work for individuals prior to implementation was 2.14 (SD = 1.79); while the mean score for the intervention having caused extra work for individuals after implementation was 1.88 (SD = 1.97). A paired-samples t-test indicated that the perception of the intervention having caused extra work was not significantly different than the anticipatory perception that it
Table 1.

*Correlations with Anticipated and Created Extra Stress*

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<th>Would Create Extra Stress</th>
<th>Has Created Extra Stress</th>
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<td>-.289</td>
</tr>
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<td>—</td>
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<tr>
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<td>(n = 34)</td>
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<td>.242</td>
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<tr>
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<td>.143</td>
</tr>
<tr>
<td>(n = 34)</td>
<td>(n = 34)</td>
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<td>-.252</td>
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<td>(n = 34)</td>
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<tr>
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<td>.444*</td>
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<td>(n = 31)</td>
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<tr>
<td>AAA Should Continue</td>
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<td>-.586**</td>
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<tr>
<td>(n = 33)</td>
<td>(n = 33)</td>
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<td>Would Be Beneficial</td>
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<td>-.293</td>
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<tr>
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<td>(n = 32)</td>
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<tr>
<td>Beneficial for Patients</td>
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<td>-.229</td>
</tr>
<tr>
<td>(n = 31)</td>
<td>(n = 31)</td>
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</tr>
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<td>Beneficial for Caregivers</td>
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<td>-.259</td>
</tr>
<tr>
<td>(n = 32)</td>
<td>(n = 32)</td>
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* p < .05

** p < .001
would. There was a very strong correlation between the anticipatory and post-introduction perceptions of extra work created for individuals (see Table 2).

There were negative correlations between the perception that the intervention would create extra work and liking dogs in general, having enjoyed interacting with the handlers, and having enjoyed interacting with the dogs (see Table 2).

Staff enjoyed when a team was visiting \( (n = 33, M = 7.91, SD = 1.74, SD = 2.19) \). Four respondents (11.8%) had not interacted with the visiting teams. Twenty-one respondents (61.8%) had interacted with the teams a little and nine (26.6%) had interacted with them a lot. Respondents who had interacted with a team reported having enjoyed interacting with the handler \( (n = 29, M = 7.66, SD = 1.67) \) and had also enjoyed interacting with the dog \( (n = 30, M = 7.40, SD = 2.19) \). A paired-samples t-test indicated that the mean score for enjoying interacting with the handler was not significantly different from that of enjoying interacting with the dog. Enjoying when a team was visiting was strongly correlated to enjoying interacting with the handler, \( r(29) = .696, p < .001 \), and enjoying interacting with the dog, \( r(28) = .642, p < .001 \). Likewise, enjoying interacting with the handler had a very strong correlation to enjoying interacting with the dog, \( r(32) = .767, p < .001 \).

There were also positive correlations between enjoying when a team was visiting and believing that the animal-assisted activity would be beneficial for patients prior to the implementation of the animal-assisted activity, \( r(30) = .791, p < .001 \); believing that it had been beneficial after implementation for patients, \( r(29) = .441, p = .013 \), and for caregivers, \( r(30) = .505, p = .003 \). Enjoying interacting with the handler…
<table>
<thead>
<tr>
<th></th>
<th>Would Create Extra Work</th>
<th>Has Created Extra Work</th>
</tr>
</thead>
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<td>Animals Should Not Be Allowed</td>
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<td>-.211 (.n = 34)</td>
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<tr>
<td>Increased Risk of Infection</td>
<td>.137 (.n = 34)</td>
<td>-.107 (.n = 34)</td>
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<tr>
<td>Appropriate for Cancer Patients</td>
<td>-.108 (.n = 34)</td>
<td>.008 (.n = 34)</td>
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<tr>
<td>Would Create Extra Stress</td>
<td>.524** (.n = 34)</td>
<td>.516** (.n = 34)</td>
</tr>
<tr>
<td>Has Created Extra Stress</td>
<td>.242 (.n = 34)</td>
<td>.143 (.n = 34)</td>
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<tr>
<td>Would Create Extra Work</td>
<td>.735** (.n = 34)</td>
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<tr>
<td>Has Created Extra Work</td>
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<td>.735** (.n = 34)</td>
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<td>-.129 (.n = 33)</td>
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<tr>
<td>Generally Like Dogs</td>
<td>-.391* (.n = 34)</td>
<td>-.106 (.n = 34)</td>
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<tr>
<td>Enjoy Interacting With the Human</td>
<td>-.511** (.n = 29)</td>
<td>-.203 (.n = 29)</td>
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<tr>
<td>Enjoy Interacting With the Dog</td>
<td>-.564** (.n = 30)</td>
<td>-.331 (.n = 30)</td>
</tr>
<tr>
<td>Staff Interactions Are Different</td>
<td>.241 (.n = 31)</td>
<td>-.003 (.n = 31)</td>
</tr>
<tr>
<td>AAA Should Continue</td>
<td>-.297 (.n = 33)</td>
<td>-.068 (.n = 33)</td>
</tr>
<tr>
<td>Would Be Beneficial</td>
<td>-.099 (.n = 32)</td>
<td>-.082 (.n = 32)</td>
</tr>
<tr>
<td>Beneficial for Patients</td>
<td>-.287 (.n = 31)</td>
<td>-.039 (.n = 31)</td>
</tr>
<tr>
<td>Beneficial for Caregivers</td>
<td>-.438* (.n = 32)</td>
<td>-.213 (.n = 32)</td>
</tr>
</tbody>
</table>

* *p < .05
** **p < .001
was positively correlated to anticipating the intervention would be beneficial for patients, \( r(26) = .496, p = .007 \); while it was more strongly correlated to the perception of the intervention having been beneficial for patients, \( r(25) = .602, p = .001 \), and for their caregivers, \( r(26) = .752, p < .001 \). Enjoying interacting with the handler was robustly correlated to agreeing that animal-assisted activities should continue at the facility, \( r(29) = .857, p < .001 \).

Enjoying interacting with the dog was positively correlated to anticipating that the intervention would be beneficial for patients, \( r(27) = .467, p = .011 \), and to having been beneficial for caregivers, \( r(27) = .469, p = .010 \). Enjoying interacting with the dog was also correlated to agreeing that animal-assisted interventions should continue, \( r(28) = .547, p = .002 \).

A series of one-way ANOVAs indicated that there were significant differences in the perceptions toward the intervention and its impact between staff who had not interacted with the teams, those who had a little interaction, and those who reported to have a lot of interaction with the teams. However, the assumption of homogeneity of variances was violated for five of the seven items that had significant differences between the three groups, and assumptions remained violated when ran performing a Welch’s test. These five items were: “I personally enjoy when a team is visiting;” “Animal-assisted activities should continue at this facility;” “When I first heard of the idea I felt that the addition of an animal-assisted intervention would be beneficial for patients;” “The addition of an animal-assisted activity has been beneficial for patients;” and “The addition of an animal-assisted activity is worthwhile to the patients.”
in general;” and “The addition of the animal-assisted activity has been beneficial for caregivers in general.”

A one-way ANOVA indicated that agreeing that the presence of a team had a positive impact on staff interactions in general, differed significantly between the three groups, $F(2,30) = 5.29, p = .011$. Post-hoc Tukey comparisons indicated staff who reported a lot of interaction with the teams ($M = 7.44, SD = 1.59$) and those who reported a little interaction ($M = 6.62, SD = 1.40$) agreed significantly more with the generally positive impact on staff than those who reported having no interaction with the visiting teams ($M = 4.33, SD = 1.15$). There was not a significant difference between staff who had a lot and a little interaction with the visiting teams.

Staff slightly disagreed with the statement, “Interactions are different when a visiting team is present,” ($n = 31, M = 4.61, SD = 2.49$). Perceiving that staff interactions were different when a team was present was negatively correlated to agreeing that animal-assisted activities should continue at the cancer center, $r(29) = -.381, p = .034$.

Three members of the staff (8.8%) had not seen patients interact with a visiting team, 12 (35.3%) had seen them interact a little, and 19 (55.9%) had seem them interact a lot. A one-way ANOVA indicated that the perception of the visiting teams’ presence having a generally positive impact on staff interactions differed significantly across the degrees of observed patient interactions with visiting teams, $F(2,30) = 7.69, p = .002$. Post-hoc Tukey comparisons indicated that staff who had seen a lot of interaction ($M = 7.42, SD = 1.46$) agreed that the presence of teams had a positive impact on staff interactions significantly more than those who had seen a little interaction ($M = 5.66, SD$
There were no significant differences between staff who had seen no interaction and those who had seen a lot of interaction or those who had seen a lot.

A one-way ANOVA also indicated that there was a significant difference across the groups on whether animal-assisted activities should continue. However, the assumption of homogeneity between groups was violated for this analysis, and the violation remained with an ANOVA using a Welch’s test.

There was agreement with the statement, “In general the presence of a team has a positive impact on staff interaction,” \( (n = 33, M = 6.64, SD = 1.62) \). The perception that the intervention had had a positive impact on staff interactions was positively correlated to perceiving as having been beneficial for patients, \( r(29) = .480, p = .006 \), and with agreeing that animal-assisted activities should continue, \( r(31) = .464, p = .006 \).

**Perceptions of the Intervention’s Impact on Patients and Caregivers**

A one-way ANOVA with the independent variable of degree of observed interaction between patients and visiting teams (none, a little, a lot) indicated that the perception of the intervention being beneficial for patients after its implementation differed across the groups, \( F(2,28) = 20.55, p < .001 \). Post-hoc Tukey comparisons indicated that staff who had seen a lot of interaction \( (M = 8.12, SD = 1.27) \) agreed that the intervention had been beneficial for patients significantly more than those who had seen a little interaction \( (M = 5.67, SD = .89) \) and those who reported not seeing any interaction \( (M = 5.0, SD = .00) \). There were not significant differences between staff who had observed a little interaction and no interaction between patients and the visiting teams.
A one-way ANOVA with the same independent variable also indicated the perception of the intervention having been beneficial for caregivers differed across the groups, $F(2, 29) = 5.83, p = .007$. Post-hoc Tukey comparisons indicated that staff who had seen the patients interact with the teams a lot ($M = 7.78, SD = 1.48$) were significantly more likely to agree that the intervention had been beneficial for caregivers than those who had seen patients interact a little ($M = 6.08, SD = 1.78$). There were no significant differences between those who had seen not interaction and either of the other two groups.

Thirteen (38.2%) of the staff reported that patients had not spoken to them about the animal-assisted activity. Thirteen (38.2%) reported that patients had spoken to them about the intervention a little, and eight (23.5%) reported that they had done so a lot. A one-way ANOVA indicated that agreement on the intervention being beneficial for patients differed across the groups; however, the homogeneity of variances across groups was violated. This violation of assumption remained when re-ran using a Welch’s test.

A one-way ANOVA indicated that agreeing the intervention had been beneficial for caregivers significantly differed across the three groups, $F(2, 29) = 4.37, p = .022$. Post-hoc Tukey comparisons indicated that staff who patients spoke to a lot about the animal-assisted activity ($M = 8.0, SD = 1.20$) were significantly more likely to view that the intervention had been beneficial for caregivers than those who patients had not been spoken to at all ($M = 5.92, SD = 1.78$). There were no significant differences
between those who had been spoken to a little about the intervention by caregivers and either of the other two groups.

Six (17.6%) participants had not seen caregivers interact with the visiting teams, while 12 (35.3%) had seen them interact a little and 16 (47.1%) had seen them interact a lot. A one-way ANOVA indicated that agreement that the animal-assisted activity had been beneficial for patients differed significantly across groups, $F(2, 29) = 11.90, p < .001$. Post-hoc Tukey comparisons indicated that staff who had seen the caregivers interact a lot with the visiting teams ($M = 8.07, SD = 1.33$) were significantly more likely to agree that the intervention had been beneficial for patients than those who had seen a little interaction ($M = 6.5, SD = 1.38$) or no interaction at all ($M = 5.0, SD = .71$). There was no significant difference between those who had seen a little interaction and no interaction between caregivers and the visiting teams.

A one-way ANOVA also indicated that agreement that the intervention had been beneficial for caregivers differed across the groups, $F(2, 29) = 6.90, p = .004$. Post-hoc Tukey comparisons indicated that staff who had seen the caregivers interact with teams a lot ($M = 7.87, SD = 1.41$) were significantly more likely to agree that the intervention had been beneficial for caregivers than those who had not seen them interact ($M = 5.0, SD = 1.41$). There were no significant differences in the perceived benefit for caregivers between staff who had seen a little interaction and either of the other two groups.

Sixteen (47.1%) respondents reported that caregivers had not spoken to them about the animal-assisted activity, 12 (35.3%) had been spoken to about the intervention
a little, and six (17.6%) had been spoken to a lot. A one-way ANOVA indicated that
agreement that the intervention had been beneficial for patients significantly differed
between the groups, $F(2,28) = 5.55, p = .009$. Post-hoc Tukey comparisons indicated
that staff who been spoken to a lot by caregivers about the interaction ($M = 8.50, SD = .84$) were significantly more likely to agree that the intervention had been beneficial for
patients than those who had not been spoken to at all about the intervention by caregivers
($M = 6.14, SD = 1.51$). There were no significant differences between staff who had been
spoken to a little by caregivers and either of the other two groups.

A one way ANOVA also indicated that agreement that the animal-assisted
activity had been beneficial for caregivers significantly differed across the groups, $F
(2,29) = 7.38, p = .003$. Post-hoc Tukey comparisons indicated that staff to whom
caregivers had spoken to a lot about the interaction ($M = 8.67, SD = .82$) were
significantly more likely to agree that the intervention had been beneficial for caregivers
than those who had not been spoken to at all by caregivers ($M = 5.93, SD = 1.69$). Again,
there were no significant differences between staff who had been spoken to a little by
caregivers about the animal-assisted activity and either of the other two groups.

Staff strongly believed that the intervention would be beneficial for patients
prior to the intervention taking place ($n = 32, M = 7.94, SD = 1.34$). There was less
agreement that the intervention had actually been beneficial after the intervention for
patients ($n = 31, M = 6.97, SD = 1.68$) or for their informal caregivers ($n = 32, M = 6.97,$
$SD = 1.8$). A paired-samples t-test indicated that there was significantly more agreement
that the intervention would be beneficial for patients ($M = 7.94$) than that it had been
beneficial for patients \((M = 6.97), t (30) = 3.94, p < .001\). There was no item addressing whether the intervention would be beneficial for caregivers.

There were positive correlations between anticipating that the intervention would be beneficial for patients and that it had been beneficial for patients and for their caregivers (see Table 3). There was a vigorous correlation between believing that the animal-assisted activity had been beneficial for patients and for caregivers.

There was strong agreement in that animal-assisted activities should continue at the facility \((n = 33, M = 7.82, SD = 1.74)\). Table 4 contains the correlations between agreeing that animal-assisted activities should continue at the regional cancer center and the other perceptions of the intervention and animal-assisted activities in general.

Anticipating that the intervention would be beneficial for patients was strongly correlated to agreeing that animal-assisted activities should continue. Likewise, perceiving that the intervention had been beneficial for patients was correlated to agreeing that animal-assisted activities should continue, as it was for the perception that the intervention had been beneficial for caregivers.

Companion Animal Ownership and Perceptions of the Intervention

Current Companion Animal Ownership

Twenty-nine (85.3\%) of the participants currently owned at least one companion animal. The average number of companion animals \((n = 33)\) was 2.12, with a minimum of zero and a maximum of 8. The disproportion of companion animal owners to non-owners made statistical analyses between the two groups problematic. However,
Table 3.

Correlations with Anticipated and Perceived Benefits

<table>
<thead>
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<th>Beneficial for Patients</th>
<th>Beneficial for Caregivers</th>
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</thead>
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<td>.848**</td>
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<td>.444*</td>
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<td>(n = 32)</td>
</tr>
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<td>Increased Risk of Infection</td>
<td>-.370*</td>
<td>-.217</td>
<td>-.259</td>
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<tr>
<td>(n = 32)</td>
<td></td>
<td>(n = 31)</td>
<td>(n = 32)</td>
</tr>
<tr>
<td>Appropriate for Cancer Patients</td>
<td>.545**</td>
<td>.445*</td>
<td>.630**</td>
</tr>
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<td>(n = 32)</td>
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<td>.752**</td>
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<td>(n = 28)</td>
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<tr>
<td>Enjoy Interacting With the Dog</td>
<td>.467*</td>
<td>.355</td>
<td>.469*</td>
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<td>(n = 29)</td>
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<tr>
<td>Staff Interactions Are Different</td>
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<td>-.215</td>
</tr>
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<td>(n = 32)</td>
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<tr>
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<td>.575**</td>
<td>.676**</td>
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<td>(n = 32)</td>
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<td>.521**</td>
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<tr>
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<td>(n = 31)</td>
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<td>.804**</td>
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<td>Beneficial for Caregivers</td>
<td>.521**</td>
<td>.804**</td>
<td>—</td>
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<td>(n = 31)</td>
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* $p < .05$

** $p < .001$
Table 4.

Correlations with Agreement for AAA to Continue

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<td>Animals Should Not Be Allowed</td>
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<td>Increased Risk of Infection</td>
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<td>Has Created Extra Stress</td>
<td>-.586** (n = 33)</td>
</tr>
<tr>
<td>Would Create Extra Work</td>
<td>-.297 (n = 33)</td>
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<tr>
<td>Has Created Extra Work</td>
<td>-.068 (n = 33)</td>
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<tr>
<td>Enjoy When a Team Is Visiting</td>
<td>.485** (n = 33)</td>
</tr>
<tr>
<td>Generally Like Dogs</td>
<td>.748** (n = 33)</td>
</tr>
<tr>
<td>Enjoy Interacting With the Human</td>
<td>.857** (n = 29)</td>
</tr>
<tr>
<td>Enjoy Interacting With the Dog</td>
<td>.547** (n = 30)</td>
</tr>
<tr>
<td>Staff Interactions Are Different</td>
<td>-.381* (n = 31)</td>
</tr>
<tr>
<td>Positive Impact on Staff Interactions</td>
<td>.464** (n = 33)</td>
</tr>
<tr>
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<td>.761** (n = 32)</td>
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<tr>
<td>Beneficial for Patients</td>
<td>.575** (n = 31)</td>
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<tr>
<td>Beneficial for Caregivers</td>
<td>.676** (n = 32)</td>
</tr>
</tbody>
</table>

* p < .05
** p < .001
exploratory t-tests were conducted to determine whether there were differences in the perceptions of the two groups. An independent-samples t-test indicated that staff who currently owned companion animals ($M = 8.0, SD = 1.79$) were more likely to generally like dogs than those who did not ($M = 6.0, SD = 2.83$), $t(32) = 2.12, p = .042$.

Generally liking dogs was positively correlated to enjoying when a team was visiting, $r(31) = .500, p = .003$; enjoying interacting with the handler, $r(27) = .463, p = .011$; and robustly to enjoying interacting with the dog, $r(28) = .797, p < .001$. Generally liking dogs was negatively correlated to the perception that staff interactions were different when a team was present, $r(29) = -.387, p = .031$.

Generally liking dogs was correlated to believing that the intervention would be beneficial for patients prior to its introduction, $r(30) = .534, p = .002$, but not that the animal-assisted intervention had been beneficial for either patients or caregivers following its introduction. There was a positive correlation between generally liking dogs and agreeing that animal-assisted activities should continue at the cancer center, $r(31) = .485, p = .004$.

The only significant mean difference found directly concerning the intervention was whether animal-assisted interventions create an increased risk of disease. An independent-samples t-test indicated that staff who currently owned at least one companion animal ($M = 3.1, SD = 1.97$) were significantly less likely to agree that animal-assisted interventions create an increased risk of disease in health care settings than those who did not currently own at least one companion animal ($M = 5.2, SD = 2.86$), $t(32) = -2.06, p = .048$. There were no significant correlations between the
number of companion animals participants currently owned and their perceptions of the intervention or animal-assisted activities in general.

Ten (34.5%) of the 29 companion animal owners reported as only having dogs, eight (27.6%) had cats only, and 11 (37.9%) had both cats and dogs. Results of a one-way ANOVA indicated that the perception that the intervention had been beneficial for patients significantly differed across categories of companion animal-ownership, $F(2,23) = 4.72, p = .019$. Post-hoc Tukey comparisons indicated that staff who currently owned only dogs were significantly more likely to agree that the intervention had been beneficial to patients ($M = 8.89, SD = 0.33$) compared to staff who owned only cats ($M=7.57, SD = 1.72$). There were no significant differences in agreement that the intervention had been beneficial for patients following its implementation for staff who owned both dogs and cats and those who had only dogs or only cats.

A one-way ANOVA also indicated that enjoying while a team was visiting and agreeing that the teams had a generally positive impact on staff interactions significantly differed across type of companion animal ownership. However, the homogeneity of variances assumptions were violated for these findings and remained violated when conducted with a Welch’s test.

**Past Companion Animal Ownership**

Thirty-three (97.1%) participants had had companion animals in the past. No statistical analyses were run using past companion animal ownership as a variable. Nine (26.5%) of those who had companion animals in the past had exclusively had dogs, 2 (5.9%) had only cats in the past, seventeen (50.0%) had both cats and dogs in the past, 5
(15.2%) had another type of past companion animal. A one-way ANOVA indicated that perceptions on the animal-assisted activity did not differ across type of past companion animal ownership.

Closeness to Companion Animal

The mean score for closeness to pet for the thirty-three respondents who had or had had a companion animal was 3.3 ($SD = 1.38$). Scores on the closeness to pet item were negatively correlated to the perception that animals should not be allowed in healthcare facilities, $r(31) = -.428, p = .010$; while they were positively correlated to generally liking dogs, $r(31) = .400, p = .021$, and perceiving animal-assisted activities as appropriate interventions for cancer patients, $r(31) = .498, p = .003$. 
CHAPTER V

CONCLUSIONS AND RECOMENDATION

Introduction

Staff perceptions were generally positive toward the animal-assisted activity and the impact it had on patients, informal caregivers and staff. There was evidence to support the claim that staff perceptions of animal-assisted activities and companion animals in general influenced how staff rated the efficacy of the intervention. This chapter provides an overview of staff perceptions and explores the study’s research questions and hypotheses. Specific limitations of the present study are also addressed. The chapter concludes with a discussion of factors which may influence staff acceptance of animal-assisted interventions in outpatient healthcare facilities. It also addresses factors which may contribute to staff perceiving such interventions as beneficial for patients and informal caregivers.

Overall Perceptions of the Animal-assisted Activity

The staff at the regional cancer center held an extremely positive attitude toward animal-assisted activities in general. While there was strong support that the volunteer animal-assisted activity should continue at the facility, the support was not as highly rated as for animal-assisted activities in general. The larger standard deviations illustrated more variability in future support of the program than of the idea of such a
program. The trend which emerged in the data was for anticipatory perceptions of the program’s efficacy to be higher than its perceived efficacy.

Staff was in agreement that animal-assisted activities should continue at the facility. There was a range of agreement between staff regarding the future of such interventions; more so than in liking animal-assisted activities in general and more than anticipating the intervention would be beneficial for patients. This variability was a surprising finding and may have been due to the variability in how appropriate such interventions were perceived to be in healthcare facilities. Liking the idea of animal-assisted activities in general is not synonymous with believing them to be appropriate in a particular setting.

**Appropriateness of an Animal-assisted Activity**

There was very strong agreement that animal-assisted activities were appropriate for cancer patients. Simultaneously there was a significant degree of variability on whether animals should be allowed in healthcare facilities and whether they caused an increase in risk of disease. The majority of the staff did not agree that animals should be excluded from healthcare facilities. Those who did agree that animals should not be allowed held very negative perceptions toward the intervention and its impacts on staff, patients, and caregivers. The negative correlation between the anticipatory perception of the intervention’s efficacy on patients was more robust than the negative correlation to its actual efficacy on patients and caregivers.
Staff agreement that animals create an increased risk of disease in healthcare settings was higher than agreement that animals should be excluded from such settings. Believing that there would be an increased risk of disease had fewer correlations to other perceptions than agreeing with animal exclusion. The significant correlations were also less robust than those with agreeing to animal exclusion; these included the negative correlation between anticipating the animal-assisted activity to be beneficial for patients, enjoying when a team was visiting, and whether such interventions should continue at the facility. However, there were no significant correlations between agreeing with an increased disease risk and whether the animal-assisted activity had been beneficial for patients or caregivers.

Staff in healthcare settings are extremely familiar with issues of infection control. The differences of correlation strength may indicate that the increased risk of disease was a surmountable issue for staff. The only correlation to be more robust than for animal exclusion was with the intervention having a positive impact on staff interactions. This difference may reflect the extra stress caused by a perceived increased risk of disease spread. However, there was no significant correlation between the anticipation of and an actual increase in stress in the work place. Instead, the correlation may be a further reflection of a negative perception toward animal-assisted activities leading to negative perceptions of the activity’s impact.

Perceiving animal-assisted activities as appropriate for cancer patients was associated with positive perceptions toward the intervention in general as had been predicted. The positive correlations between perceiving the intervention as appropriate
and the degree of interaction with and enjoyment of the teams will be spoken of in more
depth later in this chapter. The pattern of the anticipatory perception of benefit for the
patient being higher than its actual perceived benefit was repeated with those who agreed
that the intervention was appropriate. However, the correlation between appropriateness
and the intervention’s benefit for caregivers was stronger than for the anticipatory benefit
or actual perceived benefit for patients. The differences between the intervention’s
efficacy for patients in comparison to their informal caregivers will also be spoken of in
more depth below.

Direct Impact on Staff

Staff did not generally agree that the animal-assisted activity would cause
extra stress prior to its implementation. There was less agreement that it had created
extra stress, and the two were strongly correlated. Staff anticipation of the intervention
causing extra work for themselves was less than that of extra stress. The actual extra
work was again less than anticipated and there was a very strong correlation between the
two. These findings further illustrate the tie between negative anticipatory perceptions
and the perceptions of the actual intervention. While the differences were not significant,
the findings do backup those of previous research in which negative perceptions of an
animal-assisted intervention were less than negative anticipatory perceptions.

The staff very much enjoyed when the teams were visiting the facility.
Significant correlations between enjoying when teams were visiting followed expected
directions; positive correlations were found with other positive perceptions toward the
intervention (liking the idea of AAA, AAA as appropriate for cancer patients, AAA
would be and has been beneficial) and negative correlations were found with negative perceptions toward the intervention (animals should not be allowed in healthcare facilities, AAA create an increased risk of disease, the intervention would create extra stress, the intervention has created extra stress).

Staff enjoyed interacting with the handler as well as the dog. Staff enjoyment of interacting with the each individual team member was less than that of having the team present at the facility. These were not significant differences but they may suggest staff members’ enjoyment may be due more to their perceptions of the intervention for patients as opposed to their individual experiences. This cannot be determined through this study but may be worth exploring in the future.

While there was a slight disagreement that staff interactions were different while a team was visiting, there was a slight agreement that the presence of a team had a positive impact on staff interactions. These results seemed to contradict each other and will be addressed toward the end of the chapter. There was also evidence that the contradictory results of these items may have been due to methodological issues.

**Direct Impact on Patients and Caregivers**

The majority of staff agreed that the addition of an animal-assisted activity would be beneficial for patients. Surprisingly there was significantly less agreement that the intervention had been beneficial for patients and caregivers. There was also more variability in the responses on whether the intervention had been beneficial than anticipating that it would be beneficial for patients. There was evidence that these differences may have had to do with the degree of interaction staff members had with the
visiting teams, the degree to which they saw the patients and caregivers interact with the teams, and the degree to which patients and caregivers spoke to staff members about the animal-assisted activity, all of which will be addressed below.

The results that involve informal caregivers should be interpreted with caution and may not be generalizable. The individuals who were perceived to be informal caregivers by staff, as well as the terminology used on the questionnaire assumed that individuals accompanying patients were their informal caregivers. The issues with these assumptions will be discussed in more depth later in this chapter.

**Companion Animal Ownership**

All but one respondent had had a companion animal in the past. The vast majority of the sample currently owned at least one companion animal. The statistical analyses that were run between owners and non-owners could only be interpreted as exploratory due to the disproportionate numbers in each group.

The finding that people with companion animals were more likely to like dogs in general was expected. Owners of companion animals were less likely to agree that animal-assisted interventions would create an increased risk of disease. However, they were equally likely to believe that animals should be excluded from healthcare facilities as non-owners.

Type of companion animal ownership seemed to have some impact on perceptions toward the intervention. There was a more even split among the three groups (dog only, cat only, dog and cat), which aided the validity of the results. The small number of participants in each group was not ideal and probably led to the violations of
the assumption of homogeneity of variances. The finding that dog owners were significantly more likely to believe the intervention had been beneficial for patients compared to cat owners suggested that being in the company of dogs may influence perceptions toward an intervention with dogs. It did not suggest that people who lived with cats would not perceive such an intervention to be beneficial, as there was no difference between staff with dogs only and staff living with dogs and cats.

Staff who presently had or had had at least one companion animal in the past reported an average degree of closeness to the companion animal with which they had felt closest to. There was not a tremendous degree of variability in these scores. The degree of closeness was not related to perceptions of the impact of the animal-assisted activity on staff, patients, or caregivers, or to animal-assisted activities in general.

The only significant correlations with the closeness to companion animal scores were to perceptions involving the appropriateness of such interventions and to liking dogs in general. These correlations followed expected directions; people who felt closer to a companion animal were less likely to believe animals should not be allowed in healthcare facilities, while they were more likely to perceive animal-assisted activities as appropriate for cancer patients and to like dogs in general.

Research Questions and Hypotheses

There was a strong trend for negative perceptions of animal-assisted activities to be correlated to negative perceptions of the intervention, and for positive perceptions of animal-assisted activities to be correlated to positive perceptions of the intervention. These results supported the first hypothesis. The strong negative correlation between
agreeing that animals should not be allowed in healthcare facilities and that animal-assisted interventions should continue backed up the hypothesis that staff who held negative perceptions toward animal-assisted activities would have negative perceptions toward the introduced intervention.

The hypothesis which predicted that the extra stress created in the work place and the extra work created for individual staff members would be significantly lower than either had been anticipated to be, was not supported. While the results went in the presumed direction, the differences were not significant. Staff had low expectations that either would take place which made significant differences less likely to occur.

The only perceptions that had significant differences across degree of staff interactions with visiting teams concerned the efficacy of the intervention. These results partially supported the third hypothesis concerning the impact of direct interaction with teams and perceptions of the intervention. Staff who reported a lot or a little direct interaction with teams agreed more that the teams had a generally positive impact on staff interactions than those who had no interaction with the visiting teams. Personal interaction with the teams did not have a significant impact on the perception of the interaction’s efficacy, anticipated or actual, for patients or caregivers.

The mean score for enjoying interacting with the handler was not significantly different from interacting with the dog. While the mean scores were not significantly different, there was much greater variety in degree of enjoyment from interacting with the dog. This difference was most likely attributable to whether or not staff members liked dogs in general.
The hypothesis that the animal-assisted intervention would have an impact on staff interactions was not well supported by the data. This finding was contrary to previous studies (e.g. Bernstein et al., 2000). There seemed to be little consensus on whether the intervention had had any direct impact on staff. This was somewhat disappointing as the animal-assisted interaction’s effect on staff was one of the main foci of the study. The intervention’s impact on staff interaction had been explored due to the established importance of communication on staff job satisfaction and on patient satisfaction with healthcare received.

The staff’s overall opinion of the intervention was very positive. Staff strongly agreed that animal-assisted activities should continue at the facility. The correlations with this perception once again followed expected directions. The hypothesis that staff who agreed that animal-assisted activities should continue would have more positive perceptions toward such interventions in general and their benefits was supported. It was interesting to note that the strongest correlation was between agreement for continuation and enjoying interacting with the handler. This correlation was much stronger than with the dog, and slightly stronger than enjoying when a team was visiting.

The finding that staff believed the animal-assisted activity had been significantly less beneficial for patients than it had been anticipated to be was unexpected and contrary to the hypothesis. The finding was made more surprising when the trend was found to work in both directions. Perceptions that correlated positively with anticipating the animal-assisted activity to be beneficial for patients (liking the idea of AAA, AAA are appropriate for cancer patients, and enjoying when a team was visiting)
were more robust than with the intervention having actually been beneficial for patients. Some perceptions which had positive correlations with anticipating the benefit for patients prior to implementation (generally liking dogs, enjoying interacting with the dog) were no longer significant with the intervention having been beneficial for cancer patients after implementation. Equally interesting was the fact that perceptions which had correlated negatively with anticipating the animal-assisted activity to be beneficial for patients (animals should not be allowed in healthcare facilities, and it would create extra stress) were more robust than with the intervention having actually been beneficial for patients.

Three perceptions had the opposite pattern; that is, the animal-assisted intervention was seen to have been more beneficial than it had been anticipated to be. Two of those perceptions addressed the intervention’s effect on others: teams having a generally positive impact on staff interaction and the intervention having been beneficial for caregivers. Teams having a generally positive impact on staff interactions did not have a significant correlation with anticipating the intervention to be beneficial, while being beneficial for caregivers had. The belief that an intervention had been beneficial for one group could easily extend to the belief that the same intervention had been beneficial for all groups for whom it had been available.

The remaining, and arguably most interesting perception, was personal enjoyment of interacting with the handler. This perception was based on personal experience rather than the perception of other people’s experiences. The correlation between the intervention having been beneficial for patients was much more robust than
the anticipatory perception. This anomaly in the results indicated that enjoyment in interacting with the handler had a unique effect on the perceptions of the animal-assisted activity’s efficacy.

The degree to which staff had seen patients and caregivers interact with the visiting teams did affect how staff perceived the intervention’s benefit for the two groups. Staff who had seen a lot of patient interaction with the teams were more likely to agree that the intervention had been beneficial for patients and caregivers. Likewise, those who had seen caregivers interact a lot with the visiting teams were more likely to agree that the animal-assisted activity had been beneficial for patients and caregivers. These findings, along with that of the general impact on staff, suggest that animal-assisted interactions are more likely to be perceived as beneficial when they are directly or indirectly experienced.

Communication from patients and caregivers to staff about the animal-assisted activity did play a significant role in whether staff perceived the intervention to be beneficial for patients and caregivers. Staff to whom patients had spoken a lot about the intervention were more likely to perceive the animal-assisted activity as being beneficial for caregivers. This was true for the benefit for caregivers as well, but could not be held up as statistically significant. However, this finding should not be completely dismissed. The influence of communication on staff perceptions toward the intervention’s efficacy were strongly backed by the results of communication from caregivers. Staff to whom caregivers had spoken to a lot about the intervention were more likely to agree that the
animal-assisted activity had been beneficial for caregivers and patients than staff who had not been spoken to at all by caregivers.

The hypothesis that staff who held more favorable opinions toward dogs in general would be more likely to hold positive perceptions of the animal-assisted activity was supported. The most robust correlation was with enjoying interacting with the dog. These findings further underscored the influence that perceptions toward dogs have an influence on how people view interventions which include dogs.

Interestingly, generally liking dogs was not correlated to perceptions of the actual efficacy of the intervention. Agreement with liking dogs was correlated to items concerning nearly every aspect of the intervention aside from of its benefits for patients or caregivers. The results from the closeness to pet item had similar results. The results could suggest that perceptions of animals and dogs may influence attitudes toward animal-assisted interventions with dogs, but they do not play a significant role in determining whether or not such interventions are deemed to be effective.

This result could be unique to staff in healthcare settings who are adept at determining whether an intervention is helpful for the population they serve. The view of healthcare staff as being free of any subjectivity when judging an intervention’s efficacy, especially one with such a strong social component, is simply not realistic. The results indicated that the degree to which staff members had interacted with or had observed interaction between the volunteer teams and patients and caregivers had a large influence on how the staff perceived the intervention.
The results from the closeness to companion animal item only partially confirmed the hypothesis that high scores on the item would be related to more positive perceptions of the intervention and animal-assisted activities in general. The lack of diversity of scores also made it less likely that there would be significant relationships between this and other variables. This item would benefit from a larger sample size.

The findings of staff interaction with visiting teams and communication between staff, patients, and caregivers illustrate the influence that direct interaction and communication had on determining whether or not the intervention was beneficial. The findings clearly illustrated that the presence of the handlers were crucial for staff acceptance of the animal-assisted activity program. The results also seemed to show that there needed to be at least one component of direct or indirect experience with the visiting teams in order for staff to view the animal-assisted activity as beneficial for patients and caregivers.

Limitations

There is an inherent limitation in self-report data for participants to respond in a manner which may reflect perceived social desirability. While there were extensive measures put in place to ensure respondent anonymity, social desirability can never be entirely eliminated. However, it was not in the respondent’s interest to report positive perceptions toward the intervention if he or she did not feel the intervention was either appropriate or not should continue. The fact that only aggregated data would be reported was made clear, and it was hoped this would help to promote honest responses.
The way in which surveys were administered created further internal validity problems. Participants were self-selected and there was no way to ensure that a respondent had not completed more than one questionnaire. The self-selection may have led to a skew in the results. It is possible that staff who felt more strongly about the intervention (either positively or negatively) would have been more likely to complete the questionnaire, while those who did not have strong opinion may have been less likely to participate.

The methodologies employed to ensure anonymity made it impossible to determine whether respondents were administrative or healthcare staff. There is evidence that both groups care deeply about the patients and their informal caregivers and it would have been interesting to explore how perceptions differed between the two groups. It would have been interesting to determine whether there were significant differences between the groups in the degree of interaction with visiting teams, as well as their direct and indirect interactions with patients and caregivers concerning the animal-assisted activity. There are also significant differences within each group (such as job title and responsibilities) which may have lead to differences in perceptions.

These differences are especially relevant in the healthcare staff group. There are staff positions within healthcare staff (Registered Nurse, Licensed Practical Nurse, Licensed Vocational Nurse, Certified Nursing Assistant) that differ significantly between level of education, expertise, and the degree of interaction with patients. Within RN staff there are three minimum levels of educational attainment, two which are considered to be technical (diploma and an Associate Degree), and the BSN (Bachelor’s of Science in
Nursing) which is considered to be professional (Johnson, 1988). The National Advisory Council on Nurse Education and Practice (NACNEP) has recognized that there are differences in the preparedness of RN staff, with those with BSN being better prepared with the analytic and assessment skills necessary for working in healthcare settings (American Association of Colleges of Nursing [AACN], 2005). A meta-analysis of 139 studies exploring the differences between RN educational levels found that BSNs were more effective at communication skills, overall knowledge, and problem solving (Johnson, 1988). The same study did not find significant differences between RNs with a diploma or an associate degree. The educational level of RNs has also been shown to have a direct impact on patient outcomes. In a study of discharged adult surgery patients, hospitals which employed greater proportions of BSNs or RNs of higher educational attainment, had lower patient mortality rates (Aiken, Clarke, Cheung, Sloane, & Silber, 2003).

Years of experience also play a role in job performance, with more years of experience closing the performance gap between education levels (Aiken et al., 2003; Johnson, 1988). Most pertinent to this study, is the difference that has been found between educational levels and the ability to evaluate the effects of interventions. RNs with a BSN have been shown to be better at evaluating the effectiveness of interventions for the patients that they work with (Giger & Davidhizar, 1990). These established differences were not taken into account in the design or implementation on the present study. The level of position, training, and education of participants could not be determined. All three factors may have had a direct impact on the degree of interaction
staff had with patients and caregivers as well as their ability to assess the effects of the intervention.

There may have been a confound beyond staff position and the degree of interaction members of staff had with visiting teams. Staff who did not hold positive perceptions toward animal-assisted activities or dogs in general may have actively avoided interacting with the teams, both directly and indirectly. Because the degree of interaction with teams had significant correlations with perceptions of the intervention this may have influenced results.

While this may have been the first study to explore the impact of an animal-assisted activity on caregivers in an outpatient oncology unit a gross assumption was made with the use of the term caregiver. There was no way to ascertain that the individuals accompanying patients in waiting rooms and the Infusion Therapy unit were informal caregivers for the patients. The role was assigned by the items on the questionnaire. Individuals deemed to be caregivers were done so based on the perceptions of the staff at the healthcare facility. This was a major limitation to the findings of this study and may have made generalizability of the findings concerning caregivers particularly difficult.

The results on the intervention’s efficacy for the individuals perceived to be caregivers would have benefited from a question specifically addressing the anticipated efficacy for caregivers. There was no way to determine staff agreement on whether the intervention would be beneficial for caregivers, which in turn made comparisons with
perceived benefit after introduction impossible. This mistake could easily be amended in future studies.

The scale, and the results from the use of the scale, would have benefited from pilot testing. The term “beneficial” may have been too vague. The term’s usage did not allow for the interpretation of how the intervention was perceived to benefit patients or those perceived to be caregivers. However, the Cronbach’s alpha coefficient suggested that the scale did have very good reliability with the sample. The same analysis revealed that the two items assessing the intervention’s impact on staff interactions were problematic and should be revised.

Finally, the use of a pre-test would have allowed for greater internal validity. It is not safe to assume that recalled first impressions are the same as actual first impressions. Anticipatory perceptions should have been measured shortly after staff had been notified that the intervention would be taking place. Instead, anticipatory perceptions were assessed after the visits had been taking place for over a one month period. Moody et al. (2002) had a much lower response rate 12 weeks after the introduction of an AAT program compared to six weeks prior to its introduction (115 versus 45 respondents respectively). While their study benefited from an identical pre-test and post-test, the discrepancy in sample sizes meant the two groups could not be assumed to be comparable.

Conclusions and Recommendations

The results of this study indicated that both direct and indirect experiences of an animal-assisted activity have strong impacts on whether or not staff judge such an
intervention to be beneficial for the patients and caregivers they serve. Including staff in any animal-assisted intervention may help to gain staff acceptance toward the addition of the intervention. The study repeatedly illustrated how perceptions, both positive and negative, can influence overall acceptance of an animal-assisted activity. Staff who directly interacted with the visiting teams had more positive perceptions of the intervention. The results suggested that for staff to accept the addition of an animal-assisted activity they must be able to interact with the visiting teams, but not be forced to.

Indeed, no individual must ever be forced into interacting with a visiting human-animal team. The perception of animals in general and dogs in particular have a large influence on how individuals, staff or not, perceive such an intervention. The results of this study further underscore previous findings that attitudes toward dogs in general influence the perceptions of an intervention including dogs.

The findings also illustrate the influence that past and present companion animal ownership can have on attitudes toward animal-assisted activities. The results support the idea proposed recently by others (Friedmann et al., 2010; Risley-Curtiss, 2010) that past and present companion animal ownership be taken into account when treating people in a holistic manner, such as the Planetree model of care. Risley-Curtiss suggested that animal-assisted interventions may be especially effective with people who currently have a companion animal in her overview of the role of AAI in social work. The results of this study indicate that this benefit extends to staff at healthcare facilities as well.
The staff were equally likely to agree that the intervention had been beneficial for patients and caregivers following its introduction. This is the first study to directly address the benefit caregivers may receive from an animal-assisted activity in an outpatient facility. There is a clear need for interventions that address the emotional well-being of caregivers, particularly for caregivers of cancer patients. Caregivers may spend a great deal of time at an outpatient facility, time which is focused on the well-being of the cancer patient. The established mutuality of experience between cancer patients and their caregivers suggests that an intervention which improves the mental wellbeing of the patient has the potential to improve the mental wellbeing of the caregiver. The animal-assisted activity goes even further by actively including the caregiver in the intervention. Active involvement has been cited by Johnson et al. (2003) as a mechanism in the efficacy animal-assisted interventions with patients. Direct and active involvement most likely can benefit the well-being of caregivers as well. However, such assertions cannot be made from the results of this study.

This study’s basis in staff perceptions was what set this study apart from others which have previously explored the appropriateness of animal-assisted interventions in oncology settings. The experience of an oncology unit is (most often) a novel one for patients and caregivers. Staff have more extensive experience in the oncology setting, and therefore are better able to determine whether an intervention has been generally beneficial or not. The overall agreement that animal-assisted activities should continue at the facility gave empirical evidence that healthcare staff view such interventions as appropriate and beneficial. The external validity of these findings
provide further confirmation of animal-assisted activities’ roles as effective, low-cost interventions. The results also help to enhance animal-assisted activities as appropriate complementary and alternative therapies for cancer patients.

While the staff did not generally agree that staff interactions were different while teams were visiting, they did tend to agree that the presence of the team had a positive impact on staff interactions. Effective and positive communication between staff has a strong effect on cancer-care providers and the degree to which they experience compassion fatigue (Najjar et al., 2009). The agreement, though slight, that the animal-assisted intervention had a generally positive impact on staff interactions indicates that such interventions may be effective at maintaining staff mental well-being in oncology units, specifically in the prevention of burnout and compassion fatigue.

The most influential results from this study concern the role of the handler. While many previous studies have called for an exploration into the role the handler plays, no empirical evidence of the support they provide could be found. The results indicated that the handler plays a vital role in the acceptance of an animal-assisted activity by staff.

There was not a significant difference in the degree to which staff enjoyed interacting with the handler or the dog. However, enjoying interacting with the handler was the only direct experiential variable to correlate more strongly with the intervention having been beneficial for patients and caregivers than for anticipating that the intervention would be beneficial for patients. Enjoying interacting with the handler was also the strongest correlate with agreeing that the intervention should continue. These
results make a solid argument that the handler is integral for staff acceptance and approval of animal-assisted activities.

These results do not discount the role that the dog plays in such interventions. The dog is an indispensible member of any volunteer team. However, the underlying mechanisms at work may be what the dog is actively doing along with what the dog is facilitating. The results of this study support the claim by Wells (2009) that dogs act as “social catalysts.”

Chur-Hansen et al. (2010) argued that one of the major limitations in the AAI literature was the degree of interaction with each member of the visiting team and those receiving the interventions were not made clear. This lack of clarity increased the ambiguity of the role and impact of the handler and the registered animal. Empirical methodologies employing control groups (e.g. Cole, & Gawelinski, 2007; Johnson et al., 2008) are necessary to determine the impact that the handler has on recipients of AAI. Control groups were not used in this study due to the focus on the re-introduction of animal-assisted interventions to the healthcare facility and the acceptance of staff toward the specific intervention.

In this intervention the interactions took place in tandem, following the healthcare facility’s protocol. The patient or caregiver had already indicated (via a sticker) that he or she would like a visit and each visit was begun with the handler administering hand sanitizer to the patient or caregiver. While there was not a strict protocol, visits began with an interaction between both the handler and the dog. The presence of the registered dog allowed for patients and caregivers to experience
interactions with a friendly dog, a friendly stranger, and also provided a common experience for patients and caregivers to share with staff. These interactions worked together to increase the amount of social support available to patients and caregivers in the out-patient oncology unit.

It is quite possible that the presence of the visiting team did provide a momentary distraction for staff. These interactions were not centered around cancer nor the management of the disease. However, it is unlikely that this was the root of the overall positive perceptions toward the intervention. Staff cannot allow themselves to be distracted for any significant amount of time when providing patient care in an oncology unit. Instead, the same reasons oncology staff are uniquely susceptible to compassion fatigue may be the reason why both direct and indirect interaction with the teams led to positive perceptions of the intervention.

Staff, both administrative and healthcare, observed the social support patients and their caregivers received from the visiting teams. When patients and caregivers spoke to staff about the visits this further increased the social support that staff believed was provided by the visiting teams. The increased social interaction which the dog had facilitated increased the direct social support that patients and caregivers were perceived to be receiving at the facility. It is doubtful that patients would be able to perceive an animal-assisted activity’s benefit without direct contact with a visiting team. The fact that staff had speaks to the compassion of those who choose to work in an oncology unit.

The results of this study do not speak to whether or not the animal-assisted activity was in fact beneficial for the patients or caregivers, it only provides evidence for
staff perceptions. Winkler et al. (1989) provided evidence that staff may perceive the addition of an animal-assisted intervention to be more beneficial than the people it is meant to serve. The true measure of such an intervention’s efficacy is how it benefits the recipients on the intervention. Palley, O’Rourke, and Niemi (2010) labeled whether or not patients benefited as “the ultimate question” in analyses of AAI. Future studies should also explore the degree to which the handler influences the perceived benefit from the patients’ and caregivers’ point of view.

There is another important point of view that was not included in this study, that of the dogs. Ideally animal-assisted interventions are mutually beneficial for the volunteer team and the recipients of the visits. Animals, in most cases dogs, are the backbone of any animal-assisted intervention program. There is evidence that participation in an animal-assisted activity program can lead to a significant increase in the salivary cortisol levels of dogs (Haubenhofer & Kirchengast, 2007). It is morally imperative that their well-being be taken into account in the design and implementation of all animal-assisted intervention programs.

The addition of the volunteer-driven intervention succeeded in incorporating Planetree’s Acute-Care Components of Friends and Social Support; Complementary Therapies, and Healthy Communities (Planetre, 2009). The results of the study are hoped to further animal-assisted activities as effective, low-cost interventions which can have positive impacts on patients and informal caregivers, along with the staff in healthcare facilities who care for them.
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Orlandi, M., Trangeled, K., Mambrini, A., Tagliani, M., Ferrarini, A., Zanetti, L., . . .


Animal-assisted Activity Questionnaire

Thank you for taking the time to complete this questionnaire. It will take about 5 - 10 minutes to complete and there are questions on both sides of the pages. This anonymous questionnaire asks you about your experiences at Enloe Regional Cancer Center in regards to the animal-assisted activity as well as your current and past pet ownership. Please fill out the questions below by either circling an option or filling out the space provided. If you need additional space to answer questions adequately feel free to use the back of this questionnaire or a separate piece of paper.

The information that is collected will be used to produce a Master’s thesis and only aggregated information will be used. In order to maintain strict confidentiality there are no identifying demographic or employment characteristics included in this questionnaire. If you choose to include additional comments, those comments may be quoted in the final thesis. However, due to the strict anonymity of the survey the comments cannot be attributed to any individual. Individual questionnaires will not be shared with anyone at Enloe Medical Center or the Enloe Regional Cancer Center and will remain locked in a filing cabinet in the Thesis Chair’s office.

Some questions may seem repetitive but please answer each one. Though only completed surveys can be used for data analysis, you have the right to stop participating at any time and may skip items that you do not want to answer. If you have any questions, please contact Jessica Bibbo at bibbo.jess@gmail.com or call (530) 966-5756.

Your responses to this questionnaire will be confidential and there are no risks because of your participation in this study. Please be honest in all of your responses. You are not required to complete the questionnaire at the Cancer Center. Feel free to complete it at your leisure but make sure to return it to Jacque at the front desk of Radiation Oncology by 12 PM on Friday March, 25th in the blank envelope provided.

Thank you!

This section asks you about your perceptions of the animal-assisted activity in which trained and certified human-canine volunteer teams have been visiting the Cancer Center over the last four weeks. Please rate each statement on the degree to which you either “Disagree Completely” (1) or “Completely Agree” (9), with five (5) indicating a neutral response. Please circle the number that best describes how you feel. Some questions have three choices: “No;” “Yes, a little;” “Yes, a lot”. Please circle the response that best indicates your experiences.

1. I like the idea of animal-assisted activities.
   Disagree Completely  Completely Agree
   1  2  3  4  5  6  7  8  9
2. I do not think animals should be allowed in health care facilities.
   Disagree Completely  Completely Agree
   1  2  3  4  5  6  7  8  9

3. Interventions involving animals create an increased risk of disease (e.g. zoonosis).
   Disagree Completely  Completely Agree
   1  2  3  4  5  6  7  8  9

4. Animal-assisted activities are an appropriate intervention for cancer patients.
   Disagree Completely  Completely Agree
   1  2  3  4  5  6  7  8  9

5. When I first heard of the idea I felt that the addition of the animal-assisted intervention would
   create an extra stress in my work place in general.
   Disagree Completely  Completely Agree
   1  2  3  4  5  6  7  8  9

6. The addition of the animal-assisted intervention has created extra stress in my work place in
   general.
   Disagree Completely  Completely Agree
   1  2  3  4  5  6  7  8  9

7. When I first heard of the idea I felt that the addition of the animal-assisted intervention would
   create extra work for me in my work place.
   Disagree Completely  Completely Agree
   1  2  3  4  5  6  7  8  9

8. The addition of the animal-assisted intervention has created extra work for me in my work place.
   Disagree Completely  Completely Agree
   1  2  3  4  5  6  7  8  9

9. I personally enjoy when a team is visiting.
   Disagree Completely  Completely Agree
   1  2  3  4  5  6  7  8  9
10. I generally like dogs.

   Disagree Completely  Completely Agree
   1  2  3  4  5  6  7  8  9

11. I have interacted with a/the visiting human-canine team(s).

   No  Yes, a little  Yes, a lot

   If “No,” please move on to question 14.

12. I enjoy interacting with the visiting human volunteer(s).

   Disagree Completely  Completely Agree
   1  2  3  4  5  6  7  8  9

13. I enjoy interacting with the visiting dog(s).

   Disagree Completely  Completely Agree
   1  2  3  4  5  6  7  8  9

14. Interactions between staff are different when a visiting team is present.

   Disagree Completely  Completely Agree
   1  2  3  4  5  6  7  8  9

15. In general the presence of a team has a positive impact on staff interactions.

   Disagree Completely  Completely Agree
   1  2  3  4  5  6  7  8  9

16. Animal-assisted activities should continue at this facility.

   Disagree Completely  Completely Agree
   1  2  3  4  5  6  7  8  9

Optional: Additional comments on the topic of the addition of the animal-assisted activity:
This section asks you to rate various aspects of your perceptions of the effect of the animal-assisted activity on patients and their caregivers. Some questions have the same three choices as above: “No;” “Yes, a little;” Yes, a lot;” while others use the same one (1) to nine (9) scale as above, with five (5) indicating a neutral response. Please circle the word or number that best describes how you feel or your experiences.

1. When I first heard of the idea I felt that the addition of an animal-assisted intervention would be beneficial for the patients.

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<thead>
<tr>
<th>Disagree Completely</th>
<th>Completely Agree</th>
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2. I have seen the patients interact with visiting dogs.

<table>
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<tr>
<th>No</th>
<th>Yes, a little</th>
<th>Yes, a lot</th>
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3. Patients have spoken to me about the animal-assisted activity.

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<tr>
<th>No</th>
<th>Yes, a little</th>
<th>Yes, a lot</th>
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4. The addition of an animal-assisted intervention has been beneficial for the patients in general.

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<tr>
<th>Disagree Completely</th>
<th>Completely Agree</th>
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5. I have seen the caregivers of the patients interact with visiting dogs.

<table>
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<tr>
<th>No</th>
<th>Yes, a little</th>
<th>Yes, a lot</th>
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6. Caregivers of the patients have spoken to me about the animal-assisted activity.

<table>
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<tr>
<th>No</th>
<th>Yes, a little</th>
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7. The addition of the animal-assisted activity has been beneficial for the caregivers in general.

<table>
<thead>
<tr>
<th>Disagree Completely</th>
<th>Completely Agree</th>
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Optional: Additional comments on the topic of the effect of the animal-assisted activity on patients and their caregivers:
This section asks you about your current and past pet ownership history.

1. Do you currently have a pet?
   Yes  No

   If yes, what kind of animal(s) and how many?
   ________________________________________________________________
   ________________________________________________________________

2. Have you had pets in the past?
   Yes  No

   If yes, what kind of animal(s) and how many?
   ________________________________________________________________
   ________________________________________________________________
   ________________________________________________________________

3. Please answer this question if you currently have, or in the past, have had a pet. Consider a pet you currently have or one that lived with you previously. Think about the pet with which you are or were closest. Please select the picture that best describes your relationship with that pet.

   Optional: Please write any other comments you may have about animal-assisted interventions at the Enloe Cancer Center and in Radiation Oncology on the back of this page.

   Thank you!