The effect of human-animal bonding on quality of life

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THE EFFECT OF
HUMAN-ANIMAL BONDING ON
QUALITY OF LIFE

by

Johanna B. Hanson

A thesis submitted in partial fulfillment
of the requirements for the degree of

Master of Science

in

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ABSTRACT

The purpose of this study was to determine whether pets have a positive impact on the lives of their owners by improving their quality of life (QoL). In addition, the study examined the relationship between pet bonding, selected demographic variables and QoL among pet owners and non-pet owners.

The subjects consisted of 136 pet owners and 101 non-pet owners from selected church congregations in a Southwestern state. Results of the t-test indicated no significant difference in the QoL scores between pet owners and non-pet owners (p = .232). Yet on a qualitative level, pet owners (90.3%), felt that their pet did affect their QoL.

Qualitatively, five major themes were represented. The largest supported theme was that pets provide unconditional love and companionship, followed by emotional and social support, increased laughter and entertainment, increased physical activity and lastly, a feeling of security and protection.
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CHAPTER 1

INTRODUCTION

The volume of literature involving the human-animal companion relationship has been growing since the 1970's and has gained recognition as an important area for research (Barba, 1995). The therapeutic benefits of companion animals have been demonstrated through the study of varied groups of people. For example, pets have been shown to make a positive difference in the lives of elderly long-term care patients who have cognitive and physical deficits (Kalfon, 1991). Several researchers have shown that human-pet interaction has a positive impact on loneliness in the geriatric population (Calvert, 1988; Francis, 1991; Robb & Stegman, 1983; Lapp, 1991). Similarly, in 1991, Carmack demonstrated that a companion animal provides affection and social support for people suffering from AIDS. Baun, Bergstrom, Langston and Thoma (1984) remarked that the presence of companion animals lowered blood pressure and increased relaxation. One study found that survival rates from a myocardial infarction were much higher among pet owners than among non-pet owners (Freidmann, Katcher, Lynch and Thomas, 1980). Most studies, though, have centered on the elderly and/or patients with disease conditions. Reviewed individually, these studies illustrate some of the significant findings concerning the human-pet companion relationship. The studies also illustrate
that the general population needs to be studied in greater depth with relation to the human-animal relationship (Stallones, Marx, Garrity & Johnson, 1990).

Perhaps the major role of the companion-animal is the enhancement of the owner's sense of well-being, social support, fun, and relaxation. This role demonstrates the concept of "quality of life" which refers to the relevant aspects of subjective feelings, symptoms, and the sense of well-being characterizing a pet owner, and which represents an umbrella rubric under which the possible benefits of the companion-animal contact can be studied (Wilson, 1994).

Statement of the Problem

Numerous human-animal studies have focused on elderly and other specific populations when looking at the individual aspects of quality of life. Many of these studies have identified the therapeutic benefits of animals in relation to those populations but they have failed to incorporate quality of life as an assessment measurement, thereby providing less important results. As mentioned above, limited studies have been done which include normal populations of people, different cultures, and non-traditional relationships (Wilson, 1994; Kidd, A. H. & Kidd, R. M., 1989). The lack of such studies prompts the question, in the general population, does caring and living with a pet improve one's quality of life?

Purpose of the Study

The purpose of this study was to compare quality of life between pet owners and
non-pet owners in a large city in the Southwestern part of the United States. In addition, the study investigated the relationship of pet bonding using selected demographics to highlight quality of life among pet owners and non-pet owners.

Significance of the Study

Ideally, the foremost goal of health care professionals should be finding ways to improve a patient's quality of life. The health care profession would benefit from information which maintains or enhances quality of life for individuals and families (Davis, 1991). The increasing therapeutic evidence of animals in different settings, including having pets in the home may improve one's quality of life for reasons such as the unconditional and indiscriminate love which companion-animals provide. If quality of life is improved by owning a pet, then health care providers could begin to rely on new avenues of treatment which might include a recommendation of pet ownership. In this study, Betty Neuman's Systems Model was used as the supporting conceptual framework.

Nursing science has focused on the expansion of relationships between persons and their family and their environments relative to health and illness (Marchione, 1986). Just as a nursing assessment should include all members of a family so does pet ownership affect an entire family. Since many people across the United States consider their pet to be a member of the family (Cain, 1985, Cain, 1991; Soares, 1985; Brickel, 1985), it is therefore important to understand how a pet impacts the members of a household. When a pet becomes part of a family, the family members tend to react to the
pet the same way they would react to a human. For example, the death of a pet may result
in deep and prolonged grief by the individual or family members. Patient pet owners who
worry about the care of a "furry" family member could possibly jeopardize their own
personal health care by resisting hospitalization or other needed treatment. Even pet
illness can have an adverse impact on its owner's health. All of these situations which
arise from pet ownership should be understood and acknowledged by health care
providers. A better understanding of the companion-animal relationship has potential to
improve patient treatment outcomes and overall quality of life for pet owners.

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CHAPTER 2

REVIEW OF THE LITERATURE

As evidenced by an increased amount of literature on the subject, the importance of pets in people's lives has become more widely recognized. The expanding evidence indicates that companion animals can significantly alter life patterns, social well-being, and emotional and physical responses. In this chapter, the isolated aspects of quality of life which have been studied with regards to pet ownership and pet therapy will be explored. As indicated in the introduction, in 1994, Wilson remarked that quality of life represents an umbrella rubric under which the potential benefits of human-animal interaction should be studied. This chapter will demonstrate why the measurement of quality of life is appropriate when analyzing the human-animal bond.

The literature review begins with the evolution of the concept of "quality of life" and those elements that quality of life encompasses. The discussion will include how pets influence some domains of quality of life and will also contrast the potential negative effects of pets on humans. In conclusion, the review will discuss attachments to pets and the family life cycle before finally highlighting nursing theories regarding pets.
Quality of Life

Several important articles were published in the late 1940's that initiated a shift in the way which we have come to view health and evaluate our medical interventions (Aaronson, 1989; Flannagan, 1982). The World Health Organization in 1947 introduced a broadened definition of health as "a state of complete physical, mental and social well-being, and not merely the absence of disease and infirmity" (p. 29). Consequently, quality of life has become an important concern in social policy and health care. But social awareness does not provide a concrete path for research. Researchers and health care professionals have been struggling with the definition of quality of life and how to measure it. In multiple studies, the same or similar dimensions have been identified in the concept of "quality of life," namely a series of domains. The domains most often identified are life satisfaction, physical health, perceived stress, affect, friendship, marriage, family, life goals, housing and neighborhood, city and nation, self-esteem, depression, psychological defense mechanism, and coping (Bortner, & Hultsch, 1970; Cambell, 1976; Aaronson, 1989; Ferrans & Powers, 1985). Although researchers differ in the list of domains that define quality of life, Ferrans & Powers (1985) identified a consensus where life satisfaction is the most important domain.

Using the measure of quality of life allows a researcher to view involvement with animals in the context of multiple social influences (Wilson, 1994). Therefore, the impact of pet ownership may be viewed not in isolation, but in interaction with other social influences. For example, caring for a pet may affect the quality of life of persons experiencing multiple stresses (from family dislocation, poverty, etc.) differently from
those who are not highly stressed (Melson in response to Wilson, 1994). Furthermore, Wilson (1994) presented the idea that individuals are concerned not only with how long they live, but with positive elements that constitute "qualities" that give their life meaning and value.

The broadening definition of quality of life has helped expand the treatment perspective of health care providers. When selecting treatment strategies, they are more increasingly aware of quality of life issues. Patients take an active role in keeping quality of life a main concern. In a study of older individuals who are usually at risk for chronic conditions, the potential of a pet intervention bore examination in part of the quality of life (Melson in response to Wilson, 1994), suggesting it plays a key role in treatment.

Over the last 15 years, the measure of quality of life as it related to pet ownership has not been extensively studied (Barba, 1995). Barba supported this assertion by reviewing research published from 1988 to 1993 on the human/companion animal bond. She used CINAHL, ERIC, Medline, and Psychological Abstracts, which are four computerized bibliographic databases, to search for the research studies, finding only 52. Reviewing the research reports (using a shortened form of the Selby Research Assessment Form II), the descriptive data was analyzed for characteristics such as "attributes of author, grant funding, purposes, quality of literature reviews and conceptual framework, setting and sampling, research design, and implication for future research" (p. 9). Barba found social support to be the most frequently cited framework and concluded that understudied populations included rural groups, the middle aged, adolescents, and institutionalized elders. Quality of life was not represented as a conceptual framework
anywhere in Barba’s review.

Barba’s study reveals that quality of life as an assessment tool can be found only in part. Researchers may use one or two domains of quality of life in their studies, but have not as of yet, included the entire concept. The therapeutic advantages of an animal companion relationship have been supported in some findings but none have entirely encompassed “quality of life”.

Health and Functioning

High blood pressure can predispose a person to a number of health risks; alternative methods for lowering blood pressure are desirable. Baun, Bergstrom, Langston & Thoma (1984) set out to compare the effects of reading quietly, petting one’s own dog and or petting a strange dog on blood pressure, heart and respiratory rates. In their study, Baun et. al., found a significant difference in blood pressure between those participants who were petting a companion dog and those who were petting a dog with whom no bond existed. They also found a decrease in both systolic and diastolic blood pressure that occurred during petting a companion dog which paralleled the relaxation effect of quiet reading. This study suggests that petting a dog has a calming and relaxing effect. Although the study provides an encouraging outcome, questions still remain regarding the long-term consequences of petting companion animals as an adjunct to relaxation. Petting and caring for a companion animal could provide a short distraction period when the person focuses away from a stressful day but not necessarily a permanent health solution. Blood pressure, however, is only a very small part of health and
functioning. While health and functioning are important "qualities", they by no means determine an improved quality of life.

Another study, looking at the possibility of increasing life expectancy, also considered pet ownership. Friedmann, Katcher, Lynch and Thomas (1980) investigated the link between pet ownership and the 1-year survival rate of patients after discharge from a coronary care unit. The researchers interviewed 92 post-MI participants using an inventory of social data and an adjective checklist for psychological mood status. The inventory assessed the patient's social network, socioeconomic status, geographic mobility, and living arrangements, including, most significantly, pet ownership. No discussion of the reliability of the tools or the level of pet attachment was provided. Of the 39 non-pet owners, 11 died, as opposed to 3 out of 53 pet owners. Due to variance of social variables only a small proportion (3.5 percent) of the difference in mortality is attributable to pet ownership itself. It would have been interesting to compare the results of the quality of life in this same population of post MI pet owners and non-pet owners.

In an even less conclusive effort, pet ownership and attachment in relation to health was studied through a sampling of the general population by Stallones, Marx, Garrity & Johnson in 1990. A probability sample of U.S. households with at least one resident aged 21 to 64 years old was obtained by the researchers using a two-stage cluster design stratified by U.S. census regions. The population (N=1300 households) was selected by random-digit dialing. No significant associations were found between pet ownership and his/her pet attachment with improved health and reduced emotional distress. Stallones et al. concluded that the association between pet ownership and health
is complex and inconsistent over all age groups. Other researchers agreed that, although one's subjective health status is an important aspect of quality of life, it is not the only important aspect of quality of life (Aaronson, 1989; Ferrans & Powers, 1985; Peplau, 1993; Holmes, 1989).

Ferrans & Powers believe that life satisfaction is, however, the most important quality of life domain. Although most studies have found positive effects regarding a pet's effect on humans, Ory & Goldberg (1983) found that there was no relationship between the presence of pets in the home and increased life satisfaction. The population studied was 1,073 married women aged 65 to 75. In this study, life satisfaction was measured by a single item question: "Taken altogether, how would you say things are these days... Would you say you were very happy, pretty happy, or not too happy?" (p. 308). Ory & Goldberg detected a statistically non-significant relationship between the qualitative aspects of pet ownership and happiness. More specifically, the relationship between pet ownership and happiness in this group of people was found to be dependent on socioeconomic status. Pet owners with high socioeconomic status were happier, than pet owners with lower socioeconomic status. Low socioeconomic pet owners even claimed to be unhappy causing the researchers to be unsure of the mechanisms by which socioeconomic status affected the relationship. The overall life satisfaction for these elderly women with pets may have been higher than those women without pets despite their socioeconomic status if the researcher had been able to measure life satisfaction more accurately, but they concluded that the relationship between perceived happiness and pet ownership is complex and needs to be further specified.
Humor and Laughter: Its Affect on Health

Humor involves basic characteristics of an individual and is flowingly expressed in the body, emotions and spirit (Wooten, 1996). "It is a quality perception that enables us to experience joy even when faced with adversity" (p. 49). In the book, Anatomy of an Illness, Cousins (1979), discussed how he used laughter to reduce physical pain and discomfort of ankylosing spondylitis. He believed that negative emotions may have a negative impact on his health and that laughter could open him to feelings of hope, joy, confidence, and love. Other researchers have also reported that laughter and humor can serve to ameliorate depression (Nezu, Nezu & Blissett, 1988), reduce pain (Adams and McGuire, 1986) and positively enhance the immune system functioning (Dillon & Baker, 1985). Martin, Kuiper, Olinger and Dance (1993) concluded that humor, in addition to buffering the effects of stress, may also play an important role in enhancing the enjoyment of positive life experiences.

W. F. Fry (1994) explained how humor and laughter affects different systems of the body. In humor physiology, the general pattern of humor impact on the body is first stimulation, followed by a period of relaxation.

The stimulatory phase is manifested by increases in heart rate, blood pressure, blood circulation, lung ventilation. The skeletal muscles are exercised and there is an increased electrochemical activity in the brain which causes a sense of alertness; pain perception is reduced, and skin temperature rises. In addition, hormone production is stimulated and circulation immune substance effectiveness is increased.

W. F. Fry's findings are consistent with those derived from the Arousal Theory of

The relaxation phase described by Fry, provides the body with a drop in blood pressure, heart rate, and respiratory rate. Muscle activity also decreases, but immune system stimulation does not. Immune system stimulation effects can be observed for several hours after the humor experience. Studies at Loma Linda University by Berk in 1989 support Fry’s research that laughter stimulates the immune system, offsetting the immunosuppressing effects of stress.

Many owners may purchase a pet for companionship or other reasons, but perhaps also for the increased laughter the pet provides to the owner. If pets, on an almost daily basis, provide laughter and entertainment, it stands to reason that companion animals may add to the health and wellness of the owner.

Pets may promote a humorous coping style further reducing the negative effects of stress. Carroll and Shmidt (1992) found a significant correlation between humorous coping style and perceived health among college students. The Situational Humor Response Questionnaire was used to measure the extent to which the students used humor in dealing with anxiety-evoking events. Health was measured by a 13-item health inventory. Unfortunately, the reliability and validity of the tools were not reported in the research.

Wellness and Quality of Life

Good or poor health defined in traditional terms is not always regarded as closely related to reported levels of well-being, happiness or life satisfaction (Holmes, 1989). Peplau in 1993 describes quality of life as including virtually all aspects of existence and
is an all-encompassing theme. She feels that quality of life is synonymous with well-being or psychological wellness. Quality of life is not a static state and can vary with a client's circumstances. Neuman (1989) states that the wellness-illness continuum implies that there is a continuous energy flow between the client and the environment. Quality of life is therefore affected by numerous factors within a person's "system" and his/her environment.

Negative Health Effects (Stressors) Related to Pet Ownership

For some people, the responsibility of having a pet can significantly affect their willingness to be hospitalized and the timing of their hospitalization (Friedmann, Katcher & Meislich, 1983). In their study on the significance of a companion animal during an owner's hospitalization, Friedmann et. al. found that the majority of pet owners (81%) were very concerned about their pets during hospital stays. Such patients who worry about their pets may experience increased stress during hospitalization which could adversely affect their health, and possibly prolong their stay.

Because pets have become such an important part of their owners' lives, the death of their animal can also adversely influence the owners' welfare. In a comparative study of bereavement between the loss of a pet and the loss of a person, Stewart (1983) reported that bereavement feelings can be just as strong during the loss of a pet as during the loss of a person. Although many individuals and health professionals are aware of the intense sadness suffered after the loss of a pet, they know that pet owners often grieve in silence, unwilling or unable to express their feelings for fear of ridicule or apathy from their peers.
(Cusack, 1988). In addition, there is a significant difference between losing a pet and losing a person. The bereavement for a pet can sometimes be offset by replacement of the animal. This is not an option for the bereavement of a person. In most cases of usual animal bereavement, a replacement animal can be very successful, but only if introduced with tact, and sensitivity, and respect for the dead animal (Stewart, 1983).

Psychosocial Aspects and Pets

The most researched aspect of the health benefits of the human/animal bond is companionship (Friedmann & Thomas, 1985). The social support provided by a companion animal usually leads to decreased loneliness and improvements in psychological and physiological status. Pets have also increased socialization. Friedman & Thomas and other researchers have labeled pets "social lubricants" because they facilitate interaction with other people (Messent, 1983; Veevers, 1985).

In a study done by Messent (1983), individuals walking their dogs were found to experience more social contacts and conversations than did lone walkers. The study set near Hyde Park in London, during August of 1979, asked eight volunteers to take two similar walks through part of Hyde Park and some of the surrounding area. One walk would include a dog, one would not. An observer followed approximately 50 yards behind the participants and there was no communication between observer and participant. The responses of all people who passed within five feet of the walker or his/her dog were recorded. Messent found a significantly higher number of responses from passersby when walking with the dog than when they were walking without the dog.
(p< 0.001). On 69% of all dog walks, at least one spoken interaction took place and the mean number of interactions per walk was 2.8. For walks where the dog was not involved, 98% of the time there was no response, not even a "hello."

In 1991, Lapp found that animals served as a catalyst for cross-generational communication between nursing students and community-based older adults. The project provided an educational exchange between nursing students and residents in rent-subsidized housing. The project also included pet visitation several times a year as well as health promotion and health-focus group sessions led by the nursing students. Overall, students reported a tendency toward increased socialization among residents during the pet visitation portion of the program. The average attendance at pet visitation sessions was reported to be 12 to 18, as opposed to 8 to 10 during normal visitation. The animals were reported in this study to have served as a stabilizing feature during the visitation, allowing the students and residents to overcome barriers such as age, social class, ethnicity, and vulnerability. Lapp used a qualitative method of measurement in her study so there is no statistical information available.

Another researcher, Francis (1991), set out to test the hypothesis "that weekly domestic animal visitation to persons in adult homes would increase health self-concept, life satisfaction, psychologic well-being, social competence, social interest, personal neatness, psychosocial function, and mental function and that visitation would decrease depression" (p. 39). Francis designed the eight-week study to include a pretest-posttest control group with a sample size of 40 gathered from the two resident homes. Twenty one participants resided at the "experimental home." Pretesting consisted of a structured
interview and nonparticipant observation which included seven paper and pencil instruments yielding data on nine of the before mentioned variables. The titles of the "paper and pencil instruments" were not described in Francis' study. She reported that seven out of nine indicators of quality of life improved significantly (statistically) from pretest to posttest, but actual numbers were not included in the published article. Of the nine quality of life indicators, two variables were not significantly improved, personal neatness and health self-concept.

Pets play a major role in their owner's lives, especially owners suffering from an illness. A qualitative study by Carmack (1991) described the role of companion animals for 11 gay men with HIV/AIDS. The researcher discovered several themes which consistently appeared in the conversations with these men over an 18 month period. Carmack reported the following themes: affection and companionship; stress reduction; increased level of communication (communication shared between the person and his pets and pet's ability to facilitate communication); personal valuation; present mindedness; continuous source of support. Companion animals by their very presence provided constancy and feelings of stability through difficult times of crisis and change experienced by the men. Carmack further reported that persons with HIV/AIDS perceived their pets responsible for reducing their stress levels. Thus, the research suggested that a reduction of stress levels could positively influence the immune system. In this study, the role of pets for persons with AIDS was crucial to their well being especially if pets could decrease their stress level and, at the same time, increase their levels of self-confidence and self-esteem. Although Carmack's study did not address all
of the domains of quality of life, it did effectively illustrate how a pet improved the quality of life of men with HIV/AIDS.

Pet therapy has been used in a variety of settings. It has been particularly therapeutic with patients who have cognitive and physical deficits, resulting in behavior that is more responsive to others and more aware of their surroundings (Kongable, Buckwalter & Stolley, 1989; Winkler, Fairnie, Gericevich, & Long, 1989). Using a long-term care facility as a study setting, Kalfon (1991) set out to determine if there was a change in social behavior during pet visitation, as opposed to when other leisure activities were taking place. Seventeen female long-term care patients were assessed by their primary nurses one week prior to the start of the pet therapy sessions. The assessment tool used in the study was the Multidimensional Observation Scale for Elderly Subjects (MOSES).

Kalfon's study used MOSES to measure five areas of functioning: self-care functioning, depressed/anxious mood, disoriented behavior, irritable behavior, and withdrawn behavior. MOSES had satisfactory interrater reliabilities ranging from .97 (self-care functioning) to .58 (depressed/anxious mood) and internal consistency in the .80 range. In addition, a checklist was used to collect eight observable social behaviors for each area of functioning such as smile, laugh, look, leans, touch, verbalization, name-calling, and negative responses. The women were observed for one hour during a planned leisure activity for six consecutive weeks. After the day of leisure activity, the observation checklist was used to collect data for one hour during a pet therapy session. The results of the study showed there were more responses observed during pet therapy
sessions (N=272) than during the leisure sessions (N=239). Negative responses and name-calling were eliminated in the pet therapy sessions. Overall, there was more laughing during pet therapy sessions (N=35) than during leisure sessions (N=10). The women were also more attentive to the rabbit (N=49), than they were to the objects (e.g., ball) (N=25), both measurements being determined by observing participants "looking" at the respective items. There was significantly less withdrawn behavior and a tendency for less disoriented behavior after the six-week series of pet therapy and leisure activities than before the sessions began. No difference in level of functioning in the subscales of self-care, depression/anxious mood, or irritability was found. A significant difference in the MOSES total scores from week one to week six was found, indicating that an increase in level of functioning in this population had occurred. A "hold-over" effect of the rabbit was reported in a number of participants over the course of the week. A sense of interest and caring was shown by one woman who was reported as saying, "I am saving my apples for the rabbit," while another stated, "I am worried that the rabbit is too skinny" (p. 5-6).

In conclusion, Kaflon discussed the importance of changing the living environment of residents in a manner that helps reduce the sense of isolation and loneliness, thereby stimulating awareness. The study consequently revealed the special value of pet therapy for patients in long-term care facilities.

Although nursing home patients and physically ill patients have benefited psychologically from the presence of pets, Watson & Weinstein (1993) found no association with pet ownership and reduced emotional distress in their study of 84 working women. They also examined the relationship between emotional distress and
pet attachment, finding that the relationship was not statistically significant. The women's feelings of depression, anxiety and anger were measured and scored to evaluate their level of "emotional distress". They concluded that pet ownership may be less therapeutic for working women because of insufficient amount of time they were able to spend with their pets.

Depression, anxiety and anger are the domains included in the concept of quality of life but more of the domains should be studied in women and men who are not in nursing homes or physically ill in order to evaluate the impact of pets on their lives.

Kidd & Zasloff (1994) wanted to identify relationships among loneliness, pet ownership, and attachment. They studied 59 pet owners and 89 non-pet owners, all adult female college students. Each subject was given the UCLA loneliness Scale and the Pet Relationship Scale. Kidd & Zasloff found no differences in subjects' loneliness between pet owners and non-pet owners. However, they did report that dog owners living alone were significantly more attached to their dogs than those living with both a dog and other roommates.

Pets as Family Members

Numerous researchers have supported the concept that most families consider pets to be part of their family (Katcher & Beck, 1987; Cain, 1985; Voith, 1985; Cain, 1991). This implies that pets play a complex role in family dynamics. Furthermore, due to changes within a family life cycle, the effects of a pet on a family depends on their stage within the family life cycle (Soares, 1985; Brickel, 1985; Cain, 1991; Davis, 1991). The
cycle is made up of stages beginning with family formation and changing throughout the life of the family to the end (Davis, 1991). Duvall (1977) described eight stages for nuclear family: married couples, childbearing, families with preschool children, families with schoolchildren, families with teenagers, families launching young adults, middle-aged parents, and aging family members.

Some research has investigated the effect of pet ownership over the family life cycle (Davis, 1991). In 1987, Albert & Bulcroft reported a higher attachment to pets during the newlywed/married couple stage than during the childbearing stage. The particular effect of pet ownership seems to be the perceived ability of a pet to alleviate stress in the family, varying over the family life cycle (Davis, 1991). Many factors affect stress mediation role of a pet, such as the nature of the situational stressor, or developmental stage of the family. These factors determine the type of social support a pet might provide. For example, the need for a pet-companion following the loss of a spouse would be greater than during childbearing or launching children stages (Davis, 1991). Thus, assessing the developmental stage of a family when studying the human/animal bond provides a clearer picture of the impact that relationship has on the quality of life of an individual or a family.

Studies Using the Quality of Life Index

To the researcher's knowledge, the Quality of Life Index has not been used to study companion animals and their effect on quality of life, but has been used extensively in nursing research. The authors of the Quality of Life Index (QLI) have instituted a
policy which requires those who use the index, should report their findings to them. To date, nine articles have been published with psychometric information on the QLI, over thirty-four published research studies have used the QLI, and twenty articles provide instrument reports of the QLI. Examples of some of the research using the tool are: "Quality of Life After Angioplasty" (Bliley & Ferrans, 1993), "Predictors of Quality of Life in Heart Transplant Candidates" (Grady, Jalowiec & Hetfleisch 1993), "Quality of Life for Spouses of CAPD Patients" (Dunn, Bonner, Lewis & Meize-Grochowski, 1994), and "Quality of Life and Coping in Patients with Gynecologic Cancer and Their Spouses" (Zacharias, Cilg & Foxall, 1994).

Nursing Theories: Quality of Life & Pets

Betty Neuman's Systems Theory (1989) provides the conceptual framework for this research study. The major concepts in her model are client, variables, environment, stressors, wellness, and nursing intervention (Reed, 1993). In her model, the client system is depicted as having a basic structure or core which is surrounded by a series of concentric circles which form the basis of resource protection for the core of the system. The outer ring or circle is known as the flexible line of defense which functions to protect the usual state of wellness of the person (Neuman, 1989). Pets may add to this protective line of defense by lowering blood pressure, decreasing stress, providing relaxation, increasing a person's amount of daily exercise and improving one's overall quality of life. Neuman's System Theory will be further developed and related to pet ownership in the next chapter.

Using a meta-analysis approach, McMahon (1991) investigated nursing literature
which concerned theories and concept development with references to human-animal interactions and bonding spanning from 1860 to 1989. Most nursing models include four main concepts: person, health, environment, and nursing. McMahon notices growth in nursing thought in these four areas. Yet, she discovered a slow growth of empirical and philosophic research in the area of human-pet animal-nursing interactions. It is interesting to note that McMahon discovered an early mention of pet therapy in Florence Nightingale’s "Notes on Nursing" where Nightingale discussed how an animal can be a good companion for an ill person. Unfortunately, despite McMahon’s extensive review of the nursing literature, McMahon was forced to conclude that there were "no explanations, theoretic hypothesis, propositions, or concepts to describe, define, measure, conceptualize or validate the person-pet relationship from a nursing perspective" (p. 1).

This study adds to the body of knowledge of nursing using Neuman’s system theory in the context of the human-animal bond and its effect on the client system.

Summary

As demonstrated by the review of literature, the human/animal bond has gained popularity as a research topic in recent years. Many researchers have tried to measure therapeutic and health benefits of pets achieving limited success. Due to the complex nature of the human/animal bond, perhaps a more global view of health benefits of pets on humans can be measured by using quality of life indicators. By expanding the perspective placed on the human/animal bond, a clearer, more valuable measurement can be placed on the relationship.
CHAPTER 3

CONCEPTUAL FRAMEWORK

The review of literature has focused upon quality of life as a perspective from which to study the human-animal bond. Betty Neuman's Systems Model (1989) provides the conceptual framework for the present study's investigation of the companion-animal bond and its effect on quality of life. In this chapter, an overview of Neuman's model will be presented and followed by a conceptual map which depicts the effect of the companion-animal bond on the client system. Also presented in this chapter are the research questions, definition of terms, and assumptions of the study.

Overview of the Neuman System Model

Neuman (1989) considers the client an be an open system, constantly interacting with the environment and the stressors within the environment. (Figure 1 on the following page presents a graphic overview of Neuman's Model). The client system or person is comprised of five interrelated variables. The variables are: physiological (bodily structure and function); psychological (mental processes and relationships); sociocultural (cultural and social functions); developmental (development processes of life); spiritual (the aspect of spirituality on a continuum from complete unawareness to a high level of spiritual understanding). The client system, which also is an "individual,"
a "person," or "man" is represented by a series of concentric circles surrounding a core or basic structure. The basic structure includes innate mechanisms for temperature maintenance, genetic response patterns, and weakness or strength of body organs. The various concentric circles represent protective mechanisms for the client system. The five variables occur and are considered simultaneously in each concentric circle.

**Flexible Line of Defense**

The outermost circle is the flexible line of defense which acts as a protective buffer system for the client's normal state of wellness. This first line of defense has the capability to prevent invasion of stressors and keeps the person free from reaction to stressors. It is described in Neuman's Model (1989) as "accordion-like" and can expand providing greater protection against stressors invading the system. Single or multiple stressors impact on the effectiveness of this buffer system.

**Stressors**

Neuman (1989) describes stressors as "tension-producing stimuli or forces" (p. 23) which are classified as intra-, inter-, and extrapersonal in nature; they can occur within both the internal and external environmental boundaries of the client/client system. Intrapersonal stressors occur within the client boundary such as an autoimmune response. Interpersonal stressors are external in nature. For example, a person's role expectations or patterns of communication. Extrapersonal stressors are also in the external environment and may "include forces like financial concern or social polices" (p. 71).
Normal Line of Defense

The next and second concentric circle is the normal line of defense, which is a baseline for the client, and is the client's usual state of wellness. The normal line of defense is also flexible, but expands or contracts more slowly. This circle reflects what person has become over time, and is the result of adjustment between the five variables and environmental stressors.

Lines of Resistance

The circles closest to the core or basic structure are the lines of resistance. The lines of resistance attempt to stabilize the client system to return to the normal line of defense and wellness. These lines contain internal factors that support the normal line of defense and ultimately the inner core or basic structure. These factors, such as mobilization of white blood cells, can help reconstitute the system, but if they are ineffective, death may occur.

Environment

The environment contains all internal and external factors which may influence client system in a positive or negative manner. "This environment, developed unconsciously by the client, is a symbolic expression of system wholeness. That is, it acts as an immediate or long-range safe reservoir for existence or maintenance of system integrity expressed consciously, unconsciously, or both simultaneously" (Neuman, 1989,
Three relevant environments have been described by Neuman (1989). The first is the internal environment which consists of all interactive influences contained solely within boundaries of defined client system. It is the source of intrapersonal stressors. This environment is the result of relationships among the subsystem of the person, such as interaction of one body subsystem with another (Reed, 1993).

The second type of environment is the external environment and is a source of interpersonal and extrapersonal stressors. It consists of all the interactional influences external to, or existing outside, the person. With an individual, this environment refers to the interface of the client with another person such as a family member (Reed, 1993).

The third and last type of environment is the created environment, which is subconsciously developed by the person as an attempt to create a safe setting for functioning (Neuman, 1990). The created environment is mostly made up by the client subconsciously as the system interprets the need. An example of this is the process a person goes through when moving to a new place. One may arrange his/her furniture in new house in a similar pattern to that in the previous home (Reed, 1993). Behavior patterns are also maintained, such as morning coffee and other rituals, "all to ease into and feel less vulnerable in a new situation" (p. 12). The person does not consciously rearrange the environment; rather, it is an unconscious attempt to reduce the stress created by the new environment.

**Wellness**

Health or wellness for the person or "client system" is viewed by Neuman (1989)
as being variable and with "changing levels within a normal range, rising or falling throughout the life span, because of the basic structure factors and the satisfactory or unsatisfactory adjustment to environmental stressors (p.33). When system needs are met completely, a state of optimal "health" or wellness exists. Contrarily, unmet needs reduce this healthy state (Reed, 1993). Wellness of the person is based upon the actual or potential effect that stressors in the environment have on the energy level of the system (Neuman, 1989). When more energy is generated than is spent, the person is moving toward negentropy, or wellness state. When the system generates less energy than is needed, movement of the person is toward entropy, or illness.

**Goal of Nursing**

Neuman believes that the goal of nursing is to facilitate optimal wellness through retention, attainment, or maintenance of client system stability by using primary, secondary, or tertiary prevention. Modes for nursing action would be providing primary prevention in order to prevent reaction to stressors. The interventions in nursing would be directed toward assisting the person to increase the buffer system by strengthening the flexible line of defense and decrease the possibility of a reaction when the stressor is encountered. Secondary prevention is the treatment of symptoms after reactions to stressors have occurred. Finally, tertiary prevention is maintenance of optimal wellness following treatment and is action required to maintain system stability.
Application of Neuman's Model to This Study

Companion animals affect the client system in a variety of areas within the Neuman Model. Pets can affect the basic structure physiologically on a daily basis by reducing blood pressure and improving relaxation. Pets, although they do not speak a verbal language, communicate with their owners and vise versa. It is hypothesized by the researcher that the unconditional love an animal provides positively affects the person's outlook on life, increasing the flexible line of defense and thereby increasing their overall quality of life. Figures 2 and 3, presented on the following two pages, visually depict the study's variables as related to Neuman's Model.

The person's environment that includes a companion animal, can increase the system's resistance to stressors by a variety of ways. Pets have the capability to improve daily relaxation, to provide entertainment and laughter, and encourage daily exercise. For many persons, a pet is a source of constancy and is part of the subconscious "created environment" that can reduce the stress of a new situation.

Loneliness and isolation have detrimental effects on a person's state of wellness and researchers have consistently found that pets can reduce or perhaps eliminate both conditions (Cain, 1991; Francis, 1991; McCulloch, 1981).

Pets can affect a person's personality development, especially in children. This study's sample population does not include children, but it is important in this chapter to mention how pets can affect human development. It is suggested that attachment between a child and a pet begins within the first year of life (Cusack, 1988). This bond over a life-time can favorably influence development of empathy, self-esteem, self-
Stressors
- Identified
- Classified as to knowns or possibilities, i.e.,
  - Loss
  - Pain
  - Sensory deprivation
  - Cultural change

Stressors
- More than one stressor could occur simultaneously
- Same stressors could vary as to impact or reaction.
- Normal defense line varies with age and development

Companion Animal Bond
Increased Resistance to Stressors

Increased Flexible Line of Defense

Increased Quality of Life

The Person/Client System

Figure 2. The Person: As depicted by Betty Neuman (1989) with study variables added.
ENVIRONMENT
Including the Companion-Animal

- Increases Resistance to Stressors
  - Increases Relaxation
  - Provides Laughter & Entertainment
  - Encourages Exercise
  - Provides Constancy
  - Provides Unconditional Love & Companionship
  - Decreases Loneliness
  - Provides Feelings of Security and Protection

- Increases Buffer Effect of the Flexible Line of Defense

- Increases Wellness of the Client System by Positively Affecting one’s Quality of Life.

Figure 3. Conceptual Map Depicting Relationship of Study Variables to Neuman’s Model.
control, and autonomy (Levinson, 1978). In Levinson's article on pets and personality
development (1978), he points out that the growth of personality is continuous. Yet,
there are certain times in the life cycle that certain developmental tasks are salient. In
grappling with these tasks, the individual turns to an animal companion as a resource. Pet
ownership may aid in the development of adaptive personality traits. "Pet ownership may
also contribute to the establishment of a life style which includes nurturance and
companionship with a living creature that can sustain a conviction of life's
worthwhileness even under difficult circumstances" (p. 1033).

Adaptive personality traits in a person predispose stressors to cause less damage
to the client system. The development of adaptive personality traits through pet
ownership can be used as primary prevention. A nurse could recommend "pet therapy" to
help alleviate the effects of detrimental stressors. Also, a nurse should be aware of the
fact that most pet owners view their pets as family members and should be included in
their assessment of the client system and plan of care. Neuman (1989) states the major
concern for nursing is "keeping the client system stable through accuracy in assessment
both of effects and possible effects of environmental stressors and in assisting client
adjustments required for an optimal wellness level" (p. 72).

Propositions

The following propositions or basic assumptions are inherent within the Neuman

1. "Many known, unknown, and universal environmental stressors exist. Each
differs in its potential for disturbing a client's usual stability level, or normal line of defense. The particular interrelationships of client variables—physiological, psychological, sociocultural, developmental, and spiritual—at any point in time can affect the degree to which a client is protected by the flexible line of defense against possible reaction to a single stressor or a combination of stressors” (p. 17).

2. Strengthening the flexible line of defense will decrease the person's reaction to stressors and therefore protect the wellness state.

**Research Questions**

The following research questions have been selected based on the review of literature and conceptual framework.

1. Do pet owners have an improved quality of life as compared to people who do not have pets?
2. Does the level of bonding to a pet influence one's quality of life?
3. Does type of pet (dog or cat) owned affect one's quality of life?
4. Does marital status and the presence or absence of children in the home influence quality of life among pet owners or non-pet owners?
5. Are selected demographics (age, gender, religion, ethnicity, education, income), related to quality of life, and if so, what factor has the most effect on quality of life?
Definition of Major Variables

Theoretical Definitions

The following theoretical definitions are used to convey the conceptual meaning of major variables of the study.

**Quality of Life.** One's perception of life satisfaction, socioeconomic status, physical health, affect, perceived stress, friendship, family, marriage, life goals, housing and neighborhood, city and nation, self-esteem, depression, psychological defense mechanisms, and coping (Ferrans & Powers, 1985).

**Companion Animal Bond.** An attachment that can be interpreted as affectionate, friendly, and companionable; an interaction between a human being and an animal (Messent & Serpell, 1981).

**Pet.** A tame animal kept in home for companionship.

Operational Definitions

The following definition are used in study to operationalize theoretical meanings of variables.

**Quality of Life.** Scores on the Quality of Life Index (Ferrans & Powers, 1984).

**Companion Animal Bonding.** Scores on the Companion Animal Bonding Scale (Poresky, Hendrix, Mosier & Samuelson, 1987).

**Pet.** Dog or cat.
Attribute Variables

The attribute variables of the study are gender, race, marital status, age, education, children, presence of children in the home, employment, income, and importance of religion as included on the demographic form. See Appendix F.

Assumptions of Study

The following are basic assumptions that are inherent to this study.

1. Respondents are truthful in their responses to the questionnaires.
2. Participants have certain beliefs and attitudes concerning their quality of life.
3. An individual's perceived quality of life is an indicator of their overall wellness.
4. Participants have varying degrees of bonding with their pets.
5. Quality of life can be measured by the Quality of Life Index (Ferrans & Powers, 1984).
6. Companion-animal bonding can be measured by the Companion Animal Bonding Scale (Poresky, Hendrix, Mosier & Samuelson, 1987).

Summary

Betty Neuman's Systems Model represents the conceptual framework for this study. The researcher has described the model in order for readers to understand how Neuman's model applies to this study which is the effect of human-animal bonding on quality of life. A conceptual map was also provided for clarity. Included in this chapter are also the researcher's assumptions for the study, research questions and propositions.
CHAPTER 4

METHODOLOGY

In this chapter the mechanics of how this study was conducted is described. The design of the study, population and sample, setting, human subjects rights, data collection, and instruments are explained in detail.

Research Design

A descriptive, correlational design was utilized to address the problem of the study. This design permits an investigation of the quality of life in persons who own pets and those who do not (Burns & Grove, 1993). This design facilitates discovery of many inter-relationships in a situation in a short period of time (Burns & Grove, 1993). This type of study can be used to develop predictive hypotheses for later studies.

Population and Sample

The population considered for this research project consists of adult men and women from church congregations in a Southwestern city who read and speak English. The sample was selected from church congregations due to the potentiality of their parishioners being cross generational, culturally diverse, and from multiple income levels.

This study used a purposeful sample aimed at including a variety of religions,
ethnic groups and income levels from various areas of the city. The procedure of how this was done is explained in the section of data collection procedures.

**Setting**

The researcher used church congregations for the initial contact of her population because it is a place were many people of various income levels, education levels, and age groups gather. The interested church members were handed the questionnaires as they left the church, and filled them out in the privacy of their homes.

**Instruments**

Three instruments were used to collect data in the study: the Demographic Profile, Quality of Life Index (Ferrans & Powers, 1985) and the Companion Animal Bonding Scale (Poresky, Hendrix, Mosier, Samuelson, 1987). All instruments are presented in Appendix F.

**Demographic Profile**

The data and format for questions in the demographic profile were obtained from the book: *Design and Understanding of Survey Questions* (Belson, 1981) and from background literature read by the researcher on what variables can affect the human-animal bond.
Quality of Life Index

Quality of Life Index (Ferrans & Powers, 1985) was designed to measure quality of life of healthy persons, as well as individuals who are experiencing an illness. Quality of Life Index (QLI) takes into account the life domains noted by experts, subjective feelings of satisfaction with domains, and the unique importance of each domain to participant. There are two versions of the Quality of Life Index by Ferrans and Powers. This study used the questionnaire intended for a population of healthy persons.

The instrument consists of two sections. The first section measures satisfaction with various domains of life, and the second section measures the importance of domains to the individual. Both the satisfaction and importance sections use 34 items to assess health care, physical health and functioning, marriage, family, friends, stress, standard of living, occupation, leisure, education, future retirement, peace of mind, personal faith, life goals, personal appearance, self-acceptance, general happiness, and general satisfaction. The authors also added three additional questions related to dialysis treatment for use with dialysis patients. The 34 items can be broken down into four subscales: health and functioning, socioeconomic, psychological/spiritual, and family. In this study the researcher only used the total quality of life score.

Subjects respond to each item on a six-point Likert-type scale ranging from "very satisfied" to "very dissatisfied" for the satisfaction items, and from "very important" to "very unimportant" for the importance items. Eighty-eight graduate nursing students who were involved in research and measurement courses at the University of Illinois examined clarity of wording of the QLI. A convenience sample of thirty-seven dialysis patients

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from the surrounding area also reviewed the questionnaire for clarity. The "confusing" items identified by these groups were reworded.

To determine a participant's quality of life score, "satisfaction" responses were adjusted by considering "importance" responses. The adjusted quality of life score is one's satisfaction with life and how much an individual values each domain or how much importance he/she places on each domain. An accurate reflection of a person's quality of life is obtained when adjustment of satisfaction responses is based on importance. This corrects for the varying influence of individual values.

The satisfaction responses for each item are recoded and multiplied with the importance responses to produce an adjusted score; thus producing highest score for items that have high satisfaction/high importance responses, and the lowest score for high dissatisfaction/high importance responses. Middle-range scores indicated items of low importance (Ferrans & Powers, 1985). Their rationale behind this adjustment was that individuals who are highly satisfied with important areas of life enjoy a better quality of life than those who are very dissatisfied with important areas of life. Raw satisfaction responses are recoded to make zero the midpoint to make this adjustment.

Content validity for the QLI was supported by the review of literature done by Ferrans & Powers on issues related to quality of life and on reports of patients regarding effects of hemodialysis on their quality of life. Over 29 representative studies were included in their content review.

Ferrans & Powers used two steps to assess validity and reliability. They started with a general sample of 88 graduate students and then moved to a more clinically
relevant sample of 37 dialysis patients. The graduate students ages ranged from 23 to 52 years (M=33.1, SD= 6.73). Most of the subjects were Caucasian (95%) and female (97%). QLI was used as a self-reported questionnaire. Ferrans & Powers then used a convenience sample of 37 dialysis patients of which 72% were male, 72% were white, 22% were black, and 5% were Latino. The ages ranged from 24 years to 75 years (M=50, SD= 14.18). QLI was used in an interview format with this group.

To evaluate the criterion-related validity of the QLI, an overall satisfaction with life question was utilized as a criterion measure of quality of life. Campbell, Converse, Rogers (1976) conceptualized satisfaction with life as a cognitive judgement regarding difference between a person’s aspirations and actual life experiences. The correlation between score from the QLI and the question of life satisfaction for the graduate students was 0.75 and for the dialysis patients it was 0.65. A high amount of overlap was demonstrated and this supports the validity of QLI.

Subjects were retested with the QLI after at least a two week break to allow for day-to-day variations. Test-retest correlation of 0.87 was found for the graduate students with a two week interval. QLI was also supported by test-retest correlations from dialysis patients of 0.81 with a one-month interval. Internal consistency reliability of tool was supported by Cronbach’s alphas of 0.93 for the graduate students and 0.90 for dialysis patients.

**Companion-Animal Bonding Scale**

Companion-Animal Bonding Scale (contemporary version) authored by Poresky,
Hendrix, Mosier and Samuelson (1987) was tested on pet-owners. Its purpose was to measure the level of bonding between pet owners and their pets. It was developed from a retrospective childhood Companion Animal Bonding Scale "to provide a sensitive scale for the assessment of self-reported behavior indicative of the establishment of a bond between a person and an animal" (p. 744). The original childhood Companion Animal Bonding scale was an 8-item behavior tool describing the extent of child-animal activities. The contemporary scale used the same 8-items as the childhood scale but replaced the present tense in wording of the questions. The childhood scale used past tense with regard to the animal each participant personally identifies as most important during his childhood (Poresky et. al., 1987).

One hundred twenty one students participated in Poresky et. al., study. The students ranged in age from 14 to 47 years (M=26.4, SD=4.5). Seventy-seven percent of students were college undergraduates, 19.8% were graduate students, and 2.8 % were high school age students. The college students were enrolled in a variety of majors at Kansas State University. The sample consisted of 53 women and 68 men. Ethnic diversity was not included in report.

The total score for scale was obtained by adding item responses with always = 5, generally = 4, often = 3, rarely = 2, and never = 1. In order to test for construct validity, the 8-item questionnaire was given to the students along with the Pet Attitude Scale (Templet, Salter, Dickey, Baldwin & Veleber, 1981). The Pet Attitude Scale (PAS) is an eighteen-item Likert format scale measuring favorableness of attitude toward pets. Three factors associated with attitude toward pets were love and interaction, pets in
home, and joy of pet ownership. The PAS tool was supported as being reliable (internal consistency) with Cronbach's Alpha of .93 and test-retest reliability of .92.

Measures of attitudes towards pets has been associated with pet ownership (Templer, et. al., 1981). Both the Childhood and Contemporary Companion Animal Bonding Scales showed construct validity through their significant correlations of 0.42 (childhood scale) and 0.38 (contemporary scale) with the Pet Attitude Scale.

Reliability analysis of internal reliability of the scale showed a Cronbach alpha of 0.77 for the 8-item childhood scale and 0.82 for the contemporary scale. The strength of scale with regard to childhood and contemporary human-animal relationships is demonstrated by high Cronbach alpha coefficients of the total instruments.

The questions following the Companion-Animal Bonding Scale were derived from the Lexington Pet Attachment Scale authored by Johnson, Garrity & Stallones, 1990. The last question in the Pet Owners Survey, is a series of subjective items in which the pet owner describes how his/her pet has affected him/her. The items included were gathered through various pieces of literature on the human-animal bond.

Data Collection Procedure

The researcher initially contacted the pastors by phone who had congregations in North, Northwest, Northeast, Southwest, and Southeast areas of the city. This procedure was selected in order to achieve a normal distribution of race, education levels, and income levels. If the pastor in the selected area showed an interest in assisting the researcher, the collaboration letter was personally delivered and the research packet...
reviewed with the pastor. When approval by the pastor was granted a specific date and
time was arranged. On the arranged Sunday, the pastor announced that the researcher
would be distributing the research packets at the door, at the end of the service. The
pastors briefly explained the purpose of the study. A written letter of introduction and
explanation of the study was handed with the questionnaire to the participants. Included
in the questionnaire was: a demographic questionnaire, the Companion Animal Bonding
Scale (Poresky, Hendrix, Mosier and Samuelson, 1987) and the Quality of Life Index
(Ferrans & Powers, 1985). Pet owners completed the entire packet, and non-pet owners
were instructed in the questionnaire to stop after completion of the Quality of Life Index.
Also included in each packet was an envelope which was stamped and self-addressed to
the researcher. Data were collected only on days on which church services were held.
The collected questionnaires were stored in a locked drawer in the office of the
researcher.

Human Subjects Rights

The research project was submitted to the Department of Nursing thesis
committee to obtain initial approval. Following committee approval, the research
proposal and questionnaires were evaluated and approved by the Human Subjects Rights
Committees of both the Department of Nursing and the University of Nevada, Las Vegas
Human Subject Rights Review. Consent to participate was voluntary and was implied by
return of the questionnaire. There were no known or anticipated risks involved with
participation, although the nature and content of the questions might have caused slight
anxiety as participants reflected upon the quality of their lives.

Coding of the questionnaires for data analysis and reporting of group data assured participant confidentiality. Subjects' personal identities are unknown and therefore were not revealed in any presentation of the collected data. Approval to conduct the research was obtained prior to initiation of data collection.
CHAPTER FIVE

DATA ANALYSIS

This chapter presents the results of the data collection and addresses the relationship between pet ownership and quality of life. SPSS-PC was used to analyze data employing descriptive statistics, a t-test, Pearson's correlation, chi-square, multiple regression and a correlation matrix. Descriptive statistics identify characteristics of the sample. Results of statistical analysis are reported according to the five research questions which direct the study.

Sample Number

The total sample consisted of adult church members (N = 237) of which 136 were pet owners and 101 were non-pet owners. Data were collected in five churches in selected areas of a southwestern city from January, 1997 to March, 1997. The sample was drawn from two Lutheran churches (n₁ = 35 and n₂ = 51), a Catholic church (n₃ = 80), a Mormon church (n₄ = 18), a Non-Denominational church (n₅ = 39), and a Seventh-Day Adventist church (n₆ = 11). Of 520 questionnaires distributed, 245 were returned to researcher. Of returned questionnaires, eight were not used due to incomplete responses. This represents a return rate of 47 percent.
Demographic Characteristics of Sample

In the following discussion of demographic data, the total sample is described. A comparison of pet owner and non-pet owner demographic data are reported in Tables 1-7.

The age of the sample population ranged from 18 to 77 years of age. The mean was 47.05 years of age, and the median age was 49.0 with a standard deviation of 15.13 years. Participants of the study were predominately female. One hundred sixty-seven were female (70.5%) and 70 (29.5%) were male. Racially, the sample was 78.9% Caucasian, 12.2% African-American, 4.6% Hispanic, 3.0% Asian, and 1.3% were Native American.

(See Tables 1 and 2).

The majority of the population was married (71.3%), with 13.5% single, 8.9% divorced, 3.4% either separated or widowed, and 3.0% were single, but living with a significant other. Recoding of the data revealed that the majority (73.9%) were married or single living with a significant other, while 26.1% of the sample lived alone. The majority of the study population was employed (60.8%), 19.1% were retired, 6.4% unemployed and 13.6% were working as homemakers. (See Tables 2 and 3).

The sample's mode income level was 30-40,000 dollars per year (28.1%). Seven (3.2%) of the sample reported an income of under 10,000 dollars per year. Forty-four (19.9%) reported between 10-29,000 dollars per year and 62 (28.1%) earned between 30-49,000 dollars per year. Forty (18.1%) had an annual income of 50-69,000 dollars. Thirty (13.6%) had an annual income of $70-89,000 and 18 participants (8.1%) had an income of $90-109,000. Nine (4.1%) had an income of $110-129,000, and 11 (5.0%) reported a total family income of over 130,000. (See Table 4).
Among the study population, 85 (35.9%) had completed some college or technical training and fifty-two (21.9%) had completed college. Forty-two (17.7%) completed high school or GED, thirty-three (13.9%) of participants had completed a graduate degree, fifteen or 6.3% had completed some graduate credits, while ten (4.2%) did not complete high school. (See Table 5).

The largest represented religious group was Lutheran (36.8%), followed by Catholic (34.2%), Non-Denominational (16.7%), Mormon (7.6%), and Seventh-Day Adventist (4.7%). Participants were asked to rate the importance of religion in their lives. The majority of the sample (76.4%) labeled ‘importance of religion’ as ‘very important’ (n = 181). Six participants (2.5%) selected ‘hardly important’, thirty-seven (15.6%) selected ‘somewhat important’, and thirteen (5.5%) viewed importance of religion as ‘unimportant’. Religious preference and importance of religion is reported in Table 6.

The majority of the total sample (n = 181) had children (76.4%). Fifty-six (23.6%) participants reported having no children. Out of the 181 participants with children, 82 people (34.6%) reported having children living in the home, while 155 (65.4%) reported having no children living in the home. (See Table 7).

Comparison of Pet Owners and Non-Pet Owner Characteristics

As presented in Tables 1-7, the two groups were similar in age, gender, race, marital status, religious preference, importance of religion and children living in the home.
The mean age of pet owners (N = 136) was 47.2 years, while non-pet owner’s (N = 101) mean age was 46.8. Both groups were predominantly female and married. Racially, the groups looked very similar except the non-pet owners had twice as many African-American/Black participants than the pet owners.

Religious preference between groups was very similar. The majority of pet owners were Catholic (37.8%) or Lutheran (35.6%). The non-pet owners were Lutheran (38.4%) or Catholic (29.3%). Both sample groups rated their importance of religion as ‘very important’. The majority did not have children living in the home.

The two groups were different by income, education and number of children. The pet owner group’s annual household income was higher than the non-pet owner group. The mode salary for pet owners was between 50-60,000 dollars, while for non-pet owners it was between 30-40,000 dollars per year. The mode regarding highest level of education achieved for both pet owners and non-pet owners was ‘some college/technical training’. However, there was a reported higher number of graduate degrees among pet owners, and a slightly higher percentage of non-pet owner participant who did not complete high-school. More pet owners did not have any children (25.7%), as opposed to the largest percentage of non-pet owners having two children (22.8%).

Study Variables

Important variables of this study are Quality of Life, Companion-Animal Bonding, and Type of Pet Owned.
Quality of Life Index (QLI) Scores

QLI total score was computed for each participant. Possible total scores range from 0 to a perfect score of 30. The sample’s range of scores were 5.26 to 29.21. The mean QLI score of the total sample was 21.27. Pet owners had a higher mean (21.49) than non-pet owners (20.98).

Non-pet owners had a higher percentage (3.0%) of low QLI scores than pet owners (.7%). However, non-pet owners also had a slightly higher percentage (28.7%) of high QLI scores than pet owners (23.5%). These scores need to be interpreted with caution due to the small differences in numeric value of each category. The score categories for pet owners and non-pet owners can be seen in Table 8. Cronbach’s alpha for the QLI with this sample was high, .92. Figure 4 presents a visual histogram of the sample’s QLI scores.

Companion-Animal Bonding Scale Scores

Only pet owners gave responses to the Companion Animal Bonding Scale (CABS). The range of possible scores for this scale extends from 8 to 40. The range for this sample was 12 to 40. For descriptive purposes only, the researcher divided the scores into four equal ordinal categories: low bonding (8-15), medium-low bonding (16-23), medium-high bonding (24-31), and high bonding (32-40). Percentage of CABS scores for pet owners in each category are as follows: low (2.9%), medium-low (16.2%), medium-high (29.9%) and high (50%). (See Table 9). For statistical purposes the raw
CAB scores were used. Chronbach alpha for this scale with the sample population was .84. Figure 5 represents a histogram of pet owner's scores on the CABS.

Type of Pet Owned

The majority of pet owners sample owned dogs (57.4%). Thirty-nine (28.7%) participants were cat owners. Some had both a cat and a dog (12.5%) and two (1.5%) participants owned a bird. Due to the low numbers of bird owners and owners who had both a cat and dog, only dog owners and cat owners were included in the analysis of Research Question # 3. (See Table 10)

Research Question Findings

Prior to analysis, an alpha score of .05 level of significance was established. Following are the results of analysis pertaining to each research question.

Research Question # 1

Do pet owners have an improved quality of life as compared to people who do not own pets?

This first question was analyzed using t-test. Quality of life scores for pet owners (N = 135) were compared to the quality of life scores for non-pet owners (N = 101). No significant difference was found. The Mean Difference was 0.5044, and the t-value was 1.20, with a df of 178 (p = .232). The t-test statistic requires equal number of subjects in each independent group. The two group samples were slightly unequal, but not enough
Research Question # 2

Does the level of bonding (attachment) to a pet influence one's quality of life?

This question was analyzed by using pet owners' scores on the Companion Animal Bonding Scale and their corresponding scores on the Quality of Life Index (QLI). The statistical test used to analyze this research question was the Pearson's Product-Moment Correlation Coefficient \( (r) \). The assumptions for Pearson's Correlation were met. The assumptions involved are interval measurement of both variables, at least one variable with normal distribution, independence of observational pairs and reflection of equal variance of both variables (Burns & Grove, 1993). There was a very weak positive correlation between level of bonding and quality of life was indicated among pet owners. Pearson’s product-moment correlation between scores on the Companion Animal Bonding Scale and Quality of Life Index Scores was \( .1762 \) \( (p = .05) \). (See Table 12).

A squaring of the Pearson’s correlation coefficient \( (r^2) \) yields the proportion of variance in QLI scores that can be explained by CAB scores (Babbie, 1995). Therefore, \( r^2 = 3.1\% \), indicating that 3.1% of the variance in the pet owners’ quality of life is accounted for by their bonding with pets. (See Figure 7 in Appendix F)

Research Question # 3

Does type of pet owned, affect one's quality of life?

A chi-square analysis was utilized with a recoded ordinal QLI scale and the
nominal data of cat or dog. Due to the positively skewed QLI scores of pet owners, the 
scores were recoded into lower and higher quality of life. The values were divided in 
this manner to more equally split the data. The ‘lower’ values were derived from the QLI 
scores of 5.26 to 17.23 and the ‘higher’ values were from 17.24 to 29.21. No relationship 
was found between type of pet and quality of life. The coefficient $X^2 = .085$ with df = 1, 
$\rho = .77$. (See Table 13).

Research Question # 4

Does marital status and the presence or absence of children in the home influence 
quality of life among pet owners or non-pet owners?

The simultaneous method of multiple regression analysis was employed using 
QLI scores as the dependent variable. Marital status, presence of children, and pet 
ownership served as the independent variables. Prior to running Multiple Regression, the 
independent variables were coded into dummy variables. There are six assumptions 
regarding multiple regression. First, the dependent and independent variables need to be 
measured without error, and can be treated as interval level data. The residuals should 
not be correlated. The dependent variable scores need to have a normal distribution. 
The scores should be homoscedastic, meaning that there is a normal distribution of $Y$ 
scores at each value of $X$. Lastly, $Y$ scores should have equal variances at each value of 
$X$. This would show that the difference of scores are random and have homogeneous 
variance.

In this sample, the variables were measured without error, treated as interval level
data and the dependent variable (QLI) showed a fairly normal distribution. (See Figure 4).

To weigh the importance which each of the variables contribute, the absolute values of their beta coefficients are examined. The greater a variable’s beta coefficient, the greater weight it carries in explaining the variation of the dependent variable (Babbie, 1995). By this criterion, presence of children in the home (beta = -.203) is the most important variable associated with scores on the Quality of Life Index. The other variables are less important, the next largest beta being marital status (beta = -.099). Lastly the least important variable was pet ownership (beta = -.081). The variables taken together explain only five percent of the variance in quality of life. The F value was 4.23, (p = .006). Although these variables predict a small amount of variance they proved to be statistically significant predictors of quality of life. Table 14 presents the results of simultaneous multiple regression.

Research Question # 5

Are selected demographics (age, gender, education, income, ethnicity, importance of religion) related to quality of life?

A correlation matrix was used to explore this research question. The researcher selected participants’ view on importance of religion instead of their religious preference. Although a participant may claim a religious preference, religion may not affect their life if he/she views religious practices as unimportant. The purpose of using a correlation matrix is to explain as much of the variance in the value of the dependent variable (quality of life) as possible (Burns & Grove, 1993).
All selected demographics proved to have insignificant impact on quality of life except for age. Age showed a weak (+.24) correlation with quality of life (p = .05). (See Table 15).

Ways in Which Pets Influence/Affect Their Owners

Pet owners completed the Companion Animal Bonding Scale along with three other questions. The first question was: In what way(s) do you feel that your pet changes or influences your life? The participants were instructed to circle any of the 14 items which applied.

The five items most frequently selected by participants were ‘increased laughter in household (83.2%), followed by ‘provided a sense of relation’ (75%), ‘decreased loneliness’ (58.1%), ‘increased physical activity (57.4%), and ‘taught more responsibility to self/children’(47.1%). See Table 16 for percentages of the remaining items.

The second question which pet owners were requested to answer was whether they felt having a pet improved their quality of life. Of 136 pet owners, 90.3% stated that yes, having a pet has improved their quality of life, and 8.2% responded negatively. Although response of ‘slightly’ was not an option on the questionnaire, 1.5% entered that response. Only two pet owners did not respond.

The last question posed to pet owners was to explain their answer of how/why their pet improves their quality of life. This response was in narrative form and participants were given adequate space to write approximately a paragraph. The comments were grouped into major themes. The strongest supported theme was that pets
provide unconditional love and companionship.

The following are selected examples of comments from pet owner participants.

"No matter how bad some days seem, she always makes me smile and be thankful for her and all my other blessings. She makes me feel so full of love." "Our cat provides positive companionship and helps us appreciate 'little things in life'. We often become disillusioned with hectic pace and harried drivers, for example. Gus's innocence is refreshing." "Unconditional love—a responsibility, but one that is gladly undertaken—fills a corner of our life—accepts us with all of our 'warts'."

The next strongest supported theme was similar to first, but reflected emotional and social support. Social support is demonstrated by following three participants' comments. "Pets are God-sent. Takes your worries away. When our youngest went away to college, her cat went along. She said it was like being home. Brought her much comfort." "When things aren't going well, dog or cat comes up and wants to be petted. They show immediate appreciation by kissing you and wagging their tail. It always brings a smile to my face and warmth to my heart. I feel loved, needed and appreciated. Important to someone." "She is a happy dog. Always by me when I am home. If I cough, or sneeze, she jumps up immediately to see if I am OK. She is the best thing for me. Enclosed is her picture." "My son had a car accident two years ago and still in therapy for ataxia. His pet is very important to him for lots of reasons: as a care giver, trainer, and a friend."

A large number of pet owners explained that the reason they feel their quality of life is improved having a pet was because that pet provides an outlet for the emotion of
laughter and entertainment, almost on a daily basis. “Boomer keeps everyone in the family on their toes because he’s always stealing someone’s sock or stuffed animal. He is really cute when he pretends he’s not begging at the dinner table and looks so goofy he makes everyone laugh.” Another participant had a dog and parrot and commented on the parrot: “She talks saying things like ‘I’m a Mormon’, ‘I love you’, ‘Come here’. She laughs, sings, and whistles, bringing laughter to all those who come near. When my two year old cries, the parrot mimics her, bringing a smile to myself and my child.” Another comment regarding increased laughter was: “They both bring laughter and happiness to me and my partners life. They never cease to amaze and amuse us with their unique personalities.”

A lesser theme arose indicating that pets encourage an increase in physical activity. A 73 year old man writes, “She keeps me active because she needs someone to play ball with.” Another 68 year old comments, “When I feed my dog in the morning it signals my healthy activities for the day.”

Security and Protection was a theme mentioned frequently in this section of survey. “I like to know that the house is not empty when I come home. He makes us all feel safer. He is a good watchdog. He’s thrilled when each family member comes home. This theme is usually intermixed with other themes already mentioned. For example, “Dogs are a man’s best friend-- It’s not only that. Besides being a companion, he can be considered a member of family. They protect you from burglars and they are the most effective alarm system you’ll ever have.”

Not all of the comments were positive in this section. Of those 11 people who did
not feel that pets improved their quality of life, some gave an explanation of why: “I only
tolerate the two cats because of love I have for my daughter and my husband! I do not
like animals inside of house. My daughter lives in Florida and I have to take care of cats
for her.” “The dog belongs to my 22 year old daughter and she has never taken
responsibility of the care of the dog over the past ten years. I feel trapped because I’m
forced to take care of the animal.” Another wrote, “Too much responsibility at this time.”
This group of participants was definitely in the minority.

Summary of Results

This chapter presented the analysis of the data that examined the characteristics of
sample of pet owners and non-pet owners, and the effect that pets have on quality of life.

The sample of 237 can be described as predominately middle-aged ($\bar{x} = 47$ years),
Caucasian females who were married with an annual household income between 30-
40,000 dollars. The sample characteristically was either Lutheran or Catholic, had
completed some college or technical training, and had children who were not presently
living in the home.

Demographic variables of pet owners and non-pet owners were similar in age,
gender, recoded marital status, religious preference, importance of religion, and presence
of children in home. The demographic variables were different by income, education
and number of children. The salary for pet owners was higher than the non-pet owner
group. A greater number of pet owners did not have children when compared with non-
pet owners.
Quantitatively, results of the t-test indicated that there was no significant difference in the quality of life scores between pet owners and non-pet owners ($p = .232$). Yet on a qualitative level, pet owners (90.3%), felt that their pet did affect their quality of life.

The level of bonding between pet owners and their pets demonstrated a very weak positive correlation (.176) ($p = .05$) with quality of life scores. The type of pet (dog or cat) was not significantly correlated with QLI scores ($X^2 = .085$, $p = .77$).

In studying whether marital status, presence of children, and pet ownership affect quality of life, results of multiple regression indicated that children in the home was the most significant variable (-.203) ($p = .00$) associated with QLI scores. The combined variables only explain 5% of variance in quality of life ($p = .006$).

In analyzing which variables could have an effect on quality of life, age was the only variable which was statistically significant. However, the age of a participant was a weak positive predictor $r = (.221)$ of quality of life.

Qualitatively, five major themes were represented. The largest supported theme was that pets provide unconditional love and companionship, followed by emotional and social support, increased laughter and entertainment, increased physical activity and lastly, a feeling of security and protection.
CHAPTER SIX

DISCUSSION

Summary of Study

The purpose of the study was to determine whether pets have a positive impact on the lives of their owners by improving their quality of life. In addition, the study examined the relationship between pet bonding, selected demographic variables, and quality of life among pet owners and non-pet owners. Demographics included were age, gender, ethnicity, marital status, education, income, number of children, and religious preference. Betty Neuman’s System Model (1989) provided the conceptual framework for this study.

The subjects consisted of 136 adult pet owners and 101 adult non-pet owners from selected church congregations in a Southwestern state. By use of purposeful sampling, data from English speaking pet owners and non-pet owners were collected by way of questionnaires distributed to parishioners after church services. The pet owner group completed two questionnaires in the privacy of their home: the Companion Animal Bonding Scale and the Quality of Life Index (QLI). The non-pet owner group completed only the QLI.

Data analysis consisted of ascertaining the statistical means of the QLI responses of pet owners and non-pet owners. To compare the means of each group, a t-test was done to determine significant differences in the groups’ responses. Correlation studies
were done to determine if any significant correlation existed between bonding scores, demographic variables, and quality of life. Chi-square analysis aimed to determine if a relationship existed between type of pet owned (dog or cat) and quality of life. Finally, a simultaneous multiple regression analysis was utilized to investigate if marital status, presence of children in the home, or pet ownership could explain any variance in quality of life.

Pet owners completed a section of the questionnaire that included selecting items which described how their pet affected their life, and if they felt the pet improved their quality of life. In addition, they provided an explanation of why their pet did, or did not, improve their quality of life in a paragraph or less. Themes were then derived from those explanations.

To summarize the results quantitatively, the pet owners and non-pet owners did not have significant differences in quality of life as measured by total scores on the QLI. There was no difference in quality of life between cat owners and dog owners and level of bonding was weakly correlated with scores on the QLI.

Age was the only demographic variable demonstrating any correlation with quality of life, but the correlation was weak. Multiple regression results indicated that marital status, presence of children in the home, and pet ownership explained only five percent of the variance in quality of life, but presence of children in the home was statistically significant in explaining variance in QLI scores.
Discussion of Findings

Conceptual Framework

The major concepts in Neuman’s model are client, variables, environment, stressors, wellness, and nursing intervention (Reed, 1993). In her model, the client system is depicted as having a basic structure or core which is surrounded by a series of concentric circles which form the basis of resource protection for the core of the system. The outer ring or circle is known as the flexible line of defense which functions to protect the usual state of wellness of a person (Neuman, 1989).

It was hypothesized by the researcher that the unconditional love a pet provides positively affects the person’s outlook on life, increasing their flexible line of defense and therefore improving the overall quality of life. Pets have the potential to promote daily relaxation, provide entertainment and laughter, and encourage daily exercise. Therefore, it was predicted that if a person’s environment included a pet, the client system’s resistance to stressors would be strengthened.

According to the qualitative results of the study, the companion animal added to the quality of the pet owner’s life. By providing a source of unconditional love and companionship, social and emotional support, laughter and entertainment, increased physical activity, security and protection, and relaxation. The pets did appear to strengthen the line of defense. Therefore, the conceptual model was supported in this study.
Representativeness of Sample

The sample of church members, although not randomly selected, was demographically similar to the population of the Southwestern county from which the sample was drawn. Therefore, it was likely that the results of the study were representative of that Southwestern county. The researcher included potential variations in income, ethnicity and educational level by selecting churches in different areas of the city. Minor differences between population and sample were related to age, ethnicity, employment, and education.

The sample, as a whole, was older than the county population. Twenty-four percent of people surveyed in the county during the last census were over the age of 50; twice as many of the sample participants were over 50. As reported in the 1990 census, ethnic composition of the population in the county was as follows: 75.4% of the population was Caucasian, 11.2% was of Hispanic origin, 9.3% African-American, 3.3% Asian, and 0.7% American Indian. Hispanics were under-represented in the study sample. Seventy percent of the county population was in the labor force and 30% was not. Of the sample population 60.9% were employed and 39.1% were not. The residents of the county were also somewhat less educated than the sample as a whole. Twenty-two percent of the county population did not complete high school as compared to 4.2% of the study sample. The study sample had a little over twice as many residents with graduate degrees as the county population.

A study done in the Netherlands by Endenburg, Hart, and de Vries (1990) found that companion-animal owners differed significantly from non-animal owners in marital
status, type of dwelling, income, age, presence of children, and educational level. In the present study, the two groups differed only in income, number of children, and slightly in ethnicity.

**Quality of Life**

Quality of life as measured by the QLI was not statistically different between pet owners and non-pet owners. Albeit, the mean QLI scores were higher in the pet owner group. Ninety percent of pet owners documented that their pet improved their quality of life. Many of the pet owners who felt otherwise, were not pet owners by choice. Tartar, Erb, Biller, Switala and Van Thiel (1988) conceptualized quality of life as “a multi-faceted construct that encompasses the individual’s behavioral and cognitive capacities, emotional well-being, and abilities requiring performance of domestic, vocational, and social roles” (p.208). Pet ownership may affect a piece of the construct of quality of life effectively yet not have enough impact to change one’s quality of life in its entirety.

Holism is defined by Dossey and Keegan (1988) as a “view that an integrated whole has a reality independent of and greater than the sum of its parts” (p. 4). Pet owners may not be separating the part of their life affected by pet ownership from their “whole” quality of life.

To the researcher’s knowledge the QLI has not been used in past research in the same context as in this study. Perhaps the QLI did not measure the intent of the research question. The researcher looked at the total QLI scores instead of looking at its subscales. The subscales of the instrument are health and functioning, socioeconomic, psychological
and spiritual, and family. Perhaps pets only influence a few of the subscales. Pets may influence the health and functioning subscale, the psychological and spiritual subscale, and the family subscale, but not enough to make a difference in the total QLI score.

Rogers, Hart, and Boltz (1993) did not use the QLI, but they did find that dog owners exercised more and were more satisfied with their social, physical, and emotional states. Although the quantitative data did not show differences in quality of life, qualitative data strongly supported the positive effect of pets on their owners. Having a companion animal appeared to add to the joy and happiness of a person’s life as evidenced by the vast majority of positive and heartfelt written comments by the participants of this study. Bryant (1990), Calvert (1989), and Rossbach and Wilson (1992) all supported the feeling that animal interactions tend to make people happier, more relaxed, more secure, more affectionate, more alert, and less lonely.

It is important to note that religion can be a source of social and emotional support for some people. In comparing this sample’s mean total QLI score 21.3 (± 3.07) with other studies, this research sample had a lower mean. In a study done by Dunn et. al, 1994, the mean QLI score of spouses of patients who were undergoing continuous ambulatory peritoneal dialysis (CAPD) was 21.99 (± 3.65). The CAPD patients of the study had a mean QLI score of 22.67 (± 4.01). Another study investigated the impact of percutaneous transluminal coronary angioplasty (PTCA) on perceived quality of life and health related quality of life. The researchers found that before PTCA the mean QLI score was 20.32 (±3.36) but after the mean was 22.87 (± 4.69).

The researcher was surprised to find the sample’s mean scores to be slightly lower
than those of the studies mentioned and no explanation was formulated.

**Companion Animal Bonding**

The relationship of attachment to companion animals and health may parallel that of human support and health (Stallones, Johnson, Garrity, Marx, 1990). Since health is an important aspect of quality of life, it is important to measure participants attachment to their pets. Elderly pet owners who were attached to their pets were found to experience better morale than pet owners who were less attached (Ory & Goldberg, 1983). In 1990 national survey data was obtained by Stallones, Marx, Garrity, and Johnson who investigated the relationship of pet ownership and attachment to self-reported illness behavior and emotional distress in adults. No significant associations were found between pet ownership and attachment to pets and the illness behavior scores by the researchers. In this study scores on the Companion Animal Bonding Scale were not significantly correlated with QLI scores. There may have been instances where the person most attached to the pet did not fill out the questionnaire (as evidenced by some of the negatively written comments), but it is doubtful that would have changed the results of this study.

Some researchers have found differences in affectionate behavior of dog and cat owners. Miller and Lago (1990) found that cat owners told more stories about their pets than dog owners told. Dogs appeared to insert themselves more directly into social situations, while cats were more aloof and were involved more indirectly. In this study there were no differences between the quality of life of cat owners or dog owners.
Although it is the researcher's belief that people have a definite preference for dogs or cats, the level of bonding toward the pet is similar. Affectionate descriptions were equally represented in the qualitative section of the survey by cat owners and dog owners. Many of the subjects showed no species preference and owned both a cat and a dog.

Effect of Marital Status, Presence of Children, and Pet Ownership on QLI

Does marital status and the presence or absence of children in the home influence quality of life among pet owners or non-pet owners? A simultaneous multiple regression analysis revealed a relationship, but only five percent of variance in quality of life was explained by these three variables.

Perhaps in this sample those who lived alone but had a companion animal did not feel so alone due to the companionship the pet provided, and therefore rated their quality of life slightly higher on the scale. There is also a possibility that those people who had pets and children were more satisfied with their lives because the children were more content and entertained by having a pet. Therefore, the parents were more relaxed and content. Horn and Meer (1984) reported that approximately 90% of the respondents of their survey felt pets were important for children. Empirical support for the effects of pet ownership on adolescents' interpersonal trust and empathy was reported by Hyde, Kurdek, and Larson (1983).
Limitations of Study

The results of this study may not be generalizable to the U. S. population due to the fact that data was only collected in one Southwestern city. Although the sampling method for obtaining the participants from churches was not random, the sample included various socioeconomic groups from various parts of the city. The sample of pet owners may have been contaminated due to the people who were not pet owners by choice, but because they felt obligated to care for the pet for a family member.

The selected religious population may have had an increased overall quality of life as compared to the general population and therefore the support which a pet may have provide is superseded by the support they received from their religious affiliation. Only four religions were represented in this sample, all having a Christian belief base. People of non-Christian religions such as Buddhists, Hindus, Muslims, and Jews were not represented in the sample.

Although the instrument used to measure quality of life was valid, it may not have been sensitive enough to measure the perceived beneficial effects of pet ownership on life satisfaction.

Conclusions

Through consideration of the findings and of the study limitations, the following conclusions are evident:

1. The results of the study can be generalized to those religious groups studied in this sample. Although the sample was similar to that of the Southwestern county, it may
be inaccurate to generalize these findings to the general population.

2. In this sample the mean QLI scores were higher in the pet owner group but not statistically significant.

3. In this sample marital status, presence of children in the home, and pet ownership explained five percent of the variance in quality of life.

4. While analyzing the written comments by pet owners on how their pets affect quality of life, five themes were derived. The themes were companionship and unconditional love, social and emotional support, increased laughter in the household, increased physical activity, and an increased sense of security and protection.

**Implications for Nursing**

A paucity of research exists which examines the relationship between quality of life and pet ownership. Part of the significance of this study is to add to that body of knowledge. It is evidenced by the qualitative part of this research that pets do affect the lives of their owners in a positive way. Ideally, the foremost goal of health care professionals should be finding ways to improve a patient's quality of life. The health care profession would benefit from information which maintains or enhances quality of life for individuals and families (Davis, 1991). The increasing therapeutic evidence of animals in different settings, including having pets in the home, may improve one's quality of life for reasons such as the unconditional and indiscriminate love which companion-animals provide. Since many pet owners felt that their lives were improved by pet ownership, then health care providers could begin to rely on new avenues of
treatment which might include a recommendation of owning a pet.

Nursing science has focused on the expansion of relationships between persons, their families and their environments relative to health and illness (Marchione, 1986). Cousins (1979), in his book *Anatomy of an Illness*, discussed how he used laughter to reduce physical pain and discomfort. Many researchers have reported that laughter and humor can serve to ameliorate depression (Nezu, Nezu & Blissett, 1988), reduce pain (Adams and McGuire, 1986) and positively enhance immune system functioning (Dillon, Minchoff, and Baker, 1985). Martin, Kuiper, Olinger and Dance (1993) concluded that humor, in addition to buffering the effects of stress, may also play an important role in enhancing enjoyment of positive life experiences. Humor may increase the buffer zone of a client system’s line of defense, further protecting the core against illness. If pets on an almost daily basis provide laughter and entertainment (as the qualitative data suggests), then it stands to reason that companion animals may add to the health and wellness of the owner.

A nursing assessment should include all members of a family. Because pet ownership affects an entire family it also should be assessed. Since many people across the United States consider their pet to be a member of the family (Cain, 1985, Cain, 1991; Soares, 1985; Brickel, 1985), it is important to understand how the pet impacts each member of household. When a pet becomes part of a family, family members tend to react to the pet in the same way they would react to a human. For example, death of a pet may result in deep and prolonged grief by individuals or family members. All of these situations which arise from pet ownership should be understood and acknowledged by
health care providers. A better understanding of the companion-animal relationship has the potential of improving patient treatment outcomes and overall quality of life for pet owners.

Recommendations for Further Research

A number of recommendations may be made following review of this research study:

1. The study could be replicated using a larger sample with another “general population” in hopes of obtaining a greater number and variety of demographic variables. The setting could be changed to a place where everyone is required to go such as the Department of Motor Vehicles.

2. An instrument which captures happiness and/or humor and laughter such as Revised Questionnaire on the Sense of Humor may be appropriate to use with this study population. One could also choose another variable in place of quality of life such as self actualization or other emotional qualities.

3. For more in-depth evaluation of quality of life and pets one could use subscales of the QLI instrument. Another study could compare QLI scores of pet owners and non-pet owners with the Life Attitude Profile (LAPS). LAPS is an instrument consisting of six dimensions: purpose, coherence, life control, death acceptance, existential vacuum, and goal seeking.

4. Cultural differences were not evaluated which could have a large impact on how animals are viewed. Some cultures view dogs and cats as street animals which
should not enter home. A transcultural study using Leininger’s theory would bring to light cultural differences in quality of life and importance of pets.

5. Health status should be included in studying quality of life. Chronic disease states could have an effect on quality of life despite an animal in the home. A study testing Neuman Systems Theory in more depth than was done in this study would perhaps identify more areas in the client system where a pet affects the lines of defense and lines of resistance positively or negatively.

6. Although we all have life in common, we all experience it differently. In order to fully understand the essence of the companion-animal bond and its effect on a person’s life, a purely qualitative study is recommended for comparison of pet owners’ and non-pet owners’ lives.
REFERENCES


APPENDIX A

University of Nevada, Las Vegas
Department of Nursing
Human Subjects Rights Committee
Approval Letters
06 December 1996

Johanna Barham, RN, BSN
7633 Sea Cliff Way
Las Vegas NV 89128

Dear Ms. Barham:

The Department of Nursing Human Subjects Rights Committee met and approved your proposal "The effect of human-companion animal bonding on quality of life". You may now take your proposal to the University Office of Sponsored Programs for their consideration. We suggest you request an exempt status for your project.

You have a study that should result in useful information for nursing. The Committee wishes you well in completing it. If any of the above is not clear or you wish to discuss any of the points please do not hesitate to call myself or any of the other committee members.

We wish you well in completing your study and are looking forward to hearing about your findings.

If you make any major change in your project please notify the Committee.

Sincerely,

[Signature]

Margaret Louis, RN PhD
Chairperson
Human Subjects Rights Committee
Department of Nursing, UNLV

CC: Susan Kowalski, Ph.D.
UNIVERSITY OF NEVADA, LAS VEGAS  
DEPARTMENT OF NURSING  

PROTOCOL FORM APPROVAL SHEET  
FOR RESEARCH INVOLVING HUMAN SUBJECTS

Log Number: ________________

Title of Project: The effect of human-companion animal bonding on quality of life.

Investigator: Johanna Barham and Susan Kowalski, PhD

After reviewing this proposal, the members of the Department of Nursing, Human Subjects Rights Review Committee have indicated below their approval/disapproval of this proposal.

<table>
<thead>
<tr>
<th>Signature of Committee Members</th>
<th>Approve</th>
<th>Disapprove</th>
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</table>

The above named project is hereby approved/disapproved (circle one).

Date: 12/7/96  

Committee Chairperson's Signature
DATE: December 10, 1996

TO: Johanna Barham (NUR)
M/S 3018

FROM: William E. Schulze, Director
Office of Sponsored Programs (X1357)

RE: Status of Human Subject Protocol Entitled:
"The Effect of Human-Companion Animal Bonding on
Quality of Life"

OSP #501s1296-150e

The protocol for the project referenced above has been reviewed by the Office of Sponsored Programs and it has been determined that it meets the criteria for exemption from full review by the UNLV human subjects Institutional Review Board. This protocol is approved for a period of one year from the date of this notification and work on the project may proceed.

Should the use of human subjects described in this protocol continue beyond a year from the date of this notification, it will be necessary to request an extension.

cc: S. Kowalski (NUR)
OSP File
APPENDIX C

Pastoral Collaboration Letters
December 18, 1996

Bishop Ferril Barney
3025 West Sahara
Las Vegas, Nevada 89102

Dear Bishop Barney,

I am preparing my Master's Thesis in the Graduate College of Nursing at the University of Nevada, Las Vegas. My thesis studies the concept of quality of life in relation to pet ownership.

I am seeking your collaboration to access members of your church congregation. If possible, I would like to hand out questionnaires to both pet owners and non-pet owners after church services.

Participants will be given a cover sheet which explains the purpose of the research. They will also be given questionnaires exploring one's quality of life and the effect of pets on their owners.

Participation in this study is entirely voluntary and will not cost them anything but a little time. In addition, all returned questionnaire will be anonymous and maintained in a secure area at the University of Nevada, Las Vegas.

A summary of the final results of this study will be made readily available to you and interested members of the ward. Additionally, your assistance will be acknowledged in the written publication.

Your signature on this form represents your consent and desire to collaborate on this project.

Respectfully,

[Signature]

Johnna B. Hanson, R.N.

[Signature]
Bishop Ferril Barney

Date 12-22-96
December 28, 1996

Pastor Jerome McWaters
Summerlin Lutheran Church
1911 Pueblo Vista Drive
Las Vegas, NV 89128

Dear Pastor McWaters,

I am preparing my Master's Thesis in the Department of Nursing, College of Health Sciences at the University of Nevada, Las Vegas. My thesis studies the concept of quality of life in relation to pet ownership.

I am seeking your cooperation to approach members of your church congregation to participate in my research. As part of my study, I would like to distribute questionnaires to interested congregation members. They will be given a cover sheet which explains purpose of the research along with questionnaires exploring one's quality of life and effect of pets on their owners.

Participation in this study is entirely voluntary and will only take a few minutes. In addition, all returned questionnaire will be anonymous and maintained in a secure area at University of Nevada, Las Vegas.

A summary of the final results of this study will be made readily available to you and church members. I wish to thank you for your assistance in this study and wish to, with your permission, acknowledge your church and your assistance in the written publication.

Your signature on this form represents your consent and desire to collaborate on this project.

Respectfully,

Johanna B. Hanson, R.N.

Date Dec 28, 1997
January 14, 1997

Father James F. Crilly  
Guardian Angel Cathedral  
302 Cathedral Way  
Las Vegas, Nevada 89109  

Dear Father Crilly,

I am preparing my Master's Thesis in the Department of Nursing, College of Health Sciences at the University of Nevada, Las Vegas. My thesis studies the concept of quality of life in relation to pet ownership.

I am seeking your cooperation to approach members of your church congregation to participate in my research. As part of my study, I would like to distribute questionnaires to interested congregation members. They will be given a cover sheet which explains the purpose of the research along with questionnaires exploring one's quality of life and the effect of pets on their owners.

Participation in this study is entirely voluntary and will only take a few minutes. In addition, all returned questionnaire will be anonymous and maintained in a secure area at the University of Nevada, Las Vegas.

A summary of the final results of this study will be made readily available to you and the church members. I wish to thank you for your assistance in this study and wish to, with your permission, acknowledge your church and your assistance in the written publication.

Your signature on this form represents your consent and desire to collaborate on this project.

Respectfully,

[Signature]

[Signature]

Johanna B. Hanson, R.N.  

[Signature]

Father James F. Crilly  

Date 1-14-97

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February 14, 1997

Green Valley Lutheran Church
1799 Wigwam Parkway
Henderson, Nevada 89014

Dear Pastor Pieper,

I am preparing my Master's Thesis in the Department of Nursing, College of Health Sciences at the University of Nevada, Las Vegas. My thesis studies the concept of quality of life in relation to pet ownership.

I am seeking your cooperation to approach members of your church congregation to participate in my research. As part of my study, I would like to distribute questionnaires to interested congregation members. They will be given a cover sheet which explains the purpose of the research along with questionnaires exploring one's quality of life and the effect of pets on their owners.

Participation in this study is entirely voluntary and will only take a few minutes. In addition, all returned questionnaires will be anonymous and maintained in a secure area at the University of Nevada, Las Vegas.

A summary of the final results of this study will be made readily available to you and the church members. I wish to thank you for your assistance in this study and wish to, with your permission, acknowledge your church and your assistance in the written publication.

Your signature on this form represents your consent and desire to collaborate on this project.

Respectfully,

Johanna B. Hanson, R.N.

[Signature]

Pastor Don Pieper

Date 14 Feb 1997
February 20, 1997

Pastor Andy
Word of Life Christian Center
3520 N. Buffalo Drive
Las Vegas, Nevada 89129

Dear Pastor Andy,

I am preparing my Master's Thesis in the Department of Nursing, College of Health Sciences at the University of Nevada, Las Vegas. My thesis studies the concept of quality of life in relation to pet ownership.

I am seeking your cooperation to approach members of your church congregation to participate in my research. As part of my study, I would like to distribute questionnaires to interested congregation members. They will be given a cover sheet which explains the purpose of the research along with questionnaires exploring one's quality of life and the effect of pets on their owners.

Participation in this study is entirely voluntary and will only take a few minutes. In addition, all returned questionnaire will be anonymous and maintained in a secure area at the University of Nevada, Las Vegas.

A summary of the final results of this study will be made readily available to you and the church members. I wish to thank you for your assistance in this study and wish to, with your permission, acknowledge your church and your assistance in the written publication.

Your signature on this form represents your consent and desire to collaborate on this project.

Respectfully,

Johanna B. Hanson, R.N.

Date Feb 20, 1997

Pastor Andy

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February 25, 1997

Mt. View Seventh-Day Adventist Church
6001 West Oakey
Las Vegas, Nevada 89102

Dear Pastor Gemell,

I am preparing my Master's Thesis in the Department of Nursing, College of Health Sciences at the University of Nevada, Las Vegas. My thesis studies the concept of quality of life in relation to pet ownership.

I am seeking your cooperation to approach members of your church congregation to participate in my research. As part of my study, I would like to distribute questionnaires to interested congregation members. They will be given a cover sheet which explains the purpose of the research along with questionnaires exploring one's quality of life and the effect of pets on their owners.

Participation in this study is entirely voluntary and will only take a few minutes. In addition, all returned questionnaires will be anonymous and maintained in a secure area at the University of Nevada, Las Vegas.

A summary of the final results of this study will be made readily available to you and the church members. I wish to thank you for your assistance in this study and wish to, with your permission, acknowledge your church and your assistance in the written publication.

Your signature on this form represents your consent and desire to collaborate on this project.

Respectfully,

Johanna B. Hanson, R.N.

[Signature]

Pastor David Gemell

[Signature]

Date 25 Feb 1997
Consent To Participate In a Research Study

University Of Nevada, Las Vegas

December 30, 1996

Dear Church Member,

I am a graduate nursing student at the University of Nevada at Las Vegas, studying attitudes about life and pets. (You do not have to own a pet to participate in this study.) The attached questionnaires are designed to provide such information.

The purpose of this study is to investigate attitudes which people have about their lives. Because so many people own pets, attitudes which pet owners have toward their pets are also being studied.

Your answers on the questionnaire will go into a large pool of data and will remain confidential. Please do not place your name on the questionnaire. Your privacy will be maintained, and I hope that you will feel comfortable answering truthfully.

The questionnaires should only take about 15 minutes to complete. There are no right or wrong answers. No money is required to send back the questionnaire. When you are finished filling it out simply fold it, place it in the postage paid envelope, and drop it in mail.

If you have any questions about this study, you may call researcher at Department of Nursing, at 895-3360. If you have any questions regarding your rights as a participant in this study, you may contact UNLV Office of Sponsored Programs at 895-1357. The return of the questionnaires will imply your consent to participate in this research project.

Upon completion of the study, the results will be available to you through your pastor. Your participation is extremely important to me, and will be very much appreciated.

Sincerely,

Johanna B. Hanson, R.N.
Graduate Student
Department of Nursing
APPENDIX E

Instrument Consent Letters

95
July 11, 1996

Ms. Johanna Barhan
7633 Sea Cliff Way
Las Vegas, Nevada 89128

Dear Ms. Barhan:

Thank you for your interest in the Ferrans and Powers Quality of Life Index (QLI). I have enclosed the generic version of the QLI and the computer program for calculating scores. I also have included a list of the weighted items that are used for each of four subscales: health and functioning, social and economic, psychological/spiritual, and family. As well as the computer commands used to calculate the subscale scores. The same steps are used to calculate the subscale scores and overall score.

At the present time there is no charge for use of the QLI. You have my permission to use the QLI for your study. In return, I ask that you send me a photocopy of any publications of your findings using the QLI. I then will add your publication(s) to the list that I send out to persons who request permission to use the QLI.

If I can be of further assistance, please do not hesitate to contact me. I wish you much success with your research.

Sincerely,

Carol Ewing Ferrans, PhD, RN, FAAN
Assistant Professor
Permission to Use Copyrighted Material

I, Robert H. Poresky

holder of copyright on material entitled Companion Animal Bonding Scale

-authored by Robert H. Poresky, Charles Hendrix, Jacob E. Mosier and Marvin L. Samuelson

and originally published in Psychological Reports, 1987

hereby give permission for the author to use the above described material in total for inclusion in a master's thesis at the University of Nevada, Las Vegas.

I also agree that the author may execute the standard contract with University Microfilms, Inc. for microform reproduction of the completed thesis including the material to which I hold copyright.

[Signature]

Date 4/29/96

Dr. Robert H. Poresky

Name

Title

Not: Psychologcal Report may also hold copyright on the scale.
APPENDIX F

Instruments
DEMOGRAPHIC INFORMATION

1. Your gender. (Circle number of your answer)
   1. Male
   2. Female

2. Your present marital status. (Circle number)
   1. Single
   2. Married
   3. Divorced
   4. Separated
   5. Widowed
   6. Single, living with significant other

3. Your present age: _______ years.

4. Which of following best describes your racial or ethnic identification?
   1. White/Caucasian
   2. Black/Afro-American
   3. Asian
   4. Hispanic
   5. Native American
   6. Other (specify)_____________________________

5. What was highest level of education you completed?
   1. Did not complete High School
   2. Completed High School or GED
   3. Some College or Technical training
   4. Completed College (Specify Degree)___________
   5. Some Graduate Work
   6. A Graduate Degree
      (Specify Degree)____________________________
6. Number of children you have in each age group.
   Number of children
   ________ No children
   ________ Under 5 years of age
   ________ 5 to 13 years of age
   ________ 14 to 18 years of age
   ________ 19 to 24 years of age
   ________ 25 years and over

7. You are presently: (Circle number)
   1. Employed
   2. Unemployed
   3. Retired
   4. Full-Time Homemaker

8. Please describe usual occupation of principal wage earner in your household.
   (If retired, describe usual occupation before retirement)

   Title:______________________________

   Kind of Work You Do______________________________

9. Total family income before taxes. (Circle number)
   1. Under $10,000
   2. $10-$19,999
   3. $20-$29,999
   4. $30-$39,999
   5. $40-$49,999
   6. $50-$59,999
   7. $60-$69,999
   8. Over $70,000

10. What is your religious preference? (Circle number)
    1. Protestant (Specify Denomination)______________________________
    2. Jewish
    3. Catholic
    4. Mormon
    5. Other...(Specify)______________________________
    6. None
11. Do you attend church on a weekly/monthly basis? (Circle answer)

1. Yes
2. No

12. How important, at this time, is your religion in your everyday life? (Circle answer)

___ Very Important  ___ Somewhat Important
___ Hardly Important at all  ___ Unimportant
Ferrans and Powers
QUALITY OF LIFE INDEX

**Part I.** For each of the following, please choose the answer that best describes how satisfied you are with that area of your life. Please mark your answer by circling the number. There are no right or wrong answers.

<table>
<thead>
<tr>
<th>HOW SATISFIED ARE YOU WITH:</th>
<th>Very Dissatisfied</th>
<th>Moderately Dissatisfied</th>
<th>Slightly Dissatisfied</th>
<th>Slightly Satisfied</th>
<th>Moderately Satisfied</th>
<th>Very Satisfied</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.  Your health?</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
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<td>2.  The health care you are receiving?</td>
<td>1 2 3 4 5 6</td>
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<td>3.  The amount of pain that you have?</td>
<td>1 2 3 4 5 6</td>
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<td>4.  The amount of energy you have for everyday activities?</td>
<td>1 2 3 4 5 6</td>
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<td>5.  Your physical independence?</td>
<td>1 2 3 4 5 6</td>
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<td>6.  The amount of control you have over your life?</td>
<td>1 2 3 4 5 6</td>
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<td>7.  Your potential to live a long time?</td>
<td>1 2 3 4 5 6</td>
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<td>8.  Your family's health?</td>
<td>1 2 3 4 5 6</td>
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<tr>
<td>9.  Your children?</td>
<td>1 2 3 4 5 6</td>
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<td>10. Your family's happiness?</td>
<td>1 2 3 4 5 6</td>
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<td>11. Your relationship with your spouse/significant other?</td>
<td>1 2 3 4 5 6</td>
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<td>12. Your sex life?</td>
<td>1 2 3 4 5 6</td>
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<td>13. Your friends?</td>
<td>1 2 3 4 5 6</td>
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<td>14. The emotional support you get from others?</td>
<td>1 2 3 4 5 6</td>
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<td>15. Your ability to meet family responsibilities?</td>
<td>1 2 3 4 5 6</td>
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<td>16. Your usefulness to others?</td>
<td>1 2 3 4 5 6</td>
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</tbody>
</table>

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© Copyright 1984 C. Ferrans and M. Powers (Do not use without permission.)
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<thead>
<tr>
<th>HOW SATISFIED ARE YOU WITH:</th>
<th>Very Dissatisfied</th>
<th>Moderately Dissatisfied</th>
<th>Slightly Dissatisfied</th>
<th>Slightly Satisfied</th>
<th>Moderately Satisfied</th>
<th>Very Satisfied</th>
</tr>
</thead>
<tbody>
<tr>
<td>17. The amount of stress or worries in your life?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>18. Your home?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>19. Your neighborhood?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
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<tr>
<td>20. Your standard of living?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>21. Your job?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>22. Not having a job?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
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<td>23. Your education?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
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<tr>
<td>24. Your financial independence?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>25. Your leisure time activities?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
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<tr>
<td>26. Your ability to travel on vacations?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>27. Your potential for a happy old age-retirement?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>28. Your peace of mind?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>29. Your personal faith in God?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
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<td>30. Your achievement of personal goals?</td>
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<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>31. Your happiness in general?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>32. Your life in general?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>33. Your personal appearance?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>34. Yourself in general?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>

(Please Go To Next Page)
Part II. For each of the following, please choose the answer that best describes how important that area of life is to you. Please mark your answer by circling the number. There are no right or wrong answers.

<table>
<thead>
<tr>
<th>HOW IMPORTANT TO YOU IS:</th>
<th>Very Unimportant</th>
<th>Moderately Unimportant</th>
<th>Slightly Unimportant</th>
<th>Slightly Important</th>
<th>Moderately Important</th>
<th>Very Important</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Your health?</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>2. Health care?</td>
<td>1 2 3 4 5 6</td>
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</tr>
<tr>
<td>3. Being completely free of pain?</td>
<td>1 2 3 4 5 6</td>
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</tr>
<tr>
<td>4. Having enough energy for everyday activities?</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>5. Your physical independence?</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>6. Having control over your life?</td>
<td>1 2 3 4 5 6</td>
<td></td>
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<tr>
<td>7. Living a long time?</td>
<td>1 2 3 4 5 6</td>
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<td></td>
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<tr>
<td>8. Your family's health?</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>9. Your children?</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Your family's happiness?</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Your relationship with your spouse/significant other?</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>12. Your sex life?</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>13. Your friends?</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. The emotional support you get from others?</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>15. Meeting family responsibilities?</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>16. Being useful to others?</td>
<td>1 2 3 4 5 6</td>
<td></td>
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<td></td>
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<tr>
<td>17. Having a reasonable amount of stress or worries?</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>18. Your home?</td>
<td>1 2 3 4 5 6</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

(Please Go To Next Page)
<table>
<thead>
<tr>
<th>HOW IMPORTANT TO YOU IS:</th>
<th>Very Unimportant</th>
<th>Moderately Unimportant</th>
<th>Slightly Unimportant</th>
<th>Slightly Important</th>
<th>Moderately Important</th>
<th>Very Important</th>
</tr>
</thead>
<tbody>
<tr>
<td>19. Your neighborhood?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>20. A good standard of living?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>21. Your job?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>22. To have a job?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>23. Your education?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>24. Your financial independence?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>25. Leisure time activities?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>26. The ability to travel on vacations?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>27. Having a happy old age/retirement?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>28. Peace of mind?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>29. Your personal faith in God?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>30. Achieving your personal goals?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>31. Your happiness in general?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>32. Being satisfied with life?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>33. Your personal appearance?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>34. Are you to yourself?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>

© Copyright 1984 C. Ferrans and M. Powers (Do not use without permission.)
Fill Out This Section Only if You Own a Dog or a Cat
Companion Animal Bonding Scale
(Poriesky, Hendrix, Mosier and Samuelson, 1987)

Please indicate your answer to following questions with an "X". Read each question carefully and use one "X" per question.

1. How often are you responsible for your companion animal's care?
   __Always  __Generally  __Often  __Rarely  __Never

2. How often do you clean up after your companion animal?
   __Always  __Generally  __Often  __Rarely  __Never

3. How often do you hold, stroke, or pet your companion animal?
   __Always  __Generally  __Often  __Rarely  __Never

4. How often does your companion animal sleep in your room?
   __Always  __Generally  __Often  __Rarely  __Never

5. How often do you feel that your companion animal is responsive to you?
   __Always  __Generally  __Often  __Rarely  __Never

6. How often do you feel that you have a close relationship with your companion animal?
   __Always  __Generally  __Often  __Rarely  __Never

7. How often do you travel with your companion animal?
   __Always  __Generally  __Often  __Rarely  __Never

8. How often do you sleep near your companion animal?
   __Always  __Generally  __Often  __Rarely  __Never
9. **What kind of pets do you currently own?** *(Circle number and describe breed.)*

1. Dog(s) . . . Breed_________________
2. Cat(s) . . . Breed_________________

10. **In what way(s) do you feel that your pet changes or influences your life.** *(Circle all that apply)*

1. Increased physical activity
2. Decreased opportunities to travel
3. Increased number of friends
4. Decreased number of friends
5. Improved husband/wife relationship
6. Improved relationships between your children
7. Worsened husband/wife relationship
8. Worsened relationship between your children
9. Taught more responsibility to self/children
10. Caused tension in household
11. Provided a sense of relaxation in household
12. Increased laughter in household
13. Decreased laughter in household
14. Decreased loneliness
15. Other (specify)_________________

11. **Do you feel your pet improves your quality of life?**

1. YES
2. NO

12. **Please explain your answer to #11.**

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________


__________________________ Thank you so much for filling out this questionnaire!!
APPENDIX G

Permission Letters to Use Portions of

Neuman's System Model Figures
Dear Requester,

Thank you for your inquiry regarding obtaining permission to reproduce material owned by Appleton & Lange division of Simon & Schuster Publishing.

Permission is granted subject to your research confirming that the material in question is original to our text. Permission is granted on a non-exclusive, one-time only or life of an edition basis, with distribution rights throughout the world. The permission is subject to the use of a credit line that must include the name of the author, title of the book, edition, copyright holder (Appleton & Lange), and year of publication. The credit line must appear on the same page where our text or illustration will appear.

Also, since permission granted is subject to author approval, write to: [Address Below]

Fee for this project is [Amount]

If you have any other questions, please let me know.

Sincerely,

Christine Dombeki

Permissions Dept.

Encl.

Betty Peenan, RN, Ph.D.
Box 408
Beverly, MA 01915
Johanna B. Hanson  
7633 Sea Cliff Way  
Las Vegas, Nevada 89128  
Home Phone (702) 2560-9250

Betty Neuman, RN, Ph.D.  
Box 488  
Beverly, Ohio 45715

December 27, 1996

Dear Dr. Neuman,

I am working on my thesis at the University of Nevada, Las Vegas and desire to use Figure 1.3 & 1.4 which are both part of your Systems Model, appearing on pages 26 and 28 of the second edition of your book The Neuman Systems Model.

I plan to use the diagram in my thesis to illustrate your model to represent how the companion-animal bond effects a person's health and quality of life. Adequate acknowledgment will be given to you and to Appleton & Lange. Thank you so much for your time and effort.

Sincerely,

Johanna B. Hanson
Table 1

Frequencies of Sample Demographics Regarding Age and Gender of Pet Owners and Non-Pet Owners

<table>
<thead>
<tr>
<th>Variable</th>
<th>Pet Owners N=136</th>
<th>Non-Pet Owners N=101</th>
<th>Total Sample N=237</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Freq./ (%)</td>
<td>Freq./ (%)</td>
<td>Freq./ (%)</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20 years or less</td>
<td>4 (3.0%)</td>
<td>1 (1.0%)</td>
<td>5 (2.1%)</td>
</tr>
<tr>
<td>21-30</td>
<td>18 (13.2%)</td>
<td>18 (18.0%)</td>
<td>36 (15.1%)</td>
</tr>
<tr>
<td>31-40</td>
<td>23 (16.8%)</td>
<td>23 (22.9%)</td>
<td>46 (19.3%)</td>
</tr>
<tr>
<td>41-50</td>
<td>33 (24.2%)</td>
<td>15 (15.0%)</td>
<td>48 (20.3%)</td>
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<tr>
<td>51-60</td>
<td>33 (24.2%)</td>
<td>17 (17.0%)</td>
<td>50 (21.2%)</td>
</tr>
<tr>
<td>61-70</td>
<td>16 (11.6%)</td>
<td>20 (20.0%)</td>
<td>36 (15.3%)</td>
</tr>
<tr>
<td>71-80</td>
<td>9 (6.6%)</td>
<td>7 (7.0%)</td>
<td>16 (6.7%)</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>37 (27.2%)</td>
<td>33 (32.7%)</td>
<td>70 (29.5%)</td>
</tr>
<tr>
<td>Female</td>
<td>99 (72.8%)</td>
<td>68 (67.3%)</td>
<td>167 (70.5%)</td>
</tr>
</tbody>
</table>

Note. Age (Pet Owners): Mean = 47.2, Median = 49.0, SD = 14.5, Range 18 - 77 years of age. Age (Non-Pet Owners): Mean = 46.8, Median = 47.0, SD = 16.0, Range 18 - 76 years of age. Total Sample: Mean = 47.0, Median = 49.0, SD = 15.3, Range 18 - 77 years of age. Modes of Gender for all Categories is Female.
Table 2

Frequencies of Sample Demographics Regarding Race and Employment Status of Pet Owners and Non-Pet Owners

<table>
<thead>
<tr>
<th>Variable</th>
<th>Pet Owners</th>
<th>Non-Pet Owners</th>
<th>Total Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N=136</td>
<td>N=101</td>
<td>N=237</td>
</tr>
<tr>
<td></td>
<td>Freq./ (%)</td>
<td>Freq./ (%)</td>
<td>Freq./ (%)</td>
</tr>
<tr>
<td>Race</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caucasian</td>
<td>110 (80.9%)</td>
<td>77 (76.2%)</td>
<td>187 (78.9%)</td>
</tr>
<tr>
<td>African-American</td>
<td>11 (8.1%)</td>
<td>18 (17.8%)</td>
<td>29 (12.2%)</td>
</tr>
<tr>
<td>Asian</td>
<td>5 (3.7%)</td>
<td>2 (2.0%)</td>
<td>7 (3.0%)</td>
</tr>
<tr>
<td>Hispanic</td>
<td>7 (5.1%)</td>
<td>4 (4.0%)</td>
<td>11 (4.6%)</td>
</tr>
<tr>
<td>Native American</td>
<td>3 (2.2%)</td>
<td>0</td>
<td>3 (1.3%)</td>
</tr>
<tr>
<td>Employment Status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employed</td>
<td>87 (64.0%)</td>
<td>57 (56.4%)</td>
<td>144 (61.0%)</td>
</tr>
<tr>
<td>Unemployed</td>
<td>8 (5.9%)</td>
<td>7 (6.9%)</td>
<td>15 (6.3%)</td>
</tr>
<tr>
<td>Retired</td>
<td>20 (14.7%)</td>
<td>25 (24.8%)</td>
<td>45 (19.1%)</td>
</tr>
<tr>
<td>Homemaker</td>
<td>20 (14.7%)</td>
<td>12 (11.9%)</td>
<td>32 (13.6%)</td>
</tr>
<tr>
<td>No Answer</td>
<td>1 (0.7%)</td>
<td>0</td>
<td>1 (0.4%)</td>
</tr>
</tbody>
</table>

Note. Mode for all groups is Caucasian and Employed.
Table 3

Frequencies of Sample Demographics Regarding Marital Status and Recoding of Marital Status of Pet Owners and Non-Pet Owners

<table>
<thead>
<tr>
<th>Variable</th>
<th>Pet Owners</th>
<th>Non-Pet Owners</th>
<th>Total Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>N=136</td>
<td>N=101</td>
<td>N=237</td>
<td></td>
</tr>
<tr>
<td>Freq./ (%)</td>
<td>Freq./ (%)</td>
<td>Freq./ (%)</td>
<td></td>
</tr>
<tr>
<td><strong>Marital Status</strong></td>
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<td></td>
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</tr>
<tr>
<td>Single</td>
<td>16 (11.8%)</td>
<td>16 (15.8%)</td>
<td>32 (13.5%)</td>
</tr>
<tr>
<td>Single (living w/sig. other)</td>
<td>3 (2.2%)</td>
<td>4 (4.0%)</td>
<td>7 (3.0%)</td>
</tr>
<tr>
<td>Married</td>
<td>97 (71.3%)</td>
<td>71 (70.3%)</td>
<td>168 (70.9%)</td>
</tr>
<tr>
<td>Divorced</td>
<td>15 (11.0%)</td>
<td>5 (5.0%)</td>
<td>20 (8.4%)</td>
</tr>
<tr>
<td>Separated</td>
<td>2 (1.5%)</td>
<td>0 (0.0%)</td>
<td>2 (.8%)</td>
</tr>
<tr>
<td>Widowed</td>
<td>3 (2.2%)</td>
<td>5 (5.0%)</td>
<td>8 (3.4%)</td>
</tr>
<tr>
<td><strong>Marital Status Recoded</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married/Single (living w/sig. other)</td>
<td>100 (73.5%)</td>
<td>75 (74.3%)</td>
<td>175 (73.8%)</td>
</tr>
<tr>
<td>Living Alone (Single/Div/Sep/Wid)*</td>
<td>36 (26.5%)</td>
<td>26 (25.7%)</td>
<td>62 (26.2%)</td>
</tr>
</tbody>
</table>

*Single, Divorced, Separated or Widow

Note. Mode for all groups: Married.
Table 4

Frequencies of Sample Demographics Regarding Annual Household Income and Highest Level of Education Achieved

<table>
<thead>
<tr>
<th>Variable</th>
<th>Pet Owners</th>
<th>Non-Pet Owners</th>
<th>Total Sample</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>N=136</td>
<td>N=101</td>
<td>N=237</td>
</tr>
<tr>
<td></td>
<td>Freq./ (%)</td>
<td>Freq./ (%)</td>
<td>Freq./ (%)</td>
</tr>
<tr>
<td>Annual Total Household Income</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Under $10,000</td>
<td>4 (3.1%)</td>
<td>3 (3.2%)</td>
<td>7 (3.2%)</td>
</tr>
<tr>
<td>$10-29,999</td>
<td>24 (18.8%)</td>
<td>20 (21.5%)</td>
<td>44 (19.9%)</td>
</tr>
<tr>
<td>$30-49,999</td>
<td>25 (19.5%)</td>
<td>37 (39.8%)</td>
<td>62 (28.1%)</td>
</tr>
<tr>
<td>$50-69,999</td>
<td>27 (21.1%)</td>
<td>13 (14.0%)</td>
<td>40 (18.1%)</td>
</tr>
<tr>
<td>$70-89,999</td>
<td>18 (14.1%)</td>
<td>12 (12.9%)</td>
<td>30 (13.6%)</td>
</tr>
<tr>
<td>$90-109,999</td>
<td>11 (8.6%)</td>
<td>7 (7.5%)</td>
<td>18 (8.1%)</td>
</tr>
<tr>
<td>$110-129,999</td>
<td>9 (7.0%)</td>
<td>0 (0.0%)</td>
<td>9 (4.1%)</td>
</tr>
<tr>
<td>$130,000 and over</td>
<td>10 (7.8%)</td>
<td>1 (1.1%)</td>
<td>11 (5.0%)</td>
</tr>
<tr>
<td>No Answer</td>
<td>8 (5.9%)</td>
<td>8 (7.9%)</td>
<td>16 (6.8%)</td>
</tr>
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Table 5

Frequencies of Sample Demographics Regarding Highest Level of Education Achieved

<table>
<thead>
<tr>
<th>Variable</th>
<th>Pet Owners</th>
<th>Non-Pet Owners</th>
<th>Total Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N=136</td>
<td>N=101</td>
<td>N=237</td>
</tr>
<tr>
<td></td>
<td>Freq./ (%)</td>
<td>Freq./ (%)</td>
<td>Freq./ (%)</td>
</tr>
<tr>
<td>High School</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Uncompleted</td>
<td>4 (2.9%)</td>
<td>6 (5.9%)</td>
<td>10 (4.2%)</td>
</tr>
<tr>
<td>High School/GED</td>
<td>23 (16.9%)</td>
<td>19 (18.8%)</td>
<td>42 (17.7%)</td>
</tr>
<tr>
<td>Some College/Tech</td>
<td>48 (35.3%)</td>
<td>37 (36.6%)</td>
<td>85 (35.9%)</td>
</tr>
<tr>
<td>College Degree</td>
<td>36 (26.5%)</td>
<td>16 (15.8%)</td>
<td>52 (21.9%)</td>
</tr>
<tr>
<td>Some Grad Credits</td>
<td>5 (3.7%)</td>
<td>10 (9.9%)</td>
<td>15 (6.3%)</td>
</tr>
<tr>
<td>Graduate Degree</td>
<td>20 (14.7%)</td>
<td>13 (12.9%)</td>
<td>33 (13.9%)</td>
</tr>
</tbody>
</table>

Note. Mode for all groups: Some College/Technical Training.
Table 6

Frequencies of Religious Preference and Importance of Religion

<table>
<thead>
<tr>
<th>Variable</th>
<th>Pet Owners</th>
<th>Non-Pet Owners</th>
<th>Total Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N=136</td>
<td>Freq./ (%)</td>
<td>N=101</td>
</tr>
<tr>
<td>Religious Preference</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lutheran</td>
<td>48 (35.6%)</td>
<td>38 (38.4%)</td>
<td>86 (36.8%)</td>
</tr>
<tr>
<td>Catholic</td>
<td>51 (37.8%)</td>
<td>29 (29.3%)</td>
<td>80 (34.2%)</td>
</tr>
<tr>
<td>Mormon</td>
<td>11 (8.1%)</td>
<td>7 (7.1%)</td>
<td>18 (7.7%)</td>
</tr>
<tr>
<td>Non-Denom.</td>
<td>21 (15.5%)</td>
<td>18 (18.2%)</td>
<td>39 (16.7%)</td>
</tr>
<tr>
<td>Seventh-Day Adventist</td>
<td>4 (3.0%)</td>
<td>7 (7.1%)</td>
<td>11 (4.6%)</td>
</tr>
<tr>
<td>No Answer</td>
<td>1 (.7%)</td>
<td>2 (2.0%)</td>
<td>3 (1.3%)</td>
</tr>
<tr>
<td>Importance of Religion</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very Important</td>
<td>136 (75.7%)</td>
<td>78 (77.2%)</td>
<td>181 (76.4%)</td>
</tr>
<tr>
<td>Somewhat Important</td>
<td>22 (16.2%)</td>
<td>15 (14.9%)</td>
<td>37 (15.6%)</td>
</tr>
<tr>
<td>Hardly Important at All</td>
<td>4 (2.9%)</td>
<td>2 (2.0%)</td>
<td>6 (2.5%)</td>
</tr>
<tr>
<td>Unimportant</td>
<td>7 (5.1%)</td>
<td>6 (5.9%)</td>
<td>13 (5.5%)</td>
</tr>
</tbody>
</table>

Note. Mode for Owners: Lutheran and “Very Important”. Mode for Non-Pet Owners: Catholic and “Very Important”.

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Table 7

Frequencies of Sample Demographics Regarding Number of Children and Children Living in Home

<table>
<thead>
<tr>
<th>Variable</th>
<th>Pet Owners</th>
<th>Non-Pet Owners</th>
<th>Total Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N=136</td>
<td>N=101</td>
<td>N=237</td>
</tr>
<tr>
<td></td>
<td>Freq./ (%)</td>
<td>Freq./ (%)</td>
<td>Freq./ (%)</td>
</tr>
<tr>
<td>Number of Children</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>35 (25.7%)</td>
<td>22 (21.8%)</td>
<td>22 (21.8%)</td>
</tr>
<tr>
<td>One</td>
<td>19 (14.0%)</td>
<td>14 (13.9%)</td>
<td>14 (13.9%)</td>
</tr>
<tr>
<td>Two</td>
<td>31 (22.8%)</td>
<td>23 (22.8%)</td>
<td>54 (22.8%)</td>
</tr>
<tr>
<td>Three</td>
<td>24 (17.6%)</td>
<td>18 (17.8%)</td>
<td>42 (17.7%)</td>
</tr>
<tr>
<td>Four</td>
<td>12 (8.8%)</td>
<td>8 (7.9%)</td>
<td>20 (8.4%)</td>
</tr>
<tr>
<td>Five</td>
<td>5 (3.7%)</td>
<td>4 (4.0%)</td>
<td>9 (3.8%)</td>
</tr>
<tr>
<td>Six or More</td>
<td>10 (7.3%)</td>
<td>12 (11.9%)</td>
<td>22 (9.3%)</td>
</tr>
<tr>
<td>Children Living in Home:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>47 (34.6%)</td>
<td>35 (34.7%)</td>
<td>82 (34.6%)</td>
</tr>
<tr>
<td>No</td>
<td>89 (65.4%)</td>
<td>66 (65.3%)</td>
<td>155 (65.4%)</td>
</tr>
</tbody>
</table>

Note. Modes for Pet Owners: No Children and No Children Living In Home. Modes for Non-Pet Owners: Two Children but No Children Living In Home.
Table 8

Frequencies of Ordinal Quality of Life Index Scores

<table>
<thead>
<tr>
<th>Variable</th>
<th>Pet Owners</th>
<th>Non-Pet Owners</th>
<th>Total Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N=135</td>
<td>N=101</td>
<td>N=236</td>
</tr>
<tr>
<td></td>
<td>Freq./ (%)</td>
<td>Freq./ (%)</td>
<td>Freq./ (%)</td>
</tr>
<tr>
<td>Quality of Life Scores (Ordinal Scale)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low (Score of 5.26 to 11.24)</td>
<td>1 (.7%)</td>
<td>3 (3.0%)</td>
<td>4 (1.7%)</td>
</tr>
<tr>
<td>Medium Low (Score of 11.25-17.23)</td>
<td>7 (5.2%)</td>
<td>8 (7.8%)</td>
<td>15 (6.4%)</td>
</tr>
<tr>
<td>Medium High (Score of 17.24-23.22)</td>
<td>95 (70.4%)</td>
<td>61 (60.4%)</td>
<td>156 (66.1%)</td>
</tr>
<tr>
<td>High (Score of 23.23 to 29.21)</td>
<td>32 (23.5%)</td>
<td>29 (28.7%)</td>
<td>61 (25.8%)</td>
</tr>
</tbody>
</table>

Note. Mean QLI score for pet owners = 21.49, SD = 2.65, Mode = Medium-High; Mean score for Non-Pet Owners = 20.98, SD = 3.54, Mode = Medium-High. Please review narrative for explanation of scores of QLI.
Table 9

Frequencies of Ordinal Companion Animal Bonding Scores of Pet Owners (N = 134)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percent</th>
<th>Central Tendency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Bonding (Score of 8-15)</td>
<td>4</td>
<td>2.9%</td>
<td></td>
</tr>
<tr>
<td>Med-Low Bonding (Score of 16-23)</td>
<td>22</td>
<td>16.2%</td>
<td></td>
</tr>
<tr>
<td>Med-High Bonding (Score of 24-31)</td>
<td>40</td>
<td>29.9%</td>
<td>Mode: High</td>
</tr>
<tr>
<td>High Bonding (Score of 32-40)</td>
<td>68</td>
<td>50.0%</td>
<td></td>
</tr>
<tr>
<td>Variable</td>
<td>Frequency</td>
<td>Percent</td>
<td></td>
</tr>
<tr>
<td>-----------</td>
<td>-----------</td>
<td>---------</td>
<td></td>
</tr>
<tr>
<td>Cat</td>
<td>39</td>
<td>28.7%</td>
<td></td>
</tr>
<tr>
<td>Dog</td>
<td>78</td>
<td>57.4%</td>
<td></td>
</tr>
<tr>
<td>Dog &amp; Cat</td>
<td>17</td>
<td>12.5%</td>
<td></td>
</tr>
<tr>
<td>Bird</td>
<td>2</td>
<td>1.4%</td>
<td></td>
</tr>
</tbody>
</table>

Note. Participants with both dog & cat, and bird owners were not counted in the statistical analysis.
Table 11

$t$-Test Results of Quality of Life Scores of Pet Owners and Non-Pets Owners

<table>
<thead>
<tr>
<th>Variable</th>
<th>No. of Cases</th>
<th>Mean</th>
<th>SD</th>
<th>Std. Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>QOL Scores</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pet Owners</td>
<td>135</td>
<td>21.49</td>
<td>2.65</td>
<td>.229</td>
</tr>
<tr>
<td>Non-Pet Owners</td>
<td>101</td>
<td>20.98</td>
<td>3.54</td>
<td>.353</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>F Value</th>
<th>2-tail t-value</th>
<th>df</th>
<th>2-tail Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.614</td>
<td>.006</td>
<td>1.20</td>
<td>178.10</td>
</tr>
</tbody>
</table>

Note. $F$-value is a test of assumptions of homogeneity of variance. Because $F$ value is significant, it signifies that the variance between the two groups are unequal. Therefore, the separate formula is used in computing the $t$ value.
Table 12

**Pearson Product Correlation of Scores on the Companion Animal Bonding Scale and Quality of Life Index (N=135)**

<table>
<thead>
<tr>
<th>Score on Companion Animal Bonding</th>
<th>Quality of Life Index Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>.176</td>
<td></td>
</tr>
</tbody>
</table>

*p* = .05
Table 13

Chi-Square Analysis of Type of Pet Owned and Ordinal Scores of OLI (N = 116)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Lower Scores (5.26 - 17.23)</th>
<th>Higher Scores (17.24 - 29.21)</th>
<th>Row Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dog Owners</td>
<td>5</td>
<td>72</td>
<td>77</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>66.4%</td>
</tr>
<tr>
<td>Cat Owners</td>
<td>2</td>
<td>37</td>
<td>39</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>33.6%</td>
</tr>
<tr>
<td>Column Total</td>
<td>7</td>
<td>109</td>
<td>116</td>
</tr>
<tr>
<td></td>
<td>6.0%</td>
<td>94.0%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Note. X² = .08, df = 1, p = .77.
Table 14

Simultaneous Multiple Regression Analysis of Marital Status, Presence of Children in Home and Pet Ownership to Quality of Life (N=237)

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>Beta</th>
<th>Sig. of t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pet Ownership</td>
<td>-.50</td>
<td>-.08</td>
<td>.20</td>
</tr>
<tr>
<td>Presence of Children in Home</td>
<td>-1.30</td>
<td>-.20</td>
<td>.00*</td>
</tr>
<tr>
<td>Marital Status</td>
<td>.69</td>
<td>.09</td>
<td>.25</td>
</tr>
</tbody>
</table>

Note. $R^2$ Square = .0519, $F = 4.239$, $p = .0061$
Table 15

Correlation Matrix of Sample Demographics and Quality of Life Index Scores (QLI) (N = 237)

<table>
<thead>
<tr>
<th>Variable</th>
<th>QLI</th>
<th>Gender</th>
<th>Age</th>
<th>Race</th>
<th>Income</th>
<th>Educ.</th>
<th>Religion</th>
</tr>
</thead>
<tbody>
<tr>
<td>QLI</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>.138</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>.241*</td>
<td>-.007</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Race</td>
<td>-.015</td>
<td>.054</td>
<td>-.250</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Income</td>
<td>.099</td>
<td>.015</td>
<td>.003</td>
<td>-.100</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Educ.</td>
<td>.044</td>
<td>-.197</td>
<td>-.071</td>
<td>.036</td>
<td>.210</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Religion</td>
<td>-.102</td>
<td>-.106</td>
<td>-.296</td>
<td>.093</td>
<td>.072</td>
<td>.080</td>
<td></td>
</tr>
</tbody>
</table>

*Significant at .05
Table 16

Responses of Pet Owners To How Pets Influence/Changes Their Life. (N = 136)

<table>
<thead>
<tr>
<th>Item</th>
<th>Percentage of Participants Circling “Yes”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased laughter in home</td>
<td>83.2%</td>
</tr>
<tr>
<td>Provided a sense of relaxation in home</td>
<td>75.0%</td>
</tr>
<tr>
<td>Decreased loneliness</td>
<td>58.1%</td>
</tr>
<tr>
<td>Increased physical activity</td>
<td>57.4%</td>
</tr>
<tr>
<td>Taught more responsibility to self/children</td>
<td>47.1%</td>
</tr>
<tr>
<td>Improved relationship between your children</td>
<td>30.1%</td>
</tr>
<tr>
<td>Improved husband/wife relationship</td>
<td>26.3%</td>
</tr>
<tr>
<td>Decreased opportunities to travel</td>
<td>22.1%</td>
</tr>
<tr>
<td>Increased numbers of friends</td>
<td>15.4%</td>
</tr>
<tr>
<td>Caused tension in household</td>
<td>13.9%</td>
</tr>
<tr>
<td>Worsened husband/wife relationship</td>
<td>2.5%</td>
</tr>
<tr>
<td>Decreased numbers of friends</td>
<td>1.5%</td>
</tr>
<tr>
<td>Decreased laughter in home</td>
<td>1.3%</td>
</tr>
<tr>
<td>Worsened relationship between your children</td>
<td>.7%</td>
</tr>
</tbody>
</table>
Table 17

Cronbach's alpha for Quality of Life Index and Companion Animal Bonding Scale (N = 136)

<table>
<thead>
<tr>
<th>Questionnaire</th>
<th>alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality of Life Index</td>
<td>.92</td>
</tr>
<tr>
<td>Companion Animal Bonding Scale</td>
<td>.84</td>
</tr>
</tbody>
</table>
APPENDIX I

Histograms and Scattergram
Figure 4  Quality of Life Scores of Total Sample

Std. Dev = 3.07
Mean = 21.3
N = 236.00
Figure 5 Quality of Life Scores of Pet Owners

- Std. Dev = 2.66
- Mean = 21.5
- N = 135.00
Figure 6 Quality of Life Scores of Non-Pet Owners

Std. Dev = 3.55
Mean = 21.0
N = 101.00
Figure 7  Companion Animal Bonding and Quality of Life