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THE EFFECT OF A PET'S PRESENCE UPON ANXIETY DURING A SIMULATED CLINICAL INTERVIEW

BY

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B.A., University of Central Florida, 1986

THESIS

Submitted in partial fulfillment of the requirements for the Master of Science degree in Clinical Psychology in the Graduate Studies Program of the College of Arts and Sciences University of Central Florida Orlando, Florida

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Abstract

Recognizing the importance of evolutionary parallels between humans and other animals, researchers make use of animals to better the understanding of people in various fields of study, such as history, ecology, medicine, psychology, and sociology (Levinson, 1978). Boris Levinson (1962) was an early advocate for the inclusion of pets in psychotherapeutic intervention. His theories have been frequently cited in research that has attempted to define the possible benefits associated with utilizing pets as an adjunct in the treatment of disturbed populations. The results of studies with varied populations indicate that a pet's presence can lower a person's anxiety level, positively increase self-concept, stimulate social interaction, provide a source of non-threatening acceptance, improve the prognosis for cardiac patients, and encourage goal-oriented behavior. However, few empirical studies have been conducted to explain the mechanisms responsible for the healthy benefits that have been associated with pet facilitated therapy.

The goal of this study was to further identify the variables present in person-pet interactions that are desirable in therapeutic processes. Thirty undergraduate students were recruited to participate in a 30 minute simulated clinical interview. It was hypothesized that the 15 subjects in the dog-present experimental group would show significantly lower situational anxiety compared
to the 15 subjects experiencing a dog-absent interview. It was also hypothesized that there would be temporal decreases in anxiety for the experimental group, and a greater degree of favorableness felt towards pets. The State-Trait Anxiety Inventory (Spielberger, et al. 1983), The Pet Attitude Scale (Templer, 1981) and behavioral measures were used to test the hypotheses. Results indicated that the dog's presence had no significant effect upon anxiety, and there were no significant changes in pet attitude. Both groups showed a consistent and significant decrease between pre- and post-interview scores measuring State and Trait Anxiety. The results of this study suggest that pet facilitated therapy has limited applicability with a college population that is typically well adjusted and high functioning. It was suggested that the subjects recruited for this study may not have had a need to utilize the dog's presence for anxiety reduction as might a clinical population.
ACKNOWLEDGEMENTS

This study is personally relevant for me given that a pet has always been a part of my home. My family's dog, a Golden Retriever named Moses, was originally designated to be the pet included in this study, until recently diagnosed with a terminal type of cancer. In part, this is dedicated to his memory and what he meant to me.

I thank my committee members for their guidance and support, especially Dr. Blau for acting as my mentor these past years.

I thank my family members for their unbending belief that I can accomplish what I set out to achieve. I also wish to extend my appreciation to Betty Allen for her "technical" support. Most of all, I thank Kecia, my wife, for the tolerance, patience, and love she has given during my graduate education.
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INTRODUCTION

Historically, animals have been sources of food, sport, myths, worship, and literary and artistic inspiration. They have also been involved in people's leisure activities, have assisted the handicapped, and have been adopted for companionship and protection (McCulloch, 1983). Recognizing the importance of evolutionary similarities between humans and other animals, scientists make use of various species to better the understanding of people and their behavior in various fields of study, such as history, ecology, medicine, psychology, and sociology (Levinson, 1978). The importance people place on the domestication of animals in today's society is reflected in the huge investments they make in maintaining pets in their homes. In 1987, $5.28 billion was spent by the population of the United States on food for dogs and cats (Pet Food Institute, 1987). This figure excludes the cost of caring for other types of pets and the various other expenses involved in caring for animals, such as veterinarian attention. At least 52.2% of the U.S. households own pets, with dogs being owned by 37.2% and cats by 30% of all households (Pet Food Institute, 1987).

The first documented use of animals for emotional and behavioral improvement in people was described by William Tuke in the late 18th century (McCulloch, 1983). This was an effort to enhance the dignity of mentally disturbed people in England. Tuke founded an institution that chose not to employ the use of
punishment or restraint in dealing with the mentally disturbed. His approach was novel in that it attempted to stimulate the patients' interests in activities outside of themselves and promoted goal-directed behavior by providing them with animals for which to care. Animals were also a part of the treatment at Bethal, an institution in West Germany established in 1867 (McCulloch, 1983). This institution originally treated epileptics in a large home-style environment. Today, the institution has a 5,000 patient capacity and treats mental disorders in an environment that focuses heavily on caring for animals. McCulloch (1983) reports that neither empirical research nor organized data collection were conducted to explain the use of animals in treating the mentally disturbed at either institution. He concluded that the interaction with the animals provided this population with a structured lifestyle, a sense of purpose and increased self-worth, and stimulated their ability to meaningfully interact with a responsive object outside of themselves.

Levinson (1962) was an early advocate for the use of pets in the psychotherapeutic process. He generated questions and proposed theoretical explanations in response to the benefits he first observed with child patients as a result of chance involvement with his dog during treatment. In the first of his many articles pertaining to pet facilitated therapy, he stated that he was "quite surprised to find, upon careful scrutiny of many published sources, that no reports could be found of the planned use of the dog as an aide in therapy with disturbed children" (p. 60). In his series of published articles
and studies he suggested that various types of pets can assist children, adolescents, and the aged in resolving developmental and interpersonal conflicts.

In the following review of the literature, the inclusion of pets in various treatment modalities will be examined. Today, pets are an adjunct to interventions in outpatient and inpatient facilities, as well as residential, prison, and nursing home institutions. Results of the studies with these populations and the suggested mechanisms of change involved in patient-pet relationships are now reviewed.

**Frequency of pet involvement in treatment**

To discover the prevalence of pet use in psychotherapy, Levinson (1971, 1972) conducted mail surveys targeting psychotherapists and training schools for delinquent children. He surveyed half the training schools in this country listed in the Directory of Public Training Schools for Delinquent Children. The training schools treated children with histories characterized by poor progress in previous forms of therapy, and chronic antisocial behaviors. Of the 112 returns, (a 74.7% response rate), 38 schools (33.9%) utilized work programs involving farm animals. Forty-six (46%) of all schools that replied allowed the children to own pets, an even greater number of schools permitted the children to play with pets that they did not own or belonged to staff members. Their use of pets with children was defined as physically maintaining the animals, playing leisurely with the animals, and keeping the pets in
the resident living areas. When completing the questionnaire, many respondents chose to critique the usefulness of pets with the children. They conditionally regarded the interaction as positive. The use of pets in schools for delinquents failed to have positive effects when there were instances of neglect, physical molestation and perversion acted out towards the animals by the children.

Levinson's 1972 survey of the members of the Clinical Division of the New York State Psychological Association elicited 319 replies. He questioned the inclusion of pets in treating patients. Some therapists were no longer practicing and many respondents did not fully complete the survey. Fifty (32.9%) of 152 therapists who answered the question of past usage of pets stated they had done so with a number of clients. Twenty-five (16.9%) of 148 were currently employing the use of pets in therapy. Of the respondents asked to critique pet usefulness in their experiences, 91% answered positively. The age of the patients viewed most appropriate for pet involvement was the 5 to 15 year range; 82 (56.1%) of 146 therapists concurred in their responses. Forty-seven replies addressed the problems suitable for pet involvement; 10 (21.3%) believed "uncommunicative, emotionally and socially isolated children and preadolescents" (p. 156) was the clinical population that could most benefit. In the treatment of schizophrenia and phobias, 9 (19.1%) and 7 (14.9%) respectively, believed pet therapy would benefit the patient.

Rice, Brown and Caldwell (1973) received 190 replies from members of the American Psychological Association's Division of
Psychotherapy in response to a questionnaire assessing their working knowledge and use of pets in therapy. Twenty-one percent of the sample reported involving live or imagined animals in therapy.

The most frequently reported use is that of employing an animal as a vehicle for cultivating or modeling the positive nature of interpersonal relationships, e.g., animals have been used in a gestalt framework as means of introducing the importance of touch, smell and warmth; as an intermediary for inpatient transactions; and as an object to love and care about. Animals are almost as frequently used to ease the stress of the initial phases of therapy to establish rapport. Specific means of accomplishing this range from having an animal present with no direct references made by the therapist to having a dog do tricks for child patients. Therapists also employ actual animals in the treatment of phobias, including snakes and dogs. Isolated uses of animals include suggesting that the patient obtain a pet as a means of introducing practical care-taking responsibility or introducing a pet as a reward in behavior modification paradigms (p. 324).

These surveys provide a strong indication that pets are perceived as an important resource in the treatment of numerous disorders. A varied, but definite percentage of professional members of the organizations cited above believe there are potential benefits in using animals, and have sometimes employed the unique characteristics of animals to aid in treatment. The remainder of this introduction section presents the application of pet facilitated
intervention with different populations, along with research that examines the usefulness of person-pet relationships.

Pet facilitated therapy and children

Levinson (1962) was the first therapist to advocate the use of pets in therapy. He used clinical observations to describe how his dog helped elicit emotional and behavioral responses from a withdrawn child during their initial session. Levinson's dog approached the boy during a diagnostic interview to assess the need for hospitalization due to extreme withdrawal. Although this was an unplanned occurrence, Levinson permitted their interaction because of the boy's verbal curiosity about the dog and the playfulness the boy was showing. The child expressed an interest in returning to his office after the initial session to visit the dog. Eventually, "as some of the affection elicited by the dog spilled over onto me, I was included in the play" (p. 60).

Levinson (1962, 1964, 1965, 1969, 1971) presented his theory and generated hypotheses regarding the implementing of a pet's "affectionate and non-judgmental" (1962, p. 61) qualities in working with various populations. A common theme in Levinson's articles justifying the use of pets with children is that pets are animated creatures that can actively express physical affection, acceptance, dependence, and autonomy in comparison to an inanimate play toy. He suggested that a child's interaction with a dog may assist the therapist in leading the child through conflict resolutions with
techniques and experiences the child could better tolerate from a non-adult source. For example, in order to satisfy his or her immediate nurturance needs, a child, who has been traumatized by a parent, is likely to accept affection and comforting from a non-threatening dog.

Levinson (1964) suggested uses for child-pet interactions in assisting the child with developmental tasks. "In his use of pets a child goes through a maturational process" (p. 244). Before a child learns to speak, he learns about himself and differences between self and objects in its environment through physical sensations. The nonverbal relationship a child experiences with a pet has inherent cause-effect components that assist in the self-other identification of a child. In addition, Levinson suggested that an older child who is undergoing conflict with authority, can work through the control issue by dominating the pet and influencing its behavior. By playing with the pet, a child can assign and project a variety of roles, including submission, allegiance or opposition, to the pet and then manipulate the interactions between them to resolve the conflict. Therefore, observing a child's interactions with a pet can be of diagnostic significance for the therapist and a source of catharsis for the child patient. Death issues and loss experiences may also occur in the child-pet relationship. Grief at the loss of a pet may raise the child's awareness that living objects (pets and people) are mortal and finite. Levinson viewed pets as "psychotherapeutic aids" (p. 248) that allow the child to attempt to accomplish developmental tasks.
because of their accepting characteristics. Furthermore, the pets' amenable nature acts as a bridge for the therapist in building a relationship with the patient.

Friedmann, Katcher, Thomas, Lynch and Messent (1983) designed a study that sought to explain the effectiveness of using dogs as an adjunct to therapy with children by taking physiological measures of anxiety. They hypothesized that the presence of an animal would reduce the naturally elevated physiological responses of the child when he or she communicates interpersonally with others. The suggested soothing effect of the animal's presence for the child in the experimental situation would be analogous to involving a pet in the initial time a child spends with a therapist, the result being a less inhibited flow of communication between patient and therapist. Their study utilized an automated blood pressure and heart measuring device to monitor the responses of 36 neighborhood children living near one of the authors. The subjects' ages ranged from 9 to 16, averaging 12.2 years. After a baseline measuring period, each subject was asked to rest for 2 minutes, then read for 2 minutes. This procedure was repeated once. One of three dogs used in the study was present during either the first or second rest/read trial. The dog-present trial was alternated between subjects as the grouping variable. The physiological measurements were taken at even, set intervals throughout both trials for all subjects. The measures were systolic (SBP), diastolic (DBP), and mean arterial (MAP) blood pressures and heart rates (HR).
Using a repeated measures analysis of variance, significant effects were achieved for the two variables examined. The obtained measures for activity were significantly lower for resting versus reading, and the grouping variable revealed a significant difference when the cardiac measures were lower for the dog-present-initially group versus the dog-absent-initially group. Also, a significant interaction effect was found between the condition variable, dog present versus dog absent, and the grouping variable among all four cardiac measures. Considering the blood pressure without heart rate, the dog's presence, significantly lowered the measures.

These results showed that the dog's presence during relaxed and mildly stressful conditions induced a lowered anxiety state as measured by physiological reactions. The effect was greater when the dog was present at the start of the procedure in contrast to being introduced during the second half of the procedure. The cardiac measures were elevated for all subjects when reading versus resting, showing that verbal interactions can be a stressor. "From these observations we suggest that the conjoin of therapist and dog causes less anxiety than the therapist alone" (p. 464). The authors contend that the dog's presence is responsible for the decrease in anxiety measured, and not any change in the experimenter's behavior or presentation of himself. The results of Friedmann et al.'s study is partly questionable due to the recruitment procedure; the subjects were children from the neighborhood of one of the researchers and therefore may have been biased in their perceptions of the
experimenter prior to the study. Also, a total of 3 dogs were used in Friedmann et. al's study, thereby altering the independent variable to an unknown degree. The researchers suggest their results are analogous to Lockwood's study (1983) in which social perceptions of most of the ambiguous situations presented in drawing form to a large subject pool significantly shifted in a positive direction when an animal was included.

Jenkins (1986) utilized blood pressure measures in a similar study of 20 pet owners. Her subjects ranged from 9 to 58 years of age, and met the researcher's criterion of having high positive regard for their pet animals as measured by the Pet Attitude Scale. The subjects were tested in their own homes using an automated blood pressure device to measure reactions during a reading condition and a dog petting condition, which could include speech but not rough play. The order of treatment conditions varied between subjects, and baseline measures were obtained. Each subject wore the blood pressure cuff for a total of approximately 50 minutes, while readings were taken every 3 minutes. "Subjects displayed significantly lower systolic \( F(1,19) = 23.57, p < .001 \) and diastolic \( F(1,19) = 14.53, p < .01 \) blood pressures while petting, although heart rate \( F(1,19) = .03 \) did not change significantly" (p. 22). Jenkins concluded that pets appear to have the same beneficial effects in domestic environments as they do in institutions and other treatment settings.
Deatrick (1983) conducted a study that examined the effects of direct, pet experiences with the self-concepts of handicapped children. Sixty-four children enrolled at a rehabilitation school for the handicapped were involved in 1 of 2 programs developed by the researcher. The first group (20 subjects) participated in an 8 week program in which they spent individual time with a pet dog; the participants in the second group (21 subjects) experienced classroom training on pet care and behavior without a live pet. The control group (23 subjects) experienced no change in their regular school schedule. The Piers-Harris Children's Self-Concept Scale was administered pre- and post-treatment to all groups, along with the Behavior Rating Scale, developed by Coopersmith. These measures were completed by the teachers and their aides. A statistically significant difference was found for the main effect. Using a two-way analysis of variance on the mean gains for the Piers-Harris Scale \([F(2) = 10.56, p < .05]\), and the Behavior Rating Scale \([F(2) = 53.97, p < .05]\), Deatrick found the subjects in the direct, pet involvement group showed a significantly higher, positive change compared to the classroom instruction group and control group on both measures of self-concept. History of pet ownership was not found to be a significant variable.

Levinson's groundbreaking work is frequently cited in more recent studies examining the characteristics associated with the person-pet relationship. His observations and theory related to pet facilitated therapy and the empirical studies presented suggest pets
can be used to reduce anxiety felt by children in therapy. This effect may then result in an enhanced flow of less defensive communication from the child towards the therapist. The accepting, nonjudgmental quality of a pet described by Levinson is suggested to be associated with improved self-concept in children involved in an experiential pet program. The studies utilizing child subjects appear to be collectively examining the process of relationship development between child and pet, and the resulting changes exhibited by the children. Discussion on the effect of pet involvement with children will now shift to another age group in which pet-facilitated therapy has been used.

**Pets and the elderly**

Levinson (1969) continued his efforts to define the role of pets in therapy and the methodology most appropriate for their introduction in his suggested uses of pets in treating the elderly. He suggested that aged persons have a need to find a new role when they are no longer productive by societal standards and they can no longer contribute to the working force in the manner they were accustomed for many years. When owning a pet there is an exchange of behavioral affection that may be otherwise lost due to the death of similar-aged friends, spouses, and relatives. Dependence on the part of the pet facilitates the feeling of being needed. The upkeep of a pet offers goal-oriented behavior for the elderly, thus activity is involved. Levinson also stated that a pet is a
means of initiating contact with others, such as walking a dog and
having an available introduction to others and an initial topic of
conversation. A pet that displays loyalty may assist aged persons in
ridding themselves of possible resentment towards others for not
providing the attention and recognition deserved for years of
accomplishments. Observing the pet's natural aging process may
help the aged in acceptance of similar changes in themselves.

Levinson (1978) stated that "the development of empathy,
self-esteem, self-control, and autonomy can be promoted in children
through raising pets, while the loneliness of old age can be eased and
deterioration warded off by nurturing an animal" (p. 1031). When
assessing the possible use of pets with these populations, Levinson
recognized the need for the therapist to evaluate the appropriateness
of pet therapy with specific patients and suggested the introduction
of a pet at home. When using pets in therapy with children and the
aged, he was aware of the need to evaluate the patient for animal
related phobias, traumas and allergies, and to match the patient's
preference for different types of pets with varying pet
characteristics such as size, temperament and maintenance needs.

Brickel (1979) surveyed the staff of an inpatient facility to
assess the roles pet mascots play in a hospital ward. The facility
treated elderly persons, mostly 50 to 70 years of age, and allowed
the presence of pet mascots in a designated area of the hospital
ward. The most frequent diagnosis among the patients was chronic
brain syndrome. Several cats were allowed to roam the dayroom on
the ward where these patients had access to them during daytime hours. The author interviewed the available staff (n = 19), consisting of a physician, licensed vocational and registered nurses, and nursing assistants, and allowed them to remain anonymous in their responses. A series of open-ended questions regarding patient-pet interactions were asked that included issues such as advantages and disadvantages to patients and staff, uses of pets under different circumstances, and maintenance. The responses recognized to be common were categorized under 4 headings: responsiveness; individual pleasure; milieu enhancement; and reality therapy. No statistical analysis was done with the data collected.

The cats were viewed as adding to patient responsiveness to the hospital environment. The pets were not seen as being responsible for significant therapeutic progress, but their frequent stimulation of the patients advanced the staff's efforts with the patients. Intermittently, the pets were viewed as making initial breakthroughs with nonverbal, withdrawn patients, and were the catalyst in generating intrapatient interactions. The individual pleasure category referred to the staff observations that the cats often entertained patients with their playfulness, and that the patients "enjoyed having the pets around to hold, stroke, and care for" (p. 370). The reported milieu enhancement was defined by the pets making the ward less like an institution. The staff also found that the patients regularly made more statements that reflected an accurate observation of their environment and the pets. Tactile
communication through stroking and petting the cats was common, as well as patient observations about the appearance of the cats (sick versus healthy). Patients engaged in planning and anticipation of the cats' needs by often saving meal scraps for them.

One of the 19 staff members recalled an instance in which a patient was scratched by a cat; however, that occurrence was the only negative aspect of having cats on the ward. The potential for injury was seen as greater for the animals rather than the patients. There were occasional instances of cats being put in toilets and trash cans by patients, while the inherent chance existed for the cats' tails to be threatened by wheelchairs on the geriatric ward. Staff efforts averted the problems related to hygiene maintenance by frequently letting the cats outside to void and to prevent them from disturbing patients' food during mealtimes, having the patients and themselves regularly engage in handwashing after handling the animals, and being responsible for the cats' health.

Kidd and Feldman (1981) tested their hypothesis that aged persons owning pets would "score higher on the Self-confidence and Personal Adjustment scales and lower on the Abasement, Deference, and Succorance-need scales of the Adjective Checklist (Gough & Heilburn, 1965)" (p. 869). Their administration of the Adjective Checklist to 51 pets owners, male and female, and 53 non-pet owners, male and female, between the ages of 65 and 87, yielded significant differences on 4 of the scales. Using an analysis of variance they showed that pet owners scored significantly higher on
the number of Favorable Adjectives checked \[ F (3) = 2.89, p < .05 \], indicating greater responsibility, dependability, and a lack of egotism and self-centeredness. On the Nurturance scale, pet owners were significantly more helpful and kind to others \[ F (3) = 3.23, p < .05 \]. Pet owners scored significantly lower than non-pet owners on the scales measuring dependent traits \[ F (3) = 3.24, p < .05 \], and self-abasement and pessimistic traits \[ F (3) = 3.25, p < .05 \].

Ory and Goldberg (1983) explored the predictive variables associated with the subjective happiness of the elderly and the relationship between subjective happiness and pet ownership. They conducted home interviews with 1,073 noninstitutionalized, married, white females ages 65 to 75, and questioned demographic variables, socioeconomic level, health status, physical activities, social interactions, and pet interactions, when applicable. Happiness was measured by a single item question to which the participant could rank themselves as "very happy, pretty happy, or not too happy" (p. 308). The authors support their selection of this dependent measure after reviewing the literature related to evaluating life satisfaction of the elderly, and after reaching a significant positive correlation between this question and similar items on perceived happiness measures. No significant relationship was found between self-professed happiness and pet ownership, until the quality of the owner-pet relationship was statistically considered. "When separating pet owners who are very attached to their pets from those who are not very attached, a significant relationship emerges
between pet ownership characteristics and happiness (Chi Square = 12.49, p = .01)" (p. 311). The degrees of freedom were not reported for this statistical finding.

The authors also examined the data to look at the relationship between the quality of owner-pet relationships and its indicativeness of the quality of other social attachments. The authors again looked at the quality of pet ownership and categorized the subjects into 3 groups according to self-professed feelings of attachment towards their pets: no pet; pet without feelings of attachment; and pet with feelings of attachment. The percentage of women reporting to have a spouse who was not a confidant was greatest in the pet nonattached group, (31.4%). Twenty-three percent of the pet attached group reported not having a spouse confidant, while 20.3 percent in the no pet group did not have a spouse confidant. The difference between the pet nonattached group was significantly different from the other two groups (Chi Square = 6.73, p = .03). The degrees of freedom were not reported for this statistical finding. This difference suggests that pet owners who state they have developed feelings of attachment towards their pet are more likely to profess viewing their spouse as a confidant compared to the owners who state that are not attached to their pet.

In summary, pets can be a source of comfort, companionship, and reassurance for the elderly in that an emotional exchange of affection and dependence with a pet enhances the owners' continuing sense of accomplishment and of being needed. Pets are a source of
sensory and social stimulation for the aged who become isolated from others and may experience feelings of lethargy. Characteristics, such as self-perceived happiness, responsibility, and optimism, associated with a more healthy personal adjustment have been found with greater frequency in aged pet owners versus non-owners.

The institutionalized

In McCulloch's (1983) review of the literature pertaining to pet involvement in treatment of different populations, he describes the results of David Lee's work in Lima State Hospital for the Criminally Insane, in Lima, Ohio. Lee initiated a program in which the patient had to earn the privilege of having his own pet through the caring for the wards' mascots: fish and gerbils. After the patient had demonstrated responsible behavior toward the wards' mascots, he could petition for his own pet. The program grew to include caged birds and other rodents, such as hamsters and guinea pigs. Many of the patients participating in the program were required to work in the hospital's greenhouse to earn pet food and spending money for pet maintenance. Therefore, they made personal sacrifices to demonstrate caring behaviors. At the time of McCulloch's review, no systematic record keeping had been completed, but Lee reported strong positive changes among the patients participating in the program versus those patients who did not. Among the participating patients, there was a marked reduction in patient-to-patient and patient-to-staff violence, a marked reduction in medication
requested by the patients, and improved morale among staff and patients.

McCulloch (1983) reviewed similar pet programs at state prisons. Some of these failed due to poor supervision and implementation. The factors contributing to their failure were uncontrolled distribution of the pets, poor maintenance of the pets, and a resulting increase among the inmates' antagonism towards one another.

Peacock (1984) hypothesized that the inclusion of a pet during the initial therapy hour with adolescents would promote a more positive perception by the subject towards the interviewer. She also hypothesized that subjects experiencing a dog-present interview would report a greater degree of relaxation, a stronger liking of the interviewer, greater comfort with self-disclosure, and greater self-reported feelings of being understood. The subject pool consisted of 24 male adolescent boys residing at Northeastern Family Institute's Shelter Care Facility. This was an unlocked residential care facility for boys, most of whom were awaiting court trials and sentencing. The 12 participants in the experimental group underwent a dog-present interview, with the interviewer's goals being to establish a positive working rapport with the subject and to elicit diagnostic information. The 12 control subjects experienced the interview without the presence of a dog. The measures were a self-report questionnaire developed by the researcher in which reactions to the therapy hour were ranked. A content analysis was also conducted
for each interview to tabulate the number of affective statements, the number of resistant statements, and the amount of historically significant material verbalized by the subject. The results showed that "subjects receiving a dog-present interview reported a significantly higher degree of relaxation than subjects receiving a non-dog-present interview" (p. 84). For the subjects experiencing a dog-present interview, a significantly higher level of self-reported comfort was found [Chi Square (2) = 10.44, $p < .05$], and a significantly lower number of resistant statements were made [$t (11.26) = -3.26, p < .05$ (degrees of freedom based on a separate variance estimate)]. There were no differences in the self-reported liking of the interviewer, feelings of being understood by the interviewer, or the perceived liking of the subjects by the interviewer.

A study frequently cited in the literature focusing on the human-animal bond is the one year survival rate of patients discharged from a coronary care unit. Friedmann, Katcher, Lynch, and Thomas (1980) conducted a one year follow up study of patients discharged from a university hospital with a diagnosis of myocardial infarction or angina pectoris. An extensive social history had been obtained from each of the 92 subjects upon admission to examine their socioeconomic status, social support network, and living situation. Pet ownership was included in the intake. "Of the 39 patients who did not own pets, 11 (28 percent) died, whereas only 3 (6 percent) of the 53 pet owners died within 1 year" (p. 308). This
difference was found to be significant (Chi Square = 8.9, \( p < .002 \)).
The degrees of freedom were not reported for this statistical finding.
This statistic remained significant even when dog owners were not
included in the analysis to control for the possible superior health
status of dog owners due the greater physical effort required for a
dog's care. Of the owners of pets other than dogs, 0 of 10 died.
Survival was not significantly related to marital status or degree of
involvement in social activities. In a discussion of their results, the
authors contend that the human-animal relationship is different
from interactions among people in that relationships with animals
are devoid of strong negative emotions that are often present in
relations people have with one another, and the unconditional
acceptance quality in pets may have a strong inherent benefit for
people. The authors concluded that there is still little information on
the mechanisms responsible for pets' effects on human health.

Summary

Few empirical studies have been conducted to explore the
mechanisms of action responsible for, and associated with pet
facilitated therapy. Pet therapy is now an established mode of
therapy in the treatment of disturbed populations as cited above.
This overview of the literature provided theoretical explanations of
the observed benefits of having pets as an adjunct to treatment with
people of various age groups. Several of the empirical studies have
shown an inducement of a lowered anxiety state, a positive increase
in self-concept, and a greater perceived sense of happiness related to the presence of a companion animal. Pets have also been strongly correlated with a longer survival rate in heart patients. Case studies and surveys have discussed the process by which withdrawn, nonverbal patients have become more active in treatment interactions with therapists. Researchers have also found that people's perceptions of various situations may change when an animal is included in what is observed, they often assign more positive descriptors to their assessment of situations involving animals. Pets, because of their animated, non-threatening presence, are suggested to be helpful to the child in his achieving developmental tasks and in working through psychological conflicts. For patients experiencing difficulties characterized by disorganization, depression, and a lack of stimulation, animals can provide structure, goal oriented behavior and sensory stimulation.

The effect of a pet's accepting nature coupled with its ability to promote caring behavior in others has also been exemplified in the descriptions and studies conducted with incarcerated populations.
The goal of this study was to further identify the variables present in person-pet interactions that are desirable in therapeutic processes. Specifically, this study intended to examine one of the mechanisms suggested to be responsible for the observed benefits of including a pet in a therapeutic relationship. It is suggested that the pet can have a positive, tension-reducing effect for the patient during the initial contact with a therapist. In this study, it was predicted that subjects experiencing a dog-present interview would report a lower degree of situational anxiety compared to subjects in a dog-absent interview. It was hypothesized that the subjects experiencing the dog-present interview would show significantly lower post-test state anxiety scores compared to the subjects experiencing the dog-absent interview. Trait anxiety scores were not expected to deviate significantly between pre- and post-interview for either group.

The second hypothesis of this study stated that the experimental (dog-present) group would display significant temporal decreases in behavioral anxiety as the interview progressed, compared to the control (dog-absent) group. This hypothesis specified that changes in behavioral anxiety exhibited by subjects in both groups across segments of time, and the predicted decreases in anxiety, would be attributed to the dog's presence.
The third hypothesis stated the presence of a positive correlation among the experimental subjects between the degree of favorableness expressed toward pets, as measured by a pre-test attitude scale, and the frequency of positive behaviors displayed, as measured by a behavioral checklist. It is suggested that the degree of favorableness measured in the experimental subjects and the frequency of positive behaviors they display toward the dog would be strongly associated.

The fourth hypothesis stated that subjects in the experimental group would have significantly higher post-test scores on the attitudinal measure of favorableness expressed toward pets compared to the control group. It was predicted that the experimental group's interactions with the dog during the treatment condition would positively enhance the degree of favorableness they expressed toward pets compared to the control group. The control group's pre- and post-test scores were not expected to be significantly different.
METHOD

Subjects

A large undergraduate psychology class, consisting of 154 students, was approached to recruit the subjects who participated in this study. The class was required to complete a brief screening questionnaire (see Appendix B) for eligibility to rule out possible adverse reactions to the experimental situation, such as pet related phobias and allergies. Interested participants who were being prescribed mood-altering medications were excluded due to possible influence on anxiety measures. The final criterion was that the subject have a history devoid of previous therapy experience because this study was intended to target initial reactions to therapy-like exposure. The subjects' self-reported liking of pet animals was also questioned, using the Pet Attitude Scale (Templer, et al., 1981).

Sixty-six students (42.9%) did not meet at least one of the eligibility requirements, as listed above. The remaining 88 screening questionnaires were separated according to subject gender, then 8 males and 7 females were randomly selected from their respective categories. A match was found for each of these 15 subjects according to gender and their Pet Attitude Scale score. Each subject from the resulting matched pair was randomly assigned to either the experimental or control group as determined by the flip of a coin.
The 15 control subjects ranged from 17 to 24 years of age, with a mean age of 19.3 years. The group consisted of 14 Caucasians, and 1 was Hispanic. The 15 experimental subjects ranged from 18 to 23 years of age, with a mean age of 18.7 years. The group consisted of 13 Caucasians, and 2 Hispanics. The descriptive data are presented in Table 1.

**TABLE 1**

DEMOGRAPHIC AND MATCHING DATA FOR EXPERIMENTAL AND CONTROL GROUPS

<table>
<thead>
<tr>
<th></th>
<th>Control (Dog-Absent)</th>
<th>Experimental (Dog-Present)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Subjects</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>Female</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>Male</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Hispanic</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Caucasian</td>
<td>14</td>
<td>13</td>
</tr>
<tr>
<td>Mean Age</td>
<td>19.3</td>
<td>18.7</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>2.0</td>
<td>1.2</td>
</tr>
<tr>
<td>Mean PAS Score</td>
<td>108.5</td>
<td>108.1</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>9.1</td>
<td>8.8</td>
</tr>
</tbody>
</table>
Materials

Each subject was required to sign an information and release form prior to participation in this study (see Appendix A) which outlined the general purpose of the study, the subjects' right to decline further participation, and the basic tasks asked of them.

The State-Trait Anxiety Inventory (STAI), Form Y, (Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1983) was administered to each subject (see Appendix D). It is a 40 item self-report measure of what the authors term State-Anxiety and Trait-Anxiety. State-Anxiety is defined as "feelings of apprehension, tension, nervousness, and worry" (p. 2) as experienced by the person in a given moment. Trait-Anxiety refers to the same feelings, but defines their presence and degree characterologically, versus situationally. The STAI has been widely used in clinical assessments, screenings, and research with students, military personnel, and with medical and therapy patients.

Normative data have been collected from working adults, college students, high school students, and military personnel. The test-retest correlations for the college students are cited below in Table 2 (reprinted from Spielberger, et al., 1983, p. 13). The Trait-Anxiety scale correlations are consistent with one another and high for all subgroups. For the State-Anxiety scale, the subgroup correlations are low, inconsistent, and have a greater range. The low coefficients among the State-Anxiety scales reflect the "transitory" (p. 13) nature of state anxiety, while the relatively high trait anxiety correlations are more fixed and long-standing.
In developing the STAI, validity criteria were established through several procedures: comparison of the mean scores of various psychiatric groups with normal groups; comparison of normals' scores under varying degrees of stress; correlating the Trait-Anxiety scale with other anxiety measures, such as the IPAT Anxiety Scale, Taylor Manifest Anxiety Scale (TMAS), Affect Adjective Checklist (AAACL), and the Minnesota Multiphasic Personality Inventory scales (Spielberger, et al., 1983). Correlations between Trait-Anxiety and the TMAS ranged from .73 to .85, for the IPAT the correlations ranged from .75 to .77. Scale 7 on the MMPI

<table>
<thead>
<tr>
<th></th>
<th>1 Hour</th>
<th>20 Days</th>
<th>104 Days</th>
</tr>
</thead>
<tbody>
<tr>
<td>College Students*</td>
<td>N (r)</td>
<td>N (r)</td>
<td>N (r)</td>
</tr>
<tr>
<td>T-Anxiety</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Males</td>
<td>88</td>
<td>.84</td>
<td>38</td>
</tr>
<tr>
<td>Females</td>
<td>109</td>
<td>.76</td>
<td>75</td>
</tr>
<tr>
<td>S-Anxiety</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Males</td>
<td>88</td>
<td>.33</td>
<td>38</td>
</tr>
<tr>
<td>Females</td>
<td>109</td>
<td>.16</td>
<td>75</td>
</tr>
</tbody>
</table>

*Based on Form X
correlated .71 and .75 with State and Trait anxiety measures, respectively. The STAI correlations with the AACL were moderate, ranging from .52 to .58. These figures were reported by Spielberger et al (1983) after their review of correlational studies conducted by other researchers in normal and hospitalized neuropsychiatric populations.

The Pet Attitude Scale (see Appendix E) was developed to assess the degree of favorableness a person feels towards pet animals. Some studies have shown that the measured characteristics of pet owners were sometimes associated with the degree of self-perceived attachment the owners' felt towards their pets (Ory & Evelyn, 1979; Connell & Lago, 1984; Friedmann, et al., 1984). Therefore, the Pet Attitude Scale was administered to all subjects to control and account for individual variations in the degree of favorableness felt towards pets. This measure "was found to have a Cronbach's Alpha of .93 (p. < .001) and test-retest reliability of .92 (p < .001)" (p. 343). The authors sought to establish an original measure of attitude towards pets given the increase in the amount of literature and research devoted to studying person-pet relationships, and the absence of any structured scale to date. It is an 18 item scale using a 7 point Likert-type scoring system. These 18 items correlated .50 or greater with the total scale. Seven of the 18 items are scored inversely on a scale from 1 to 7, number 7 being the direction of a strong agreement with an item. Forty-three items were included at the beginning of the test's development. The 25 items that were discarded either did not correlate highly with the
total scale or correlated too highly with items on the Social Desirability Scale and measures of acquiescence. The 3 factors included in the content of the questions deal with joy of pet ownership, pets in the home, and love and interaction. Norms are unavailable for this scale, but its ability to differentiate two groups of people was tested by the authors' administration of the test to kennel workers and social work students. The kennel workers' scores were significantly higher ($t = 3.53$, $p < .01$) than the social work students. Examples for its use include Jenkins (1986) utilization of the scale as a criterion measure for her desired subject pool, and Connell and Lago's (1984) study in which they examined the relationship between pet attitude and the "perceived happiness of elderly pet owners" (p. 241).

The Behavioral Frequency Checklist (see Appendix F) was used during the interview with the experimental (dog-present) group. The checklist enabled the interviewer to obtain a frequency count of possible behaviors and interactions the subjects display toward the dog. The checklist was developed to measure individual differences in behavior exhibited by the experimental subjects that may be related to obtained differences in other measures used in this study. Tactile interaction with a dog has been suggested to enhance the reduction in anxiety in people (Peacock, 1984; Messent, 1983).

The behaviors expected to be exhibited by the subjects towards the dog were identified categorically: positive; indifferent; and negative. Behaviors in each category are in the forms of tactile, verbal, and visual expressiveness. Looking was a behavior common
to each category, but could be expressed in varied ways. Positive variations of looking were categorized as such when a subject's facial expression was consistent with observable characteristics of a favorable attitude towards the dog, such as smiling, or an appearance of liking. Within the category of negative behavior, looking was characterized by qualities associated with glaring, and being hostile in nature. Fearful looking was also in this category, being that it is a negative reaction to the dog. Questioning about the dog is another multiple category behavior. This behavior was assigned a category depending on the content of the question. A frequency count of "1" was given for each individual behavioral episode. One episode of one behavior was defined as separate from another when there was a clear and observable cessation of the first action. A single occurrence of indifferent behavior was defined as the absence of positive and negative behaviors during a 5 minute interval.

The Anxiety Behavior Checklist (see Appendix G) was also used to obtain a measure of behaviors suggestive of anxiety that were exhibited by subjects during the interview. The Checklist consisted of 5 behavioral categories: restlessness; disruption of speech; disclosures; facial expressiveness; and other. Restlessness was defined as behaviors characterized by shifting seated positions or posture, finger tapping, foot tapping, wringing of hands and tremulousness. Disruption of speech was defined by changes in speech flow, voice fluctuation, stuttering, long pauses, and word finding difficulty. Disclosures were direct or indirect statements made by the subjects indicating they are feeling nervous, anxious,
uncomfortable, or tense. Facial expressiveness was defined as expressions of worry, nervousness, uncertainty, hypervigilance, and tension. The checklist was divided into three 10 minute segments to provide a temporal means of examining possible fluctuations in observable anxiety.

The dog present during the interview with experimental subjects was a pedigreed Golden Retriever. She was 1 1/2 years old and chosen because of her friendly demeanor. She had belonged to the same family since several months of age; her name was Kaya. All usual veterinary care had been maintained.

Procedure

This study implemented a matched two-group design with pre- and post-testing. The subjects were matched for gender and their self-reported liking of dogs according to scores on the Pet Attitude Scale. They were randomly assigned to either the control group (dog-absent), or the experimental group (dog-present). Subjects in both groups underwent a 30 minute simulated clinical interview.

Immediately before the interview, all subjects were administered the State-Trait Anxiety Inventory, Form Y-1, in isolation, while the researcher waited in a room adjacent to the interview room. Upon their completion of the Inventory, the researcher entered the interview room with or without the dog. At the conclusion of the interview period, the Inventory and the Pet Attitude Scale were re-administered in isolation.
All interviews were videotape recorded. The videotapes provided an objective record from which the subjects' behavior toward the dog was measured using the Behavioral Frequency Checklist. The recordings were also used to measure the frequency of nervous behaviors exhibited by all subjects, as categorized by the Anxiety Behavior Checklist. The taping equipment was in the interview room and positioned within sight of the subjects, but not directly in front of them. The Behavioral Frequency and Anxiety Behavior Checklist were independently completed by two raters unaware of the hypotheses of the study. The raters were briefed in the usage of the checklists, and were provided with written guidelines and behavioral definitions by which to complete the checklists.

Interview with the Dog-present Group

At the start of the session, the interviewer focused the subject's attention to the dog and stated the following: "This dog's name is Kaya, she will be with us during the interview. She is a Golden Retriever that belongs to a friend, and seems to get along well with most everybody." No further reference to the dog was made by the interviewer, unless directly questioned by a subject. With the dog remaining unrestrained in the interview room, the interviewer then introduced his intent to talk of the subject's history and present
involvements in a procedure consistent with an initial clinical interview. Categories to be queried included (See Appendix C):

* Demographic information
* Family history
* Developmental information
* School history or employment history
* Medical history
* Miscellaneous

The interviewer allowed the subject to digress or give attention and verbalizations to the dog. After approximately 10 seconds, or shorter period of time if appropriate, the interviewer then continued inquiries.

Interview with Control Group

During the interview with control group subjects, the same initial clinical interview categories were queried, however, there was no dog present. At end of the 30 minute interview period, the subject completed post-testing in the manner described above.

Debriefing of Subjects

Debriefing occurred immediately following completion of the subjects' post-interview testing. The interviewer questioned subjects as to what they thought the study was examining. This was asked to provide the researcher with some idea as to how sensitized the subjects were to what was being questioned in the study given the content of the screening questions and the presence of the dog for
half the sample. The subjects were then informed of the general hypotheses of the study, and the manner in which it was tested. They were provided with a means by which to communicate with the researcher in the future should they desire knowledge of the study's outcome. The subjects were informed that the actual content of their disclosures given during the interview would not be used, studied, replicated, or stored in any way. Privacy and confidentiality issues involving their disclosures were followed as stated in the Consent Form. During the debriefing, if the researcher assessed that an individual subject was distressed by the interview, additional and more specific reassurances were offered. Should the experience of having made significant self-disclosures during the interview by a subject be judged to have caused them possible ongoing distress, specific information concerning counseling availability on campus would have been made available to that person. In the current study, there were no instances in which a subject was judged to have needed the intervention described above.
RESULTS

Hypothesis 1 stated that the experimental (dog-present) group would achieve a significant decrease between pre- and post-interview State-Anxiety scores compared to the control (dog-absent) group. The analysis of variance yielded an $F (1,28) = .01$, $p = .876$. The difference between the two groups was not significant, this hypothesis is not accepted. The dog's presence did not generate a reduction of situational (State) anxiety experienced by the experimental group during the simulated clinical interview. The statistical data are presented in Table 3.

TABLE 3
ANOVA SUMMARY
FOR STATE ANXIETY SCORES

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dog absent/present</td>
<td>1</td>
<td>2.02</td>
<td>0.01</td>
<td>.876</td>
</tr>
<tr>
<td>Anxiety pre/post</td>
<td>1</td>
<td>268.82</td>
<td>8.61</td>
<td>.007*</td>
</tr>
<tr>
<td>Dog x Anxiety</td>
<td>1</td>
<td>0.42</td>
<td>0.01</td>
<td>.875</td>
</tr>
</tbody>
</table>

*significant
A significant effect for State-Anxiety was achieved within groups, $F (1,28) = 8.61, p = .007$. Both the experimental and control groups experienced a decrease in situational anxiety post-interview,

**TABLE 4**

MEANS AND STANDARD DEVIATIONS OF STATE-TRAIT ANXIETY INVENTORY MEASURES

<table>
<thead>
<tr>
<th></th>
<th>Control Group (Dog Absent)</th>
<th>Experimental Group (Dog Present)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>State-Anxiety</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-interview</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$M$</td>
<td>34.1</td>
<td>34.7</td>
</tr>
<tr>
<td>$SD$</td>
<td>8.7</td>
<td>11.3</td>
</tr>
<tr>
<td>Post-interview</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$M$</td>
<td>30.1</td>
<td>30.3</td>
</tr>
<tr>
<td>$SD$</td>
<td>8.5</td>
<td>8.8</td>
</tr>
<tr>
<td><strong>Trait-Anxiety</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-interview</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$M$</td>
<td>35.4</td>
<td>36.2</td>
</tr>
<tr>
<td>$SD$</td>
<td>8.6</td>
<td>9.5</td>
</tr>
<tr>
<td>Post-interview</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$M$</td>
<td>32.7</td>
<td>33.8</td>
</tr>
<tr>
<td>$SD$</td>
<td>8.4</td>
<td>9.4</td>
</tr>
</tbody>
</table>
after having shown no significant variation from each other on their pre-interview measures (Table 4).

The first hypothesis also stated that Trait Anxiety would remain unchanged for all subjects. However, this measure of a characterological type of anxiety showed a significant change pre- to post-interview within the groups, $F(1,28) = 18.02, p = .000$. Both groups obtained a lower post-interview Trait Anxiety score compared to their pre-interview score (Table 5).

**TABLE 5**

ANOVA SUMMARY FOR TRAIT ANXIETY SCORES

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dog absent/present</td>
<td>1</td>
<td>5.40</td>
<td>0.03</td>
<td>.836</td>
</tr>
<tr>
<td>Anxiety pre/post</td>
<td>1</td>
<td>72.60</td>
<td>18.02</td>
<td>.000*</td>
</tr>
<tr>
<td>Dog x Anxiety</td>
<td>1</td>
<td>0.60</td>
<td>0.15</td>
<td>.703</td>
</tr>
</tbody>
</table>

*significant

Hypothesis 2 stated that the experimental group would show a significant and progressive decrease in behavioral anxiety during the interview compared to the control group. The obtained data (Table 6) were tested using an analysis of variance, and produced an $F(1,28) = 1.81, p = .186$. This hypothesis was not accepted. No
decrease in behavioral anxiety can be attributed to the dog's presence. The statistical data are presented in Table 7.

### TABLE 6
**MEANS AND STANDARD DEVIATIONS FOR ANXIETY BEHAVIOR**

<table>
<thead>
<tr>
<th>Anxiety Behavior</th>
<th>Control Group (Dog Absent)</th>
<th>Experimental Group (Dog Present)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Control Group (Dog Absent)</td>
<td>96.4*</td>
<td>32.9</td>
</tr>
</tbody>
</table>

*sum of three 10 minute segments

### TABLE 7
**ANOVA SUMMARY FOR ANXIETY BEHAVIOR ACROSS THREE 10 MINUTE SEGMENTS**

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dog absent/present</td>
<td>1</td>
<td>656.10</td>
<td>1.81</td>
<td>0.186</td>
</tr>
<tr>
<td>Temporal anxiety</td>
<td>2</td>
<td>224.34</td>
<td>2.80</td>
<td>0.068</td>
</tr>
<tr>
<td>Dog x Temporal Anxiety</td>
<td>2</td>
<td>87.43</td>
<td>1.09</td>
<td>0.344</td>
</tr>
</tbody>
</table>
Hypothesis 3 utilized a correlation analysis to test for the association between pet attitude (Table 8) and the frequency of positive behaviors (Table 9) exhibited by the experimental subjects. A positive, but non-significant association was reached, $r = +.273$ ($p = .326$).

### TABLE 8
MEANS AND STANDARD DEVIATIONS FOR THE PET ATTITUDE SCALE

<table>
<thead>
<tr>
<th></th>
<th>Control Group (Dog Absent)</th>
<th>Experimental Group (Dog Present)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pre-Interview</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>M</strong></td>
<td>108.5</td>
<td>108.1</td>
</tr>
<tr>
<td><strong>SD</strong></td>
<td>9.1</td>
<td>8.8</td>
</tr>
<tr>
<td><strong>Post-Interview</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>M</strong></td>
<td>108.5</td>
<td>109.4</td>
</tr>
<tr>
<td><strong>SD</strong></td>
<td>8.3</td>
<td>8.1</td>
</tr>
</tbody>
</table>

Interrater reliability varied between the 2 checklists. A correlation of $r = +.926$ ($p = .000$) was reached on the Behavioral Frequency Checklist measuring interactions between subjects and the dog. The interrater correlation for the Anxiety Behavior Checklist was significant, $r = +.504$ ($p = .000$).
Hypothesis 4 used a 2 x 2 analysis of variance to examine pre- and post-interview changes in pet attitude for both groups (Table 10). It was suggested that the subjects receiving a dog-present interview would show a significant increase on the measure of pet attitude, indicating an increase in the degree of favorableness felt toward pets. No significant increase was achieved, $F(1,28) = .50$, ($p = .491$. The descriptive data for this measure are presented in Table 8.
### TABLE 10
ANOVA SUMMARY FOR PET ATTITUDE CHANGE

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dog absent/present</td>
<td>1</td>
<td>96.27</td>
<td>0.49</td>
<td>.497</td>
</tr>
<tr>
<td>Attitude pre/post</td>
<td>1</td>
<td>72.60</td>
<td>0.50</td>
<td>.491</td>
</tr>
<tr>
<td>Dog x Attitude</td>
<td>1</td>
<td>72.60</td>
<td>0.50</td>
<td>.491</td>
</tr>
</tbody>
</table>
DISCUSSION

The purpose of this study was to assist in defining the effects of including a pet animal in clinical intervention, and to validate similar research completed in the area of pet therapy. The results of this study will be reviewed briefly in this section, followed by a procedural critique targeting the findings. Implications of this study, and suggestions for future research are then presented.

The results of this study indicated that the presence of the dog during a simulated clinical interview with a college population had no significant effect upon anxiety, or the degree of post-test favorableness felt towards pets. Anxiety was measured using two instruments: an objective self-report questionnaire (S.T.A.I.), and a behavioral anxiety checklist developed by the researcher and completed by independent raters. Significant effects were achieved for both groups with a decrease in State- (situational) and Trait- (characterological) Anxiety, as measured by the S.T.A.I. That is, subjects in both groups endorsed test items indicating increased feelings of relaxation and calmness immediately after having completed the interview. The independent ratings of behavioral anxiety were consistent with the decrease in self-reported anxiety, but not to a significant degree. This consistency lends support for inter-test reliability.
The absence of a significant treatment effect for the dog's presence may be due to several methodological flaws. First, the dog's presence may not have been manipulated strongly enough to impact the sample's level of anxiety. At the start of each interview, the dog was introduced and the subjects were told that she would be present throughout the interview session. In contrast, Peacock's study (1984) initially involved the subject and dog in several tasks prior to any data collection from the subject. This may have enhanced the treatment effect, and allowed the dog's influence to be felt more strongly by the subject than in this study. Peacock's procedure also allowed the interviewer to digress and make references to the dog when she judged it appropriate to whatever issue was being discussed. The current study predetermined the dog's role as simply being present and allowing spontaneity between subject and pet should it occur, unencouraged by the interviewer.

Part of the sample used in the present study was not typical of a college population (Table 11). As a group, the females in both the experimental and control group, had pre-interview State Anxiety scores that were found to be significantly different from the normative population, \( t (13) = -3.84, p = .002 \), but not from each other. The suggested impact of having included this biased sample in this study is that there was a decrease in the potential to obtain a significant treatment effect between the experimental and control groups. The females used in this study were balanced between both groups. The females in the experimental group were not
<table>
<thead>
<tr>
<th></th>
<th>S.T.A.I. Norms</th>
<th>Present Study</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Males</td>
<td>Females</td>
</tr>
<tr>
<td>State Anxiety</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>296</td>
<td>481</td>
</tr>
<tr>
<td>M</td>
<td>36.47</td>
<td>38.76</td>
</tr>
<tr>
<td>SD</td>
<td>10.02</td>
<td>11.95</td>
</tr>
<tr>
<td>Trait Anxiety</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>324</td>
<td>531</td>
</tr>
<tr>
<td>M</td>
<td>38.30</td>
<td>40.40</td>
</tr>
<tr>
<td>SD</td>
<td>9.18</td>
<td>10.15</td>
</tr>
</tbody>
</table>

*Spielberger, et al., 1983
**significant

significantly different from the normative sample, $t (6) = -2.36, p = .055$. The females in the control group were significantly different from the normative sample, $t (6) = -2.997, p = .024$. Due to these unusually low pre-interview measures, it is proposed that any further decrease that may have been obtained as a result of the treatment, was minimized.
This non-clinical population was likely well adjusted, and tending not to experience high levels of State-Anxiety, even under unusual conditions. This would reduce the possibility of finding significant variation under differing conditions. A sample with a higher level of measured anxiety than this study recruited, as frequently found in a clinical population, may have a greater need to utilize the qualities of a pet in therapy as described earlier in the literature reviewed.

Another possibility for failure to support the hypotheses addressing anxiety focuses on the reliability of the S.T.A.I.. The measure of Trait-Anxiety was found to significantly differ from the pre- to post-interview situations for both groups, although it was stated by Spielberger, et al. (1983) to have a high test-retest correlation (see Table 1). The finding from this study of a significant difference in Trait scores, suggests that the subjects may have been unclear as to how to answer this set of questions, or that the Trait measure does not provide an accurate score for what it was intended to measure.

Attitudinal change toward pets was not effected by the experimental condition; the presence of a pet neither increased nor decreased favorableness felt toward pets. It is suggested that pet attitudes remain stable, given the consistency of pre- and post-measures obtained on the Pet Attitude Scale (see Tables 8 and 10) with a 4 to 6 week lapse between administrations. This consistency may also show again that the treatment effect of the dog’s presence did not raise the favorability felt by the subjects toward her.
Attitude toward and perception of the interviewer may have been appropriate content for an additional measure in this study. The measures used in this study questioned anxiety specific to the time of the interview, before and after, and did not necessarily address the level of anxiety aroused by the interviewer or the level of comfort experienced making self-disclosures to him. A supplemental measure that directly questioned how the interviewer was perceived by both groups would have aided in identifying how the interviewer's association with the dog effected subject attitudes, in addition to their anxiety levels.

Prior research related to pet therapy had been conducted primarily with extreme samples, such as the very young, the very old, and the institutionalized. It is suggested that pet therapy may have limited applicability for populations that are relatively high functioning, or devoid of developmental conflicts involving autonomy, companionship, or healthy structure in daily behaviors. Establishing a standard assessment procedure in which similar dependent measures are used for evaluating the effects of a pet's presence in treatment across different population samples is suggested to be an appropriate course for future research. Equivalent scales that identify affective, perceptual, and behavioral change are suggested to be the most appropriate given they are common among much of the literature reviewed. The criteria for the clinical application of pet therapy in a definitive population would then be more certain than a haphazard approach.
At the time of debriefing, subjects had only a vague idea of what was actually being measured and studied. None of the subjects in either group accurately surmized that the presence, or absence, of the pet was being investigated in relation to anxiety. A subject's typical response to the researcher's inquiry of what they suspected revealed that the study was related to pets in general, and not anxiety, treatment, or a therapist-client relationship.

By chance, all subjects had a history of pet ownership. Seventeen of thirty subjects owned an unspecified type of pet at the time of the study. Current ownership did not have a significant effect upon State-Anxiety, $F(1,24) = 1.86, p = .183$. This analysis was conducted after randomly discarding the scores of 4 of the 17 subjects currently owning pets to obtain an equal number of subjects.
APPENDIX A

INFORMATION AND CONSENT FORM

You are being asked to participate in a Master of Science thesis project by clinical psychology graduate student, Kenneth Weigand, at the University of Central Florida. This research is under the supervision of Burt Blau, Ph.D. The project is designed to study the interaction among pet animal attitude, and different interviewing situations and the way you feel about yourself and the interview process.

All who participate will be asked to complete a 30 minute interview, and to complete brief inventories consisting of questions related to your experience. The process will take approximately 45 minutes for each participant.

No individual will be personally identified on any of the written materials for the project. However, the information gathered will be confidential and only the examiner, independent raters associated with the department, and faculty committee members at the University of Central Florida will have access to this information. All interviews will be video tape recorded for later data analysis. At the conclusion of the study, the tapes will be erased.

At the end of this project, Kenneth Weigand will provide you with a summary description and purpose, and if you so desire, the results will be sent to you should you indicate your address.

You may choose not to respond to any question during the interview, and you may terminate your participation in this study at any time, by saying so, without negative consequences. Please feel free to ask questions now regarding your participation in this project.

_________________________  _______________________
Signature                      Date
APPENDIX B
PARTICIPANT SCREENING QUESTIONNAIRE

Please complete the following items if you have read and signed the information and release form. Be sure to answer all the questions.

1. State your: Age ________
   Gender ________
   Race ________

2. Do you suffer from pet animal related allergies? Yes No
3. Do you suffer from pet animal related fears/phobias? Yes No
4. Do pet animals cause you any type of discomfort? Yes No
5. Are you currently taking mood altering medications? Yes No
6. Are you currently engaged in counseling or psychotherapy, or have you ever been? Yes No
7. Do you currently own a pet? Yes No
8. Have you ever owned a pet? Yes No

Participant Name: ________________________________

Phone Number(s): ________________________________

If you cannot be contacted by phone, what is your mailing address?

________________________________________________________________________

________________________________________________________________________

Signature ___________________________ Date __________
APPENDIX C
INTERVIEW OUTLINE

I. DEMOGRAPHIC INFORMATION
   A. Full name
   B. Date of birth
   C. Social security number
   D. Address(es)
      1. Past
      2. Present
      3. Duration of occupancy
   E. Marital status

II. FAMILY HISTORY
   A. Parent information
   B. Sibling information
   C. Significant events
      1. Births
      2. Deaths
      3. Separations
      4. Relocations
      5. Traumatic/memorable events
   D. Spouse or significant other(s)
   E. Children

III. DEVELOPMENTAL INFORMATION
   A. Birth place
   B. Physical/developmental milestones
      1. Speech and motor tasks
      2. Socialization
      3. Sexual development
      4. Spiritual development

IV. SCHOOL AND EMPLOYMENT HISTORY
   A. Academic performance
      1. Elementary
2. High school
3. College

B. Employment experiences
   1. Types of employment
   2. Employment goals

V. MEDICAL HISTORY
   A. Birth complications
   B. Childhood illnesses
   C. Adult illnesses
   D. Traumas
   E. Substance use
   F. Physical activities

VI. Miscellaneous
   A. Hobbies and interests
   B. Socializing habits
APPENDIX D
SAMPLE ITEMS FROM THE
STATE-TRAIT ANXIETY INVENTORY*
FORM Y-1

Directions: A number of statements which people have used to describe themselves are given below. Read each statement and then blacken in the appropriate circle to the right of the statement to indicate how you feel right now, that is, at this moment. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your present feelings best.

1. Not At All
2. Somewhat
3. Moderately
4. Very Much So

1. I feel calm
2. I feel secure
7. I am presently worrying over possible misfortunes
13. I am jittery
5. I feel at ease
17. I am worried

1 2 3 4
1 2 3 4
1 2 3 4
1 2 3 4

*Obtained with permission from Consulting Psychologists Press
APPENDIX E

PET ATTITUDE SCALE ITEMS AND KEY*

Response choices for each of the following items:

1 - Strongly disagree
2 - Moderately disagree
3 - Mildly disagree
4 - Neither agree, nor disagree
5 - Mildly agree
6 - Moderately agree
7 - Strongly agree

Key

+ 1. I really like seeing pets enjoy their food.
+ 2. My pet means more to me than any of my friends.
+ 3. I would like a pet in my home.
- 4. Having pets is a waste of money.
+ 5. Housepets add happiness to my life (or would if I had one).
- 6. I feel that pets should always be kept outside.
+ 7. I spend time every day playing with my pet (or would if I had one).
+ 8. I have occasionally communicated with a pet and understood what it was trying to express.
- 9. The world would be a better place if people would stop spending so much time caring for their pets and started caring more for other human beings instead.
+ 10. I like to feed animals out of my hand.
+ 11. I love pets.
- 12. Animals belong in the wild or in zoos, but not in the home.
- 13. If you keep pets in the house you can expect a lot of damage to furniture.
- 15. Pets are fun but it's not worth the trouble of owning one.
+ 16. I frequently talk to my pet.
- 17. I hate animals.
+ 18. You should treat your housepets with as much respect as you would a human member of your family.

*Obtained from Templer, Salter, Dickey, and Baldwin, 1981.
APPENDIX F

BEHAVIORAL FREQUENCY CHECKLIST

Subject's first name:
Subject number:

Subject's approach behavior towards dog:

Touching
Looking
Talking
Playing
Questioning about dog
Call/nurturant noises
Other

Total ______

Indifferent behavior towards dog:

(5 minute intervals)
Other

Total ______

Negative behavior towards dog:

Avoiding
Aggressing
Looking
Questioning about dog
Other

Total ______
## APPENDIX G

### ANXIETY BEHAVIOR CHECKLIST

**Initial 10 minutes:**

<table>
<thead>
<tr>
<th>Category</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Restlessness</td>
<td></td>
</tr>
<tr>
<td>Disruption of Speech</td>
<td></td>
</tr>
<tr>
<td>Disclosures</td>
<td></td>
</tr>
<tr>
<td>Facial Expressions</td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td></td>
</tr>
</tbody>
</table>

**Middle 10 minutes:**

<table>
<thead>
<tr>
<th>Category</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Restlessness</td>
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<tr>
<td>Disruption of Speech</td>
<td></td>
</tr>
<tr>
<td>Disclosures</td>
<td></td>
</tr>
<tr>
<td>Facial Expressions</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
</tr>
</tbody>
</table>

**Final 10 Minutes:**

<table>
<thead>
<tr>
<th>Category</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Restlessness</td>
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</tr>
<tr>
<td>Disruption of Speech</td>
<td></td>
</tr>
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<td>Disclosures</td>
<td></td>
</tr>
<tr>
<td>Facial Expressions</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
</tr>
</tbody>
</table>

**Subtotals:**

<table>
<thead>
<tr>
<th>Time</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial</td>
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</tr>
<tr>
<td>Middle</td>
<td></td>
</tr>
<tr>
<td>Final</td>
<td></td>
</tr>
</tbody>
</table>

**Grand Total**

<table>
<thead>
<tr>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>
REFERENCES


