

Running Head: EFFECTS OF AAT ON PEDIATRIC HOSPITAL PATIENTS

The Short-Term Effects of Animal Assisted Therapy on Pediatric Hospital Patients.

Aislinn Cooper & Griffin Liford

Hanover College

Senior Research Project

Winter 2010

Abstract

Animal Assisted Therapy (AAT) is a growing field in the treatment of various physical and mental ailments. Proponents of long-term AAT claim that it is an effective method of decreasing patient's depression and anxiety, as well as improving their self-esteem. The purpose of this study was to assess whether short-term AAT is an effective alternative. We hypothesized that participants would report lower levels of depression and anxiety and improved levels of self-esteem following interaction with the AAT companion animal. Eighteen participants at a children's hospital were administered questionnaires to measure their self-reported depression, anxiety, and self-esteem levels. After answering the first group of questionnaires, observational data such as the type of interaction with the animal (petting vs. playing), the extent of interaction with the animal handler, as well as the duration of the visit was collected while the participants interacted with an AAT companion animal for approximately 10 minutes. Following the AAT session, the participant answered another set of inventories that measure depression, anxiety, and self-esteem levels. Although the experimental hypothesis was not supported by our data, we did find significant results for improved affect of the child, indicating that short-term AAT could still be used in non-traditional settings where long term AAT isn't possible, e.g., pre-op situations in hospitals, immediate interventions by first responders following traumatic events, as well as in the school setting. Additionally, through analysis of our observational data, we were successful in finding future directions to be followed.

The Short-Term Effects of Animal Assisted Therapy on Pediatric Hospital Patients

The desire for human interaction with animals has been around as long as civilization. Some possible reasons for human's longing to be with animals could include the feeling of being needed, as well as the safety and security that comes with having an animal companion. In addition, they provide love and comfort without judgement or criticism.

Animals were first used therapeutically in the York Retreat in 1792. This retreat was founded by the Quakers and was one of the first institutions to treat the clinically insane humanely. Part of the treatment included taking care of small animals such as birds and rabbits. Taking care of the animals was believed to teach responsibility, and help the residents of the York Retreat cope with stress. (Netting, Wilson, & New, 1987).

Additionally, claims have been made since Freud's time that animals helped patients feel comfortable and aided in therapy sessions. Freud believed his dog Jo-Fi had a 'special sense' that could accurately tell a patient's character, and he brought her along to all his therapy sessions. In addition, an American child psychologist, Boris Levinson, used his dog, Jingles in his therapy sessions. He found that Jingles helped the children relax when they first came to the session, and also served as a centerpiece for initial conversation. Levinson coined the term, 'pet therapy' in 1964 (Christianson, 2007). Though this relationship with animals has been around almost as long as people, there has not been much empirical research done until fairly recently.

Animal assisted therapy is “designed to promote improvement in human physical, social, emotional, and/or cognitive functioning” (Delta Society). There are three major types of animal assisted therapy. These include dolphin assisted therapy, equine therapy, and animal assisted therapy using companion animals.-

Dolphin assisted therapy is used primarily for individuals with developmental disorders or terminal illnesses. With this therapy, the patient has the opportunity to swim with dolphins, either captive or wild, or to interact with them from land or a boat (Marino & Lilienfeld, 2007). These interactions have long been thought to have positive emotional effects for depressed patients or patients with disorders such as Down syndrome, autism, AIDS or cancer (Williamson, 2008). However, in recent years, it has been found that dolphin assisted therapy is not as beneficial as claims make it out to be. Marino and Lilienfeld carried out a review of current literature and found that most studies had few significant results and had multiple threats to both internal validity and construct validity (Marino & Lilienfeld, 2007).

Equine therapy involves interacting with horses in ways such as handling, grooming, riding & jumping them (Meinersmann, Bradberry & Roberts, 2008). Ewing, MacDonald, Taylor and Bowers (2007) performed a study, examining at the effects of equine therapy on youth with emotional disorders. The researchers hypothesized that self-esteem & empathy would increase and depression & loneliness would decrease; however, they found no significant changes in any of the variables. Meinersmann, et. al. (2008) conducted a similar study on the effects of equine therapy on women who had been abused. This study yielded very different

results. They found that equine therapy decreased depression and increased a sense of self control and self-esteem.

For our study, we used pet therapy, and this is what we are referring to when we talk about animal assisted therapy in the remainder of this paper.

Studies looking at the long term effects of animal assisted therapy using companion animals have shown evidence to support that there are numerous benefits of these therapy treatments involving interactions between companion animals and patients. These therapy sessions can include interactions with cats, dogs, birds, and even ferrets depending on the specific focus of the therapy. Banks and Banks (2005) conducted a study in which elderly patients living in long term care facilities were randomly assigned to receive individual sessions of animal assisted therapy, or to receive animal assisted therapy in groups of 2-4. All the participants had scored as significantly lonely on the UCLA loneliness scale. The residents interacted with a therapy dog for 30 minutes, once a week for 6 weeks. The researchers found that animal assisted therapy was beneficial, and it was more beneficial for those who had reported as more lonely, in addition, it was found that individual sessions of animal assisted therapy can be more effective in decreasing loneliness in elderly patients, than can group sessions of animal assisted therapy. Additionally a study carried out in Japan by Kawamura, Niiyama, and Niiyama (2007) found a decrease in impaired orientation and emotional liability in institutionalized elderly people after six months of participating in an animal assisted therapy program. The therapy animals were brought into a long-term residence facility twice a month and the residents could play with and hold the dogs as they pleased. Similarly, a study conducted by le Roux

and Kemp (2009) found a decrease in anxiety and depression levels in elderly patients who were participating in a six-week animal assisted therapy program, whereas the control group had no significant change between pre and post test. A study was carried out by Woolley (2005) on the effects of animal assisted therapy on adolescents with childhood trauma. Animal assisted therapy was added to the adolescents usual psychotherapy sessions for 9 weeks after which, researchers found a similar reduction in anxiety that le Roux and Kemp found in the elderly.

Cobaleda-Kegler (2006) carried out a study with female juvenile offenders in which an experimental group was given rescued cats to take care of to get them ready to be adopted by a 'forever family'. The researchers found that interacting with and taking care of the cats significantly increased self-esteem in these girls.

All of these studies represent the effectiveness of long-term animal assisted therapy sessions, but do not address the possibility of obtaining significant results through short-term interactions.

While there has been extensive research on the long term effects of animal assisted therapy, there has been less research on short term effects of animal assisted therapy, with the majority of such research dealing with health psychology. Animal assisted therapy where the therapy sessions are conducted on a short term basis has shown decreases in blood pressure immediately following interactions with companion animals (Somerville et al., 2008). This study looked at whether there would be a difference in reaction to holding a dog versus holding a cat, and also whether there would be a gender difference, however they found the same decrease in blood pressure for both males and females regardless of whether they were

holding a dog or a cat. Similarly, a research study was conducted on 70 hospitalized children by Kaminski, Pellino and Wish. Following interaction with a therapy animal, the patients showed a decrease in heart rate, and improved mood & positive affect (Kaminski, Pellino & Wish, 2002). A study done by Terpin (2004) on at-risk youth found a need for more research on the effects of short-term interactions with animals. This study was actually a long term study on the effects of the human-animal bond on socio-emotional functioning. In an attempt to increase the salience of the human-animal bond, the youth worked at the local humane society. There were no significant results regarding the hypothesis that a strong human-animal bond would improve socio-emotional functioning, however, Terpin believed that the youth had improved self-esteem following their interactions with the animals at the humane society.

It is important to study the effects of short-term interactions as well as long-term interactions because there are many situations in which animal assisted therapy could be very helpful, but where it just isn't feasible to have long-term programs in place. These could include any situation in which people are coming and going quickly, like hospital patients, or at scenes of traumatic events such as fires, natural disasters or victims of crimes. Given that the majority of the research on the short-term effects of AAT therapy is primarily in health psychology rather than dealing with the emotional well-being of patients, it became evident that there was a void in research, and it is the goal of our inquiry to hopefully fill this void.

It is because of this extensive history of human-animal relationships, in addition to the lack of in-depth research to support the effectiveness of animal

assisted therapy as a short-term alternative therapy, that we decided to explore how useful it is in applied settings in regards to its short term effects on patient's emotional well-being. Furthermore, because there has been evidence to support that animal assisted therapy has an affect on improving people's health, we wanted to investigate its short-term effects on patients' emotional well-being. Although we are investigating the short-term effects of animal assisted therapy on the emotional well-being of hospital patients rather than the long-term effects, the implications of finding significant results can lead to the application of animal assisted therapy in situations other than those used today.

We hypothesize that hospital patients will report lower levels of anxiety and depression, as well as higher levels of self-esteem following their interaction with a companion animal. We plan on obtaining our data by administering a variety of inventories before and after each patient's interaction with an animal. The variables we chose have been shown to have positive results in long terms studies as we can see from those conducted by le Roux & Kemp (2009), Woolley (2005) and Cobaleda-Kegler (2006), so we were interested to see if short term interactions would produce the same results.

Method

Participants

Our participants consisted of 9 male and 9 female inpatient hospital patients from Kosair Children's Hospital between the ages of 8 and 17. Fifteen of the participants were Caucasian, two were African American, and one participant was Hispanic.

Materials

Through the course of our study, we administered three questionnaires: the Reynolds Child Depression Scale (William Reynolds), the Rosenberg Self-Esteem Inventory (Morris Rosenberg), and the State Trait Anxiety Inventory for Children (Spielberger et al.).

The Reynolds Child Depression Scale consists of 30 items. The first 29 questions are on a 4-point likert scale ranging from ‘almost never’ to ‘all the time’. The last question consists of 5 ‘smiley faces’ ranging from sad to happy.

The Rosenberg Self-Esteem Scale consists of 10 statements such as “On the whole I am satisfied with myself” and the participant responds on a four-point likert scale from strongly agree to strongly disagree.

The State Trait Anxiety Inventory for children consists of 20 statements about how the patient feels at that point in time.

Each questionnaire was split in half to make two new forms, one with the even numbers of each questionnaire, and one with the odd numbers, so that the participant would receive one half of each questionnaire prior to the therapy session and the second half following the therapy session. We labeled the new forms ‘Questionnaire A’ (Appendix 6) and ‘Questionnaire B’ (Appendix 7) and alternated the order in which the participants received them to limit order effects.

This test battery took approximately 15 minutes total for the participant to fill out not including the time spent interacting with the animal.

Through the use of an observational data sheet we constructed, we also conducted qualitative observations of the nature of the patient/animal. Specifically,

we recorded data pertaining to the overall quality of interaction between the participant and the therapy animal, the behavior of the participant, as well as the behavior of the therapy animal. All of the data recorded on the observation sheet was scored on a 1-5 Likert scale, with a score of 1 being the lowest and a score of 5 being the highest. This allowed us to collect qualitative data to interpret in addition to the statistical information we obtained from our questionnaire battery.

Procedure

Between the months of February and April, we shadowed a pet therapy group called WAGS. They are a not-for profit group that is based out of Louisville, KY, and work with a number of facilities including many local hospitals, nursing homes and correctional facilities. One of the hospitals they visit is Kosair Children's Hospital, which is where we shadowed them for a total of 5 separate visits. This organization utilizes handler-animal teams on their visits to the hospital, with each visit lasting approximately an hour.

To 'use' WAGS and gain access to the hospital patients, after obtaining permission from our institution's IRB, we then had to present our research proposal to WAGS to gain their approval. The next step following that was to obtain permission from the hospital, which, because of the research relationship between the hospital and the University of Louisville, involved obtaining approval from that university's IRB. Additionally, given that our research involved hospital patients, we were required to undergo HIPAA and CITI certification. While this was a very tedious undertaking, it was an enlightening experience.

When we were finally able to begin conducting our research, we experienced

very few difficulties. Before any interaction with the participants, a Child-life liaison approached members of our target population and asked if they would be interested in meeting with the therapy dog and, if so, participating in our study. We then met with those who were interested in participating in the study to obtain informed consent (Appendix 2) from the legal guardians before getting informed assent (Appendix 3) from each participant. Participants were given the first questionnaire (Appendix 4-5) and were asked to complete it before the dog entered. Once the first questionnaire was filled out, the pet handler from WAGS entered the patient's room with the therapy dog and the participant spent an average of 10 minutes interacting with the therapy animal. It was during this time that the observational data sheet (Appendix 8) was filled out with the various qualitative data we selected to focus on. Following the therapy session the participants were given the second questionnaire to complete before being debriefed (Appendix 4-5).

Upon obtaining the completed questionnaires, all of the data forms were coded to ensure anonymity and the results were converted into numerical data and interpreted by running both pre and post dependent *t*-Tests.

Results

Following an interaction with a therapy dog, we expected the participants to report a decrease in anxiety and depression and an increase in self-esteem, however, counter to our hypothesis, we found no significant results regarding anxiety ($t(17) = .50, p = .62$), depression ($t(17) = .93, p = .36$) or self-esteem ($t(17) = .09, p = .93$). This led us to reject our hypothesis.

After looking at our qualitative data, we analysed the affect of the child

before the therapy dog entered and as it was leaving, and as shown in Figure 1 below, found the increased affect of the child following the interaction with the therapy dog to be statistically significant at $t(17) = 3.7, p = .002$.

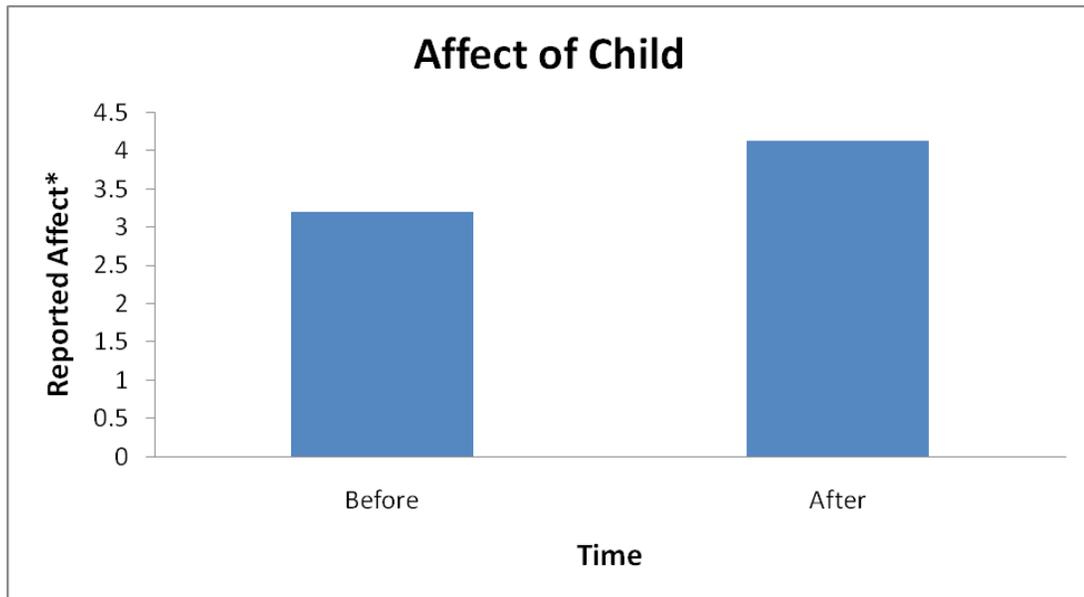


Figure 1: Affect of the child before and after interacting with the therapy dog. (Dependent $t(17) = 3.7, p = .002$)

In addition to the results from the statistical analysis of the scores of the child's affect both pre and post animal interaction, the data collected from the observational data sheets showed other noteworthy qualitative trends. During nearly every interaction, we saw that the family members in the room seemed to benefit from seeing the dog almost as much as the patient. Through review of the notes taken in the observational data sheets during the interaction with the therapy animal, we found that the mothers in particular appeared to show noticeable improvements in their affect. Although we were not specifically recording the effects of the dog on those around the patient, we believe the effect was just as great on the mother's as it

was on the patients themselves.

Another important factor pertaining to how much the patients seemed to enjoy the pet therapy session, was which dog they were seeing and what the dog did. There were 4 different dogs that were used throughout our visits with WAGS to Kosair Children's Hospital, of these only one dog did a lot of tricks, two of the dogs knew a couple of tricks and one dog did no tricks. The participants who interacted with the dog who did a lot of tricks seemed to enjoy the session a lot more than those who interacted with the dog that did no tricks – though these children did enjoy petting and playing with the dog. Some of the children who interacted with the dog who did no tricks asked the handler to make her do some tricks and were clearly disappointed when they were told she didn't do tricks. The results of the post-interaction questionnaire could have varied based on which dog was used.

The participants also talked to the handlers during their interaction with the therapy dog. They talked about their dogs at home, and a few of them discussed their dogs that they had recently lost. The older participants seemed to enjoy talking to the handler as much as they did interacting with the dog. The fact that seeing the dog brought up memories of their own pets could have effected the post-interaction results depending on whether the memories were positive or negative. All of these possible effects could be studied in future research.

Discussion

As mentioned previously, although we were unable to obtain significant results concerning depression, anxiety, or self-esteem,

we found the increase in the affect of the child following the interaction with the therapy animal to be significant. It is important to note that these scores of the child's affect were recorded by the researcher and were thus susceptible to observer bias regardless of any efforts made to be as impartial as possible. Even with the possibility of observer bias, it can be argued that with children in particular, physical displays of emotion (i.e. facial expressions) can be more telling than directly asking a child to reflect on his or her feelings as is done through the questionnaires that were administered. As for our non-significant results, it is possible that we may have found significant results if we had obtained a larger sample size, it could also be that our methods were simply not sufficient to capture the effects. Perhaps if we had given the patients a questionnaire asking what they were feeling and what they thought of the interaction, we may have been able to obtain more significant results through qualitative means.

After analyzing the qualitative data obtained from our observational data sheets, we were able to discover possible future directions for research based upon some of the notable trends found. Considering that during nearly every interaction, we saw that the family members in the room seemed to benefit from seeing the therapy animal almost as much as the patient, researchers wishing to build off of our results found could measure improvements in the emotional well-being of the family members present in addition to the patient's.

Some limitations of our study include the facts that we had no control group and the size of our sample population was small. We did not have a control group in our study due to the logistical difficulties that would be involved in having one. We

had a sample size of only 18 and having a control group in addition to our experimental group would reduce the size of our experimental sample even more. While having no control group in our study limits us from making claims that animal assisted therapy is more effective than other forms of therapy, we would have still been able to claim that short term animal assisted therapy is one effective means of improving hospital patients emotional well-being if we had found our hypothesis to be supported by our research. Because we found significant results of the affect of the child, this shows there are measurable benefits to animal assisted therapy. If we had obtained a larger sample size, it is possible we may have found significant results supporting our original hypothesis.

Other limitations that could have affected the responses of the participants were that they were aware of what we were studying. They knew that they were going to see a therapy dog, and they also knew that we were looking at how the dog made them feel. This could have resulted in expectation effects. When the participants were first told about the study, they were excited about the pending visit with the therapy dog, and most also appeared to be quite excited about being involved in a research study. Due to the novelty of this experience, a ceiling effect could have occurred with the participants reporting higher scores pertaining to their emotional wellbeing. Although our original research hypothesis was not supported by the results collected through the statistical analysis of our data, we did learn some interesting things in the study. Although we were able to only obtain 18 participants in our study, we learned much more from conducting research on those 18 patients in an actual real-world clinical setting rather than attempting to conduct our research

on dozens of undergraduate students in an artificial environment. Additionally, through conducting this research, we were able to gain important knowledge in conducting research in restricted settings. Going through the process of learning the intricacies of the bureaucratic elements involved with getting certified to do such research and gaining access to the hospital patients alone was an invaluable experience.

Research on the effects of short-term interactions with therapy animals should be pursued, as there are many situations in which it is simply not feasible to implement long-term programmes. If significant results were found with participants, it could be beneficial to have short-term programmes implemented in settings such as hospitals. There are many potential uses for animal assisted therapy in hospitals, one of which is with the general population, which is what we studied, another useful site could be in pre-op situations, when both patients and their families are likely to be particularly stressed. If short-term interactions with therapy animals were also found to be useful for the patients families, animal assisted therapy could also be used in places such as the Ronald McDonald House. Other situations could include trauma situations such as natural disasters or accidents.

Works Cited

- Banks, M., & Banks, W. (2005). The effects of group and individual animal-assisted therapy on loneliness in residents of long-term care facilities. *Anthrozoös*, 18(4), 396-408.
- Christianson, J. (2007) *History of Animal-Assisted Therapy*. Retrieved from

http://www.associatedcontent.com/article/385777/history_of_animalassisted_therapy.html

- Cobaleda-Kegler, J. (2006). Animal-assisted therapy with female juvenile offenders within a residential treatment setting. *Dissertation Abstracts International*, 67.
- Delta Society (2009) *Animal Assisted Therapy*. Retrieved from <http://www.deltasociety.org/Page.aspx?pid=320>
- Kaminski, Pellino & Wish. (2002) Play and pets: The physical and emotional impact of child-life and pet therapy on hospitalized children. *Children's Health Care*, 31(4), Dec, 2002. pp. 321-335
- Kawamura, N., Niiyama, M., & Niiyama, H. (2007). Long-term evaluation of animal-assisted therapy for institutionalized elderly people: A preliminary result. *Psychogeriatrics*, 7(1), 8-13.
- le Roux, M., & Kemp, R. (2009). Effect of a companion dog on depression and anxiety levels of elderly residents in a long-term care facility. *Psychogeriatrics*, 9(1), 23-26.
- Marino, L., & Lilienfeld, S. (2007). Dolphin-Assisted Therapy: More flawed data and more flawed conclusions. *Anthrozoös*, 20(3), 239-249.
- Meinersmann, K., Bradberry, J., & Roberts, F. (2008). Equine-facilitated psychotherapy with adult female survivors of abuse. *Journal of Psychosocial Nursing and Mental Health Services*, 46(12), 37-42.
- Netting, Wilson, New. The human-animal bond: implications for practice. *Soc Work*. 1987; 32: 60-64
- Somerville et al. Physiological responses by college students to a dog and a cat: Implications for pet therapy. *North American Journal of Psychology*, 10(3), 2008. pp. 519-528
- Terpin, J. (2004). Exploring the human-animal bond in an animal-assisted therapy program for at-risk youth. *Dissertation Abstracts International*, 65, 2672.
- Woolley, C. (2005). Changes in child symptomatology associated with animal-assisted therapy. *Dissertation Abstracts International*, 65.
- Williamson, C. (2008). Dolphin assisted therapy: Can swimming with dolphins be a suitable treatment?. *Developmental Medicine & Child Neurology*, 50(6).

Appendix 1

Demographics Form

Age _____

Race _____

Gender _____

Have you ever interacted with a therapy animal before? _____

If so, how many times? _____

Appendix 2

Informed Consent (Parent)

For IRB Approval Stamp
UNIVERSITY OF LOUISVILLE
INSTITUTIONAL REVIEW BOARD
Date Approved 3/9/2010 Valid Thru 3/8/2011

Subject Informed Consent Document

Short Term Effects of Animal Assisted Therapy

IRB assigned number:

Investigator(s) name & address:

Dr. Karen Frost
University of Louisville
Rm 110, Instruction Building
500 S. Preston St.
Louisville, KY 40202

Site(s) where study is to be conducted: Kosair Children's Hospital

Phone number for subjects to call for questions: 502-645-4734

Introduction and Background Information

Your child is invited to participate in a research study. The study is being conducted by Karen Frost, PhD, MBA. The study will take place at Kosair Children's Hospital located in Louisville, KY. Approximately 30 subjects will be invited to participate.

Purpose

The purpose of this study is to understand the short-term impact that human-animal interactions have on pediatric patient well-being.

Procedures

In this study, your child will be asked to answer a questionnaire consisting of approximately twenty questions before and after visiting a pet therapy animal. The amount of time required to answer these questions is approximately 5 minutes for each questionnaire, or a total estimated time of 10 minutes for participating in the entire study. Your child may decline to answer any questions that make them feel uncomfortable.

Potential Risks

There are no foreseeable risks other than possible discomfort in answering personal questions.

Benefits

The possible benefits of this study include helping researchers to understand the

positive impact that human-animal interactions have on patient well-being. The information collected may not benefit you directly. The information learned in this study may be helpful to others.

Confidentiality

Total privacy cannot be guaranteed. You and your child's privacy will be protected to the extent permitted by law. If the results from this study are published, your child's name and your name will not be made public. While unlikely, the following may look at the study records:

The University of Louisville Institutional Review Board, Human Subjects Protection Program Office,

People who are responsible for research and HIPAA oversight at the institutions where the study is conducted.

Office for Human Research Protections (OHRP),

Your child's data will be kept private by using locked cabinets to store consent forms and password protected computers and/or servers to store electronic information.

Voluntary Participation

Taking part in this study is voluntary. You may choose not to take part at all. If you or your child decides to be in this study you or your child may stop taking part at any time. If you or your child decide not to be in this study or if you or your child stop taking part at any time, you and your child will not lose any benefits for which you may qualify.

Research Subject's Rights, Questions, Concerns, and Complaints

If you or your child have any concerns or complaints about the study or the study staff, you have three options.

You may contact the principal investigator at 502-645-4734.

If you have any questions about you and your child's rights as a study subject, questions, concerns or complaints, you may call the Human Subjects Protection Program Office (HSPPO) (502) 852-5188. You may discuss any questions about you and your child's rights as a subject, in secret, with a member of the Institutional Review Board (IRB) or the HSPPO staff. The IRB is an independent committee composed of members of the University community, staff of the institutions, as well as lay members of the community not connected with these institutions. The IRB has reviewed this study.

If you want to speak to a person outside the University, you may call 1-877-852-1167. You will be given the chance to talk about any questions, concerns

or complaints in secret. This is a 24 hour hot line answered by people who do not work at the University of Louisville.

This paper tells you what will happen during the study if you and your child choose to take part. Your signature means that this study has been discussed with you, that your questions have been answered, and that you will take part in the study. This informed consent document is not a contract. You are not giving up any legal rights by signing this informed consent document. You will be given a signed copy of this paper to keep for your records.

Signature of Subject/Legal Representative Date Signed

Signature of Person Explaining the Consent Form Date Signed
(if other than the Investigator)

Signature of Investigator Date Signed

LIST OF INVESTIGATORS PHONE NUMBERS
Karen Frost 502-645-4734

Appendix 3

Informed Assent (Child Participant)

SUBJECT ASSENT

Short Term Effects of Animal Assisted Therapy

We will be testing whether there is a significant improvement in depression, anxiety, and self-esteem after interacting with an animal. Previous research has shown that the emotional well-being improves after interaction with an animal.

Please do not discuss this study with other potential participants until the study is over. If people know what we're testing before the study begins, they may respond differently, jeopardizing our results. Thank you for allowing your child to be a part of this study.

If you have any questions or comments about this research, please contact Aislinn Cooper at coopera10@hanover.edu, Griffin Liford at lifordw10@hanover.edu, or Stephen Dine-Young at youngst@hanover.edu.

For more information on these topics, we suggest reading:

Wells, D. (2009). The effects of animals on human health and well-being. *Journal of Social Issues*, 65 (3), 523-543.

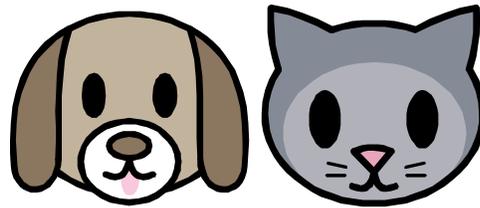
Appendix 5

Debriefing Form (Child Participant)

What You Just Did...

We are looking at how animals can help people feel better. The questions you answered will help us see how you felt before you played with an animal and how you felt after you played with an animal to help us see if the animal made you feel better. Please don't talk about what you have done in this study with the other kids until you have been told the study is over.

Thanks for helping us!
Aislinn & Griffin



Appendix 6

Questionnaire A

*Please circle the appropriate response to each statement.

1. I like myself.

Strongly Agree Agree Disagree Strongly Disagree

2. I am good at many things.

Strongly Agree Agree Disagree Strongly Disagree

3. I am equal to my classmates.

Strongly Agree Agree Disagree Strongly Disagree

4. I am not good at many things.

Strongly Agree Agree Disagree Strongly Disagree

5. I do not have much to be proud of.

Strongly Agree Agree Disagree Strongly Disagree

6. I feel happy.

Almost never Sometimes A lot of the time All the time

7. I feel lonely.

Almost never Sometimes A lot of the time All the time

8. I feel important.

Almost never Sometimes A lot of the time All the time

9. I feel sad.

Almost never Sometimes A lot of the time All the time

10. I feel that no one cares about me.

Almost never Sometimes A lot of the time All the time

11. I feel sick.

Almost never Sometimes A lot of the time All the time

12. I feel like running away.

Almost never Sometimes A lot of the time All the time

13. I feel that other kids don't like me.

Almost never Sometimes A lot of the time All the time

14. I feel life is not fair.

Almost never Sometimes A lot of the time All the time

15. I feel I am bad.

Almost never Sometimes A lot of the time All the time

16. I have trouble paying attention in class.

Almost never Sometimes A lot of the time All the time

17. I feel like talking to other kids.

Almost never Sometimes A lot of the time All the time

18. I feel like having fun.

Almost never Sometimes A lot of the time All the time

19. I am nervous a lot.

Almost never Sometimes A lot of the time All the time

20. I am helpful.

Almost never Sometimes A lot of the time All the time

21. I feel...

Very calm Calm Not calm

22. I feel...

Very pleasant Pleasant Not pleasant

23. I feel...

Very jittery Jittery Not jittery

24. I feel...

Very scared Scared Not scared

25. I feel...

Very worried Worried Not worried

26. I feel...

Very frightened Frightened Not frightened

27. I feel...

Very sure Sure Not sure

28. I feel...

Very troubled Troubled Not troubled

29. I feel...

Very nice Nice Not nice

30. I feel...

Very mixed-up Mixed-up Not mixed-up

Appendix 7

Questionnaire B

*Please circle the appropriate response to each statement.

1. Sometimes I am not a good person.

Strongly Agree Agree Disagree Strongly Disagree

2. I am just as good at doing things as others.

Strongly Agree Agree Disagree Strongly Disagree

3. I sometimes feel useless.

Strongly Agree Agree Disagree Strongly Disagree

4. I wish I liked myself more.

Strongly Agree Agree Disagree Strongly Disagree

5. I like myself.

Strongly Agree Agree Disagree Strongly Disagree

6. I worry about school.

Almost never Sometimes A lot of the time All the time

7. My parents love me.

Almost never Sometimes A lot of the time All the time

8. I feel like hiding from people.

Almost never Sometimes A lot of the time All the time

9. I feel like crying.

Almost never Sometimes A lot of the time All the time

10. I feel like playing with other kids.

Almost never Sometimes A lot of the time All the time

11. I feel loved.

Almost never Sometimes A lot of the time All the time

12. I feel like hurting myself.

Almost never Sometimes A lot of the time All the time

13. I feel upset about things.

Almost never Sometimes A lot of the time All the time

14. I feel tired.

Almost never Sometimes A lot of the time All the time

15. I feel I am no good.

Almost never Sometimes A lot of the time All the time

16. I feel sorry for myself.

Almost never Sometimes A lot of the time All the time

17. I have trouble sleeping.

Almost never Sometimes A lot of the time All the time

18. I feel worried.

Almost never Sometimes A lot of the time All the time

19. I feel bored.

Almost never Sometimes A lot of the time All the time

20. I feel...

Very upset Upset Not upset

21. I feel...

Very nervous Nervous Not Nervous

22. I feel...

Very rested Rested Not Rested

23. I feel...

Very relaxed Relaxed Not relaxed

24. I feel...

Very satisfied Satisfied Not satisfied

25. I feel...

Very happy Happy Not happy

26. I feel...

Very good Good Not good

27. I feel...

Very bothered Bothered Not bothered

28. I feel...

Very terrified Terrified Not Terrified

29. I feel...

Very cheerful Cheerful Not cheerful

30. Circle the face that shows how you feel.



Appendix 8

Observation Sheet

1. Overall Quality of Interaction – 1-5 Likert scale, 1 low, 5 high

a. Petting _____

b. Watching _____

c. Playing _____

2. Behaviour of Child - 1-5 Likert scale, 1 low, 5 high

a. Affect when dog enters _____

b. Affect during session _____

c. Affect as dog leaves _____

d. Engagement (is the child interested? Is the child looking elsewhere?)

e. Interaction with trainer _____

f. Interaction with parents _____

g. Interaction with siblings _____

h. Interaction with others _____

3. Behaviour of Animal – 1-5 Likert scale, 1 low, 5 high

a. Playful _____

b. Avoidance _____

c. Interaction with trainer _____

d. Interaction with others _____

e. Negative_____ Explain:

f. Unusual_____ Explain:

Other Observations: