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THE EFFECTS OF A VISITING HORSE ON  
DEPRESSION LEVELS IN A NURSING HOME SETTING

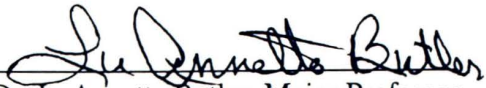
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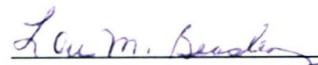
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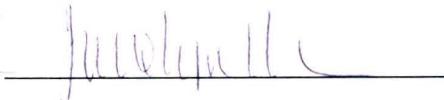
  
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THE EFFECTS OF A VISITING HORSE ON  
DEPRESSION LEVELS IN A NURSING HOME SETTING

A Thesis

Presented for the

Master of Science

Degree

Austin Peay State University

Jacqlyn Shea Brown-Hasse

December 2003



## DEDICATION

This thesis is dedicated to my parents

Larry and Nancy Brown

And to my faithful husband

Randy Neil Hasse

For their unconditional love,

Sacrifices and dedication

Through it all.

## ACKNOWLEDGEMENT

I would like to acknowledge and sincerely thank my thesis chair and advisor, Dr. LuAnnette Butler for believing in me and in this research project. She has been a mentor, an advisor, an advocate, and a great friend through both my undergraduate and graduate career. She has been there to support when I needed support and been there to push when I needed pushing. She has gone above and beyond the call of duty on this one.

I would also like to deeply thank Dr. Stuart Bonnington and Dr. Rhonda Bryant for taking me and my thesis on. They have been a great help throughout this process. I would also like to thank Dr. Nanci Woods her help with the IRB form. If it were not for her and Dr. Butler's combined help with the IRB form, I might still be waiting on approval. I would also like to thank Dr. Grah for his help with Systat and for becoming my third committee member at literally the very last minute. Last, but not least, I would like to thank Dr. Ronald Oakland for his support in the end with my internship and the last leg of this research.



## Abstract

There is a great deal of research on animal-assisted therapy in the literature. The majority of this literature focuses on the elderly population and social interaction among them. The current study employed residents in a nursing home to determine whether or not a visiting horse lowered their self-reported depression levels over a twelve week period of time. The Beck Depression Inventory II (BDI II) was administered two times across the study. At the end of the research there were ten participants who completed both the first and second administrations of the Beck Depression Inventory II. The BDI II was given at the beginning of the study and two weeks after the fourth visit with the horse. The results of the study did not indicate that taking a horse to visit with residents in the nursing home significantly lowered their self-reported depression levels. However, the residents appeared to enjoy the horse for the time that it was there. More research in this area is needed.

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## Chapter I

### Review of the Literature

#### Theoretical Background

Depression is a common mental illness that affects men, women and children. However, women seem to be at a much greater risk for developing depressive symptoms (Ron, 2002; De Beurs, Beekman, Geerlings, Deeg, Van Dyck, & Van Tilburg, 2001). Depressive symptoms can begin at any age but the average onset is in the mid 20's (American Psychiatric Association, *Diagnostic and Statistical Manual of Mental Disorders*). In order to be diagnosed with Major Depressive Disorder certain criteria must be met. The primary feature of Major Depressive Disorder is depressive episodes which are characterized by at least two weeks where there is either depressed mood or loss of interest in pleasurable activities (*DSM-IV*, 1994). The moods must also be accompanied by four other symptoms such as changes in appetite and weight, changes in sleep, decreased energy, feelings of worthlessness or guilt, suicidal ideation, and difficulty thinking or concentrating.

Depression is a common problem in the elderly. Prevalence rates tend to vary depending on the sample and the definition of depression. Roberts, Kaplan, Shema and Strawbridge (as cited In Teresi et al., 2001) found that in a community sample of the elderly about 15% tended to show depressive symptoms. However, when diagnosed according to *DSM-IV* (1994) criteria for Major Depressive disorder only about 3% met the diagnosis criteria. In nursing home care these numbers dramatically increase. About twenty percent of nursing home patients are diagnosed with Major Depressive Disorder, but about thirty to forty percent display depressive symptoms (Parmelee, Katz, &



Lawton, 1989). Silvestri et al. (2001) also found that depression, as rated by the Geriatric Depression Scale, tended to be higher in an inpatient setting as compared with the outpatient setting at a private clinic.

Even with these prevalence rates being so high, depression is under-recognized in nursing home settings. In a study conducted by Teresi, Abrams, Holmes, Ramirez, & Eimicke (2001) the staff at a nursing home only identified about 37% to 45% of the cases recognized by psychiatrists. Staff included nurses, nurses' aides, and social workers. The nurses' aides did recognize significantly more cases than did the nurses or social workers. These are alarming figures because many of these people work with the patients several times daily. However, Teresi et al. (2001) found that use of a structured depression recognition scale increased the recognition of depression.

Several things contribute to depression levels being so high among the elderly. De Beurs et al. (2001) found that low socio-economic status increased the likelihood of depression. These people with lower socio-economic status are the ones who will probably go to a nursing home or other inpatient setting due to the fact that they can not afford private or luxury care. According to De Beurs et al. (2001) another factor that increases the chances of depression in the elderly is living alone. Tran, Khatutsky, Aroian, Balsam & Conway (2000) found that Russian-speaking immigrants who lived alone showed higher depression levels than those who lived with others. Poorer self-reported health (De Beurs et al., 2001 & Tran et al., 2000), chronic conditions (Tran et al., 2000) and functional limitations (De Beurs et al., 2001 and Tran et al., 2000) all tend to increase the chances of developing depression. Functional limitations include loss of ability to walk, loss of eyesight or hearing, loss of use of a limb, or any other impairment.

As mentioned earlier, women tend to show higher levels of depression than men. Stressful life events (Tran et al., 2000) and traumatic experiences (Cook, Arean, Schnurr, & Sheikh, 2001) increase depression in the elderly. One stressful and traumatic event in particular is widowhood. This could put the widowers or widows at even higher risk according to Tran et al. (2002) because now they are probably going to be living alone. Ron (2002) found that women who were widowed displayed higher depression levels than those whose spouse was still alive. Similarly, Sugisawa, Shibata, Hougham, Sugihara, & Liang (2002) found that having a spouse and the presence of a spouse and contact with friends and neighbors tended to lower depression levels among adults aged 60 and over. The effects were the same for both American and Japanese women.

### Treatment of Depression in the Elderly

Depression can have very negative consequences for the person experiencing it. One of the negative consequences is that depression can lead to physical decline (Mossey, Gallagher, & Tirumalasetti, 2000 & Phenninx, Guralnik, Ferrucci, Simonsick, Deeg, & Wallace, 1998). Deeper depression can lead to suicide (Ron, 2002 & *DSM-IV*, 1994). With the threat of these negative consequences it is vital to detect depression early and treat quickly and appropriately.

#### *Drug Therapy*

Several treatments are available including drug therapy and psychotherapy. Drug therapy seems to be the most common treatment method. Monoamine oxidase inhibitors or MAOI's are an effective treatment but they are rarely used anymore (Nelson, 2001). They tend to have multiple side effects and interact with foods. SSRI's, or selective serotonin reuptake inhibitors, have been found to be effective and have fewer side effects

than the MAOI's. However, people do tend to have negative reactions to taking antidepressants such as MAOI's and SSRI's (Prabhakaran & Butler, 2002). One-third of the patients in their study felt that the antidepressants did not help and close to two-thirds experienced negative side effects that ranged from mild to severe. Additionally, only one-third reported always taking the medication. This in itself is a negative consequence because if medication is not taken correctly, it may not work properly.

### *Exercise*

Other treatments that did not involve antidepressants or were adjuncts to antidepressants have been found to be effective. One such treatment is exercise. Older adults assigned to an exercise group versus educational talks show a significant decrease in depressive symptoms as recorded by the Geriatric Depression Scale (Mather, Rodriguez, Guthrie, McHarg, Reid, & McMurdo, 2002). Buettner & Fitzsimmons (2002) found that therapeutic biking significantly lowered depression levels. Their results were maintained at a follow-up ten weeks later. With exercise and therapeutic biking lowering depression levels, other therapies could perhaps work, also.

### Animal-Assisted Therapy

Animal-assisted therapy has been found to be effective in many areas such as communication skills and self-esteem. However, no studies have been conducted to see if animal therapy will lower depression levels. Animal therapy is briefly discussed below.

In 1792, animals were introduced to the therapy setting at a Quaker Retreat in York, England (Draper, Gerber, & Layng, 1990). Animal-assisted therapy was first used in America in the 1940's at an Air Force hospital in New York (Draper et al., 1990). Since that time animals have served as adjunct therapists in several settings. They have



been useful in working with children, adults and the elderly. Many programs have been developed to bring animals to visit children in hospitals and adults and elderly in nursing homes. Some therapists are even incorporating animals into their one-on-one therapy sessions.

### Children

Several studies have found promising results for children on a wide range of behaviors. One such study, Hansen, Messinger, Baun, & Megal (1999) found that having a dog in a physical exam significantly lowered behavioral distress in the children who were exposed to the dog versus those children who did not have a dog in their exam room. The physicians were able to perform a more thorough exam more quickly with the dog in the room. Kaminski, Pellino, & Wish (2002) studied hospitalized children. They found that play therapy and pet therapy both increased self-reported moods in the children. Pet therapy however, significantly increased the parent's reports of the children's moods with parents viewing their children as happier after the pet therapy. Children who were in the pet therapy group also displayed a significantly more positive affect than did the children in the play therapy group.

Another article written by Reichert (1994) discusses how a dog is brought into a therapy session with sexually abused girls. She has observed that the girls will cuddle the dog either before, after, or while they are telling the group about their experiences. Some of the girls chose only to tell their stories to the dog. Even though the therapist herself did not hear what the girl told the dog, telling the dog may give the girl the strength she needs to tell others.



Vidovic, Stetic, and Bratko (1999) found that children who owned pets, particularly dogs, were more empathetic and more prosocially oriented than non owners. Redefer and Goodman (1989) also studied social orientation and found that there was a significant increase in prosocial behavior among 12 autistic children after being introduced to a dog. Less autistic behaviors were also observed. Research with children with Down's syndrome also showed that a real dog elicited significantly more social responses than did a stuffed dog. Verbal and non-verbal responses were higher in the group that was exposed to the real dog (Limond, Bradshaw, & Cormack, (1997).

Ross (1983) and Fine (2000) discuss the Green Chimneys Children's Services home. This is a home for children with emotional and physical disabilities. The farm is an old dairy farm. Several barnyard animals including sheep and horses reside there along with companion animals such as dogs and cats. The care of the animals and leisure activities involving the animals that are conducted at Green Chimney's is a form of career counseling in that the residents may develop an interest in a life long career with animals. The children also learn respect and gain respect from others by working with the animals and learning to work with each other to take care of the animals and to be teachers to those who do not know how to care for the animals. The establishment reports several benefits of the animals including heightened self-esteem and feelings of accomplishment after caring for an animal. Other studies have also found that animals bolstered self-esteem and self-confidence.

Law and Scott (1995) discuss how animals such as rabbits, turtles, birds, hamsters, or even reptiles, in an on-going program, improve self-confidence and self-esteem in children with autism. Children care for the animals in the classroom and rotate

taking them home on the weekends to care for them. Another study by Hanselman (2001), utilized animals that were formally abused to conduct research with a population of at-risk teenagers. She discussed with adolescents how the animals were abused but went on to be loving animals. She found that having dogs in her therapy sessions increased feelings of self-worth, happiness, and reduced levels of depression.

### Adults

Adults also benefit from interactions with animals. Marr, French, Thompson, Drum, Greening, Mormon, Henderson & Hughes (2000) found that schizophrenia patients in a pet therapy group displayed significantly more prosocial behavior after four weeks than did their counterparts in the group with no animal. Both groups were conducted the same except that small animals (dog, guinea pigs, & rabbits) were included in the pet therapy group. Friedmann, Katcher, Lynch, & Thomas (as cited in Fine, 2000) found that cardiac patients who were pet owners were statistically more likely to live longer than those who were not pet owners. Another study found that blood pressure and heart rates in adults tended to decrease more when observing chimpanzees rather than just having a relaxation period (Eddy, 1995 as cited in Fine, 2000). The presence of an aviary was also found to lower depression in men (Holcomb, Jendro, Weber, & Nahan as cited in Fine, 2000).

### Elderly

Most of the research with animals has been directed toward the elderly population. Several studies (Zisselman, Rovner, Shmuelly, & Ferrie, 1996; Perelle & Granville, 1993; Bernstein, Friedmann, & Malaspina, 2000; Barak, Savorai, Mavashev, & Beni, 2001) have found that animal assisted therapy increases social interaction in the

elderly population. Zisselman et al. had no statistically significant results in their study but did show that withdrawal behavior decreased although not statistically significantly as well as irritable behavior decreasing with visiting dogs. Perelle & Granville showed increases in social functioning following the visits of cats, dogs, and a rabbit, but the results did not stand the test of time. Results had declined four weeks after posttest. In Bernstein et. al., significant results for improvement in social functioning were found only after conversation directed at the dog was included. In other words, social interactions did not increase when only interactions with other human beings were considered. Barak et al. found significant increases in social functioning among elderly schizophrenic patients when they were given their own dog or cat for the therapy session. The patients could choose which animal they wanted to interact with. Fick (1992) suggested that the presence of a dog provided a comfortable environment that is important to the goal of increasing social interactions after she found significant increases in social interactions among elderly nursing home residents.

Crowley-Robinson, Fenwick and Blackshaw (1996) conducted a long-term study of elderly patients with animals. They conducted their study at three different nursing homes. One had a visiting dog, one had a resident dog, and the other had no dog. In all three of the nursing homes, residents showed increases in vigor. Residents at the visiting dog and resident dog facilities showed decreases in fatigue. Residents with a resident dog showed decreases in tension and also significant decreases in depression.

Even with all of these promising positive results for the elderly, one thing may be lacking in the research. The majority of residents in a nursing home setting are elderly people probably seventy and older. Seventy years ago farming was a big industry. A large



part of farming involves animals such as cows, pigs, chickens, and horses. When confined to a nursing home setting, people no longer have access to farm animals that once might have been a major part of their lives. In many facilities there is not an adequate place to a large animal such as a horse or a cow nor enough staff to care for an animal of this nature.

These retired farmers may prefer to interact with farm animals versus a companion animal such as a dog or cat. These farmers can get more satisfaction out of watching a farm animal out a window as opposed to cuddling a dog or cat (Fine, 2000). Being able to interact with these animals may help to lower depression levels in elderly people in nursing homes regardless of whether they were farmers or not. One way people can interact with farm animals is therapeutic horseback riding programs.

Several studies have been conducted on the effects of a therapeutic riding program on handicapped children and adults. One such study conducted by Farias-Tomaszewski, Jenkins, and Keller (2001) studied therapeutic horseback riding in handicapped adults. The adults in this study had a physical handicap of some degree. They participated in a 12-week therapeutic horseback riding program. The investigators found that at the end of the study physical self-efficacy and physical self-confidence had improved. However, many elderly people may be unable to ride horses due to physical impairments that prevent riding or they may not want to ride but may want to visit with horses. No studies to knowledge have been conducted primarily to see if just visiting with a farm animal will affect emotional states in children or adults much less the elderly who may benefit the most only from seeing farm animals again.



The current study will investigate whether or not a farm animal (a horse) will affect depression levels in the elderly in a nursing home setting. It is hypothesized that a visiting horse will lower depression levels in residents.

## Chapter II

### METHOD OF STUDY

#### Participants

This study was conducted in Ashland City, Tennessee, at a medium sized nursing care facility. When the study began the facility was called Cheatham County Health Service Center and was later re-named Christian Care Center. There were approximately 75 residents in the facility when this study began, but only 27 chose to participate. However, the final sample consisted of only 10 participants. Mortality, illness, and return home all contributed to the decline in participants.

The sample consisted of six male participants and four female participants. The participants ranged in age from 70 years to 95 years with the mean age being 83 years of age. All participants were Caucasian. All participants were also from the Cheatham County area.

The participants participated in a ten week study. Every other week for eight weeks they were asked to visit with a horse for two hours with a break in between if they wanted to go inside. Participants were free to come in and out when they wanted. Other residents who were not participating in the study did other activities that were arranged by the staff and were not included in the current study.

Permission from the Director of Nursing at the nursing facility was granted before any other approvals could be obtained. The Director of Nursing was offered the opportunity to contact the principal investigator's supervisor if any question should arise. She was also given a letter written by the principal investigator's supervisor stating that the research project was being conducted for educational purposes. Once permission was

granted, the application for this study (see Appendix A) was submitted to the Institutional Review Board at Austin Peay State University and was approved. Following approval, the principal researcher took the consent form (see Appendix B) to the nursing facility and reviewed it with both the Director of Nursing and the Activities Director. Both agreed to the research. The staff at the facility compiled a list of 27 names that they thought would benefit from the study. Each one of the 27 potential participants were contacted face-to-face individually by either the Director of Nursing or the principal investigator. A script (see Appendix C) was created as a way to approach the participants for the study. Immediate family members were also contacted by the Director of Nursing to obtain their permission.

Once all permission was obtained, the participants were given a packet that contained the Informed Consent (see Appendix B), a demographics form (see Appendix D) and the initial copy of the Beck Depression Inventory II (see Appendix E). All forms were numbered and kept together to ensure confidentiality. Once the forms were completed the researcher took the forms home and locked them in a cabinet. One week after all of the forms were completed, the researcher trailored the horse to the facility and the participants were allowed to visit with the horse.

## Materials

### Demographics Questionnaire

A demographics questionnaire was given to each of the participants. The questionnaire included questions regarding age, gender, career before retirement, number of years at the facility, whether or not the participant owned a horse, and a rating scale to rate the clients ambition about visiting with a horse. The rating scale used a five point

Likert scale ranging from 1 -“Really Excited” to see a horse to 5 - “Really not excited” to see a horse.

### Beck Depression Inventory II

The Beck Depression Inventory II (Beck, Steer, & Brown, 1996) will also be given to the residents. The Beck Depression Inventory II was chosen because it is a very short form having only 21 questions and suitable for all ages over 13 years. The Beck Depression Inventory II assesses the severity of depression by using a four point scale on each of the 21 questions being asked. Scores can range from 0 to 63. Table 3-1 lists the breakdown of scoring.

Table 3-1

#### Scoring System for Beck Depression Inventory II

Score	Level of Depression
0-13	Minimal Depression
14-19	Mild Depression
20-28	Moderate Depression
29-63	Severe Depression

The Beck Depression Inventory II is a self-report measure and it is also hand scored. It can be either administered individually or in groups. In this study the researcher chose to administer individually to ensure that the participants understood each of the questions and because the forms were in smaller print. These materials were purchased by the principal investigator.

### Jezzabelle the Horse

Skippping Bonus Chex, a.k.a. “Jezzabelle”, is a three-year-old palomino mare. She is an American Quarter Horse and is registered as such. She had all vaccinations and tested negative for coggins. She had a current certificate of health completed by Dr. Mark



Smith, a veterinarian employed at White Oak Equine in Dickson, Tennessee. Jezzabelle belongs to the principal investigator.

### Procedures

Once all consent was obtained, participants were administered the first Beck Depression Inventory one week prior to the first visit with the horse. The inventories were administered individually to each of the residents who agreed to participate. Assistance to the researcher was provided by the staff at the facility.

One week after the administration of the inventory, Jezzabelle was brought for her first visit. The horse was known to have a gentle personality and interacts well with people. A health certificate was given to the nursing home for their file prior to visits. The horse had all vaccinations up to the point that she began visiting and continued to receive all scheduled veterinarian visits, farrier visits, and vaccinations.

The horse visited a total of four times. Upon each visit, the researcher had a family member accompany her to the facility with the horse. Her spouse went three times and her father went once. Both family members were extremely knowledgeable about horses and had a great deal of experience working with horses. The family member only attended to assist in maintaining control of the horse and to ensure that the horse suffered no stress or injury. Both family members were informed of the limits and importance of confidentiality.

Upon each visit, sessions lasted for approximately two hours. The horse worked for one hour. During this hour, participants were allowed to talk to the horse, groom the horse, and pet the horse. Participants were not allowed to ride the horse for their own personal safety. Participants were asked to approach the horse one at a time. Following

the hour of work, the horse was given a thirty minute break to drink and rest. The horse was allowed to eat and roam the area considering it was fenced in. At this time, the horse was still in sight and the participants were able to observe her. The horse was then brought back to visit with the participants for approximately thirty more minutes.

Visits took place over a period of eight weeks with the visits occurring every other Saturday. Due to the high loss in participants, it was jointly decided that it would be more effective to wait until after the fourth visit with the horse to administer the next Beck Depression Inventory II. It was administered two weeks after the final visit with the horse. Two weeks after this, the researcher delivered pictures that she had taken of the residents and the horse to the facility and gave them to the participants. They could not be framed due to the fact that there was little room for trinkets to set around in the rooms. Most participants only had a small night stand that was used for other purposes such as television stands. Therefore, the pictures were hung on cork boards in the participant's rooms. Data was then analyzed to see if there was a significant decrease in depression scores.

## CHAPTER III

### RESULTS

The hypothesis that participants would score significantly lower at post-test than at pre-test on the Beck Depression Inventory II was not supported ( $t(9) = .0824$ ,  $p = 0.431$ ). The scores were somewhat lower at post-test ( $\underline{M} = 6.4$ ,  $\underline{SD} = 4.648$ ) than at pre-test ( $\underline{M} = 8.6$ ,  $\underline{SD} = 11.539$ ). Although participants seemed to show some reduction in depression, the results did not show a statistically significant reduction.

Eight of the ten participants at pre-test scored in the minimal depression range with the highest score being a 9. Of the other two participants one score in the mild depression category (score = 17) and one in the severely depressed category (score = 38). Both of these scores were reported to the Director of Nursing. Upon post-test however, both of these participants had lower scores (scores: 10 and 17 respectively). Some scores were also increased at post-test. This may have been due to illness.

## CHAPTER IV

### DISCUSSION

With there being such an intense problem with increased rates of depression in the elderly today, treatment for this depression is an extremely important issue. In the elderly population there are several inevitable risk factors such as losing a spouse (Ron, 2002), living alone (Tran et al., 2000), decline in health (Tran et al., 2000 & DeBeurs et al., 2001), and functional limitations (DeBeurs et al., 2001).

Although there are many ways to treat depression in the elderly, no one treatment will work for all. Some effective treatments found thus far are medications and exercise. The main focus of this study was to determine if animal-assisted therapy which has been successfully used in other domains such as social interaction enhancement (Zisselman, 1996, Perelle & Granville, 1993, Bernstein et al., 2000, & Barak et al., 2001) and lowering depression in adults (Holcomb et al. as cited in Fine, 2000) would be effective in reducing depression in an elderly population.

No statistically significant results were found in the current study however, there were some decreases in depression scores. The researcher was also interested in whether or not the participants were looking forward to visiting with the horse. Eight out of ten of the residents were really excited about seeing the horse.

Of the participants that were looking forward to seeing the horse, all greatly enjoyed seeing and visiting with this horse. This enjoyment was evidenced by a great number of smiles and laughs when visiting with the horse as well as staff reporting elevated moods after visiting with the horse. Several of the residents questioned when the



horse would be coming back and looked forward to that date. Several case studies of individual participants follow.

#### Participant 1

Participant 1 was a 91 year old male who had been a farmer when he was younger. He had owned horses and worked them on his farm. His first Beck Depression Inventory score was a 17 indicating that he was mildly depressed. His second score was a 10 indicating that he was minimally depressed.

When the horse was brought for the first time, he was very happy to see her. He sat in his wheel chair and watched her for several minutes. He then asked if he could pet her. The researcher's spouse took the horse over to the man. He continuously rubbed her nose and smiled. He then began to tell stories about having and working horses when he was younger. Staff reported that this was the happiest that they had seen the man in several months.

Upon subsequent visits, the gentleman informed the researcher that he did not go outside at the facility. He was bored and did not want to just go outside and sit. He was told about the horse visiting by the Director of Nursing and immediately got excited. In fact he and participant 2 were the first two out on the day of the horse's first visit. He was outside for every visit from beginning to end. In addition to this when the researcher went back to deliver pictures of the participants with the horse, she found this man sitting outside on the patio enjoying the sun. He put his picture in his pocket and was going to hang it on his corkboard.

#### Participant 2

Participant 2 was a female client who was 80 years old. She had owned horses all of her life. In fact she frequently went to horse shows with Tennessee Walking Horses. She raised and trained them for a good portion of her life. This participant was approached for the research project by the researcher and the Director of Nursing. When she was told about the research, she immediately agreed to participate and was curious to see when the horse would be coming. She wanted to draw a picture of the horse.

This participant in particular scored a 0 on the first Beck Depression Inventory II and scored a 2 on the second assessment. The day that the second assessment was given, this participant was extremely busy writing her life story. However, her increased score was not a large one, nor was it indicative of depression. This participant was always one of the first ones outside and would always see to it that Participant 1 described above got outside. She almost missed the horse on the second visit. She was taking a shower. If there was anyone else she thought might benefit, she saw to it that they got out too. She was full of questions about the horse and stressed many times that she enjoyed visiting with the horse and expressed much interest in the horse just staying there with her. She was however, moderately upset that she did not get to ride the horse.

### Participant 3

Participant 3 was a 79 year old male. He was blind in both eyes, could not hear well, and could not walk. You had to raise your voice to speak to him, but he liked to be spoken to. This participant was approached by the Director of Nursing and seemed excited to be able to visit with a horse.

His first assessment score was a 38 indicative of extreme depression. When this first assessment was made, the participant was angry. He wanted to go home. On the

second assessment, he scored a 14 indicating mild depression. When this assessment was given, the man was going home within the week.

The man had to be lifted out of his chair to be able to pet the horse. It was very hard for him to be lifted because it caused him some pain. The first time he was lifted and touched the horse, he just laughed non-stop. He then proceeded to stick his hand in her mouth, so the researcher put her hand over the horse's mouth. The man had to sit back down, but kept referring to "his pony". He wanted his pony. He was able to get up out of his chair about three times each visit and laughed each time.

Each of the people in these three cases seemed to really enjoy their visit with the horse. The other seven participants enjoyed the horse also, but these three seemed to receive the greatest amount of pleasure from the interaction. A fourth participant seemed to enjoy his picture more than anything. He was given two pictures, one of him and one of the horse alone.

This study was met with open arms from the participants and the staff at the facility from the beginning. Staff continues to report that the participants talk about the horse especially when they see their pictures. Many of them are looking forward to visiting with the horse again in the Spring although no studies will be occurring. The promise of a return by the horse was a reward for the participation in the study.

### Limitations

There are limitations to the present study. One limitation is the extremely small sample size. The original sample was 27 participants, but decreased over 10 weeks to 10 participants due to a number of factors including death, illness, move, and refusal to



complete the second assessment. This might be improved by starting with a larger sample although a larger facility would be needed.

Another limitation is the fact that only two assessments occurred. The original design of the study called for three assessments. When the second assessment could have occurred however, staff at the nursing facility was unable to assist due to the transition in names and ownership. The staff did not want the visits to cease, but had to get approval from the new owners to continue with the assessments. Although the new owners gave their permission, the fourth visit with the horse had already occurred. The second assessment was then given and the third was to follow, but did not occur. The reason for this was that by the time the third assessment could have been completed, there would have been fewer than ten participants.

Another possible limitation was the use of the Beck Depression Inventory II. One problem with using the Beck Depression Inventory II came with some of the questions that the inventory asks. One such question asked whether sexual interest had changed. Many of the residents responded that their interest had not changed but that they did not have opportunities for sexual interactions. Therefore, this question may not have accurately assessed their sexual interest. Another scale may have provided more accurate measure of depression.

### Conclusion

Again, although there were no significant results found, this researcher along with staff at the facility feels that this was an effective study. It was a form of therapy that did not cost much. There was only one horse taken and time was volunteered by the researcher's spouse. The participants at the facility had elevated moods and seemed to



look forward to an event that was coming up. Although some of them were only happy for the time that they were out there with the horse, it was a beneficial two hours according to families and staff at the facility. There could have been many factors that elevated moods such as being outside, interacting with other residents at the facility, or the sun shining that day, but for some the horse could have been the key.

## LIST OF REFERENCES

## List of References

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## APPENDICES



**AUSTIN PEAY STATE UNIVERSITY  
APPLICATION FOR APPROVAL OF RESEARCH INVOLVING  
HUMAN SUBJECTS**

Please read the entire application before completing.

**TITLE:** The Effects of a Visiting Horse on Depression Levels in a Nursing Home Setting

**TITLE ON CONSENT FORM (If different than above):**

**FUNDING SOURCE:** Funded by principal investigator

**PRINCIPAL INVESTIGATOR:** Jacqlyn S. Brown-Hasse

**DEPARTMENT:** Psychology

All of the questions below should be answered using lay language. The IRB is comprised of individuals from diverse scientific and nonscientific backgrounds. You should avoid all jargon and assume that IRB members have no prior knowledge on the research topic, theoretical or methodological approaches, or measurement techniques or instruments. The best way to avoid unnecessary delays is to provide the IRB with as much information about your study as possible. **You will need to attach a copy of all demographic forms, survey instruments, and other data collection systems.** If you are unable to attach the above please contact the Office of Grants and Sponsored Programs for advice. It is important to remember that informed consent is a process not a document. Informed consent begins with recruitment and ends only after a study is completed.

1. **Describe the purpose of this study.** Be sure to clearly indicate the research question being asked.

The purpose of this investigation is to evaluate whether or not taking a horse to visit with the elderly in a nursing home setting will change depression levels.

2. **Briefly describe the research that has already been conducted in this area.** The IRB needs to understand how this study adds to the knowledge on this topic in order to be able to judge the risks and benefits to participants.

There is very little research in the area of pet therapy and depression. A great deal of research has been conducted using pet therapy in the area of social interaction enhancement. The researchers for the most part employ dogs in their research although some use cats, rabbits, hamsters, and fish. Horses are primarily used in research with the handicapped (i.e. therapeutic riding programs). There have been some studies where farm animals are used for therapy. This research has involved children and adolescents. Learning how to care for farm animals has been found

to enhance their self-respect and their respect for others while also increasing their self-esteem. Many elderly people, especially in rural counties, may have had careers in farming. However, now some of them are confined to nursing homes and no longer have access to the farm life. Hopefully, by taking a horse to visit it will restore a little piece of this life.

3. **Describe the population from which your research sample will be drawn.** Be sure to indicate if subjects are from a vulnerable population such as infants, children, pregnant women, mentally disabled persons, prisoners, employees, students, economically or educationally challenged persons etc...). What additional safeguards will be included to protect the rights and welfare of these participants?

The population from which a sample will be drawn will be elderly residents in a nursing home in Cheatham County. All measures will be taken to protect confidentiality. However, if scores on the Beck Depression Inventory indicate suicidal tendencies or severe or extreme depression levels, which would be indicated by a Beck Depression score of 31 and over, steps will be taken to notify the proper people. The principal investigator will report to Dr. LuAnnette Butler and Ruth Hargis, Director of Nursing.

4. **Explain the inclusion and exclusion criteria that will be used (e.g., age, race, gender, language, academic abilities, academic major, pre-existing conditions, etc....).**

Any of the residents at the nursing home will be allowed to participate in the research if they wish. The only exclusions will be those who are allergic to horses or those who may have a fear of horses.

5. **Indicate how many potential participants will be approached.** The APIRB needs to know the maximum number that might be asked to participate, NOT the minimum number needed to adequately ask the research question. It is recommended that you choose a number higher than you expect to need because once the number is approved you will need to apply to the IRB for permission to recruit additional participants. Do not choose an unnecessarily large number however, because sample size may affect the risk/benefit ratio decision that the IRB must make. Please break down your maximum numbers by category (e.g., child, adult, male, female, depressed, non-depressed etc...) such that the board can evaluate the risks for different types of participants.

The maximum number of participants will be 25 participants.

6. **Describe how participants will be identified, approached, recruited and consented.** Who will make the first contact and when and where will it occur. All materials used to recruit participants need to be submitted for review (e.g., media advertisements, brochures, email, poster/signs or sign-up sheets, etc...). If verbal



announcements will be made for recruitment purposes please provide a script of how the study will be described or a list of the points that will be made.

The activity director at the nursing home will tell the residents about the visiting horse. All of those who wish to participate will be asked to meet with the principal investigator at a specific date and time. They will be reminded so that there will be no chance of missing out. Upon the first visit by the principal investigator, the principal investigator will verbally inform the residents about the investigation (its purpose, risks, etc.). This first visit will occur in the common room. Residents will read the informed consent documents and any questions will be answered. They will be asked to sign the form and will be given a copy to keep.

7. **Specifically identify all individuals who will describe the study to potential participants. Also, specifically identify all individuals who will obtain consent from potential participants.**

Do these individual(s) have a dual relationship with potential participants (e.g., instructor, mentor, employer, caregiver, etc...) that might create the potential for the perception or actual existence of coercion or undue influence? What procedures will you put in place to reduce or eliminate potential/perceived coercive situations?

Only the principal investigator will describe the actual study to the participants. The activities director of the nursing home will be involved in the actual activity itself, but data collection and obtaining consent will be the sole responsibility of the investigator. The activities director is Regina Hollandsworth.

8. **Describe your research procedures.** We need to know all of the procedures that will occur, but in particular we need a description of what the participants will experience. For example, a description of the instructions that will be given to them, activities in which they will engage, the length and timing of involvement, and the circumstances under which they will provide data (i.e., group assessments, one-on-one interview, videotaping, audio taping, phone calls, spending time in an uncomfortable position, etc...).

The participants will be approached by the principal investigator and a description of the research will be given. Upon this first meeting in week one of the study, if they residents choose to participate, they will be given an informed consent form and then be given a demographics form and then the Beck Depression Inventory (BDI). Each participant will be assigned a number. This number will be written on their informed consent form and on the envelope which will contain the Beck Depression Inventory and the demographics form. The principal investigator will compile a name/number list from the informed consent form for the purpose of administering future BDI's. When compiling data, only the number will be entered to maintain confidentiality when data is viewed by others. The activities for the remainder of the study are described below.

Week 2: No activity.

Week 3: The horse goes for its first visit. Residents will be allowed to talk to, rub, and groom the horse. She will stay for two hours and have a thirty minute break after the first hour.

Week 4: No activity.

Week 5: The horse will go for its second visit. Again for two hours with a thirty minute break.

Week 6: The Beck Depression Inventory will be administered a second time.

Week 7: The horse will go for its third visit.

Week 8: No activity

Week 9: The horse will go for its fourth and final visit.

Weeks 10, 11, & 12: No activity.

Week 13: The Beck Depression Inventory will be administered the third and final time.

Week 14: All data will be entered and results obtained.

9. **If this study involves deception, describe and justify its use.** Deception will require that subjects be debriefed following data collection. The purposes of the debriefing are to explain the true purpose of the study, reduce any negative consequences participants may experience from participation and to provide a clear, easy opportunity for withdrawal of consent. You must include a copy of the debriefing statement in your application.

No deception is involved.

10. **Describe any form of compensation that participants will receive (e.g., money, extra credit, toys, food, etc...).** If so, please describe amount, type, when they will receive it. If withdrawal from the study will change the amount or type of compensation please describe how (i.e., prorated, elimination, etc...). Note that academic extra credit can only be awarded at the discretion of the instructor, not the principal investigator.

Participants will be given a framed picture of themselves and the horse at the end of the study. The principal investigator will take pictures across the four sessions as the participants wish. If they do not want a picture of themselves, they will be given a picture of the horse in a frame. For participants who withdraw, they will still be given the picture if it was taken before they withdraw.

11. **Explain if this research might entail psychological, legal, physical, or social harm or discomfort to the subjects.** What steps have been taken to minimize these risks? What provisions have been made to insure that appropriate facilities and professional attention necessary for the health and safety of the subjects are available and will be utilized? How will the participants be informed of these procedures? If an information sheet describing these resources will be provided to participants, please submit. If university or community professionals agree to



provide their services, please submit a letter of cooperation from the individuals/agencies that describes the agreement.

One of the primary risks of working with animals is the risk of getting injury from the animal. It is highly unlikely, but if it were to occur, there will be a nurse available who is employed at the nursing home. To minimize risks, there will be two people handling the horse. One will be the principal investigator and the other will be the spouse of the principal investigator. The spouse will only go to assist with the horse. He will not be involved with any data collection. Upon the first meeting with the residents, the principal investigator will stress the importance of horse safety, such as not walking behind the horse, not abusing the horse (i.e. hitting, kicking, or screaming at the horse), and approaching the horse one at a time. To further minimize risks, the residents will not be allowed to ride the horse. The residents will also be on a railed patio where the horse can stick her head in but can not walk into. Residents will be told prior to any contact with the horse, if they were to get hurt in some way to inform the principal investigator or the Director of Nursing, Ruth Hargis. The principal investigator will then inform Ruth Hargis who is the director of nursing. If she is unavailable, Regina Hollandsworth, who is the activities director, will be notified. The principal investigator's student liability insurance will cover any injury to the participant resulting from the research study. The principal investigator will provide liability insurance information to the activities director.

12. **Describe how the potential benefits of this activity to the participants and humankind outweigh any possible risks.** This opinion is justified for the following reasons:

1. Depression levels on the Beck Depression Inventory may be lowered in participants.
2. Participants may be happier if their depression levels are lowered.
3. Participants have a chance to interact with an animal other than a dog.

13. **Describe how the confidentiality of data about participants will be protected.** What steps and procedures will be used? How (hard copy, electronic, etc...) and where (e.g., locked file cabinet in PIs campus office) will data be stored? If data will be destroyed please indicate when and how.

Confidentiality will be protected by files being locked in the principal investigator's office at home. Participants will be given a numbered manila envelope containing the Informed Consent form, demographics form and the Beck Depression Inventory. They will be asked to complete all forms and put them back into the envelope. All participants will be assigned the number on the outside of the envelope. The number will be placed on all copies of the Beck Depression Inventory and the demographics form. The participants name will only be found on the informed consent. A list will be compiled of the names and numbers. The only purpose in this is to keep the scores on the Beck Depression

Inventory in line to determine what percentage of the participants show improvements in their depression scores. This will also be used if an extreme score is found to identify the resident who has the extreme score. No names will be used in data entry. Again all information will be kept in a locked file cabinet at the home of the principal investigator.

14. **If data will be anonymous, explain how this anonymity will be achieved.** Note that anonymity requires that at no time can the data be connected to the participant by anyone involved in the research, even the PI. If data will be anonymous, explain how and where the consent document will be stored.

Data will not be completely anonymous to the principal investigator due to the fact that the principal investigator will have to keep a list of names and numbers to ensure that Beck Depression Inventory scores are assigned to the right participant number.

15. **Explain how any data collected relate to illegal activities.**

**No illegal activities will be conducted.**



16. Please indicate by marking Y(es) or N(o) whether the attached informed consent document includes each of the following elements as required by the Code of Federal Regulations: Title 45, Part 46.116.

- ☒ y A statement that the study involves research,
- ☒ y an explanation of the duration of the subjects participation,
- ☒ y a description of the procedures to be used;
- ☒ y A description of any reasonably foreseeable risks or discomforts to the subject;
- ☒ y A description of any benefits to the subject or others which can be reasonably expected from the research; *(Note: compensation is not a benefit)*
- ☒ y A statement describing the extent, if any, to which confidentiality of records identifying the subject will be maintained;
- ☒ y An explanation of whom to contact for answers to pertinent questions about the research and research subjects' rights, and whom to contact in the event of a research related injury to the subject; *(Note: should include APIRB, PI and if applicable, students' faculty sponsor)*
- ☒ y A statement that participation is voluntary, refusal to participate will involve no penalty or loss of benefits to which the subject is otherwise entitled, and the subject may discontinue participation at any time without penalty or loss of benefits to which the subject is otherwise entitled. *(Note: this statement should be written in language at an appropriate level for the subjects in your study).*

The following may or may not apply your study. Please carefully read and mark each one Y(es) or N(o).

- ☒ y An explanation of whom to contact in the event of a research related injury to the subject;
- ☒ n A disclosure of appropriate alternative procedures or courses of treatment, if any, that might be advantageous to the subject;
- ☒ y For research involving more than minimal risk, an explanation as to whether any compensation and an explanation as to whether any medical treatments are available if injury occurs and, if so, what they consist of, or where further information may be obtained;
- ☒ y A statement that the particular treatment or procedure may involve risks to the subject which are currently unforeseeable;

- \_\_\_n Anticipated circumstances under which the subject's participation may be terminated by the investigator without regard to the subject's consent;
- \_\_\_n Any additional costs to the subject that may result from participation in the research; (*Note: This is not limited to monetary costs*)
- \_\_\_y The consequences of a subject's decision to withdraw from the research and procedures for orderly termination of participation by the subject;
- \_\_\_n A statement that significant new findings developed during the course of the research which may relate to the subject's willingness to continue participation will be provided to the subject; and
- \_\_\_y The approximate number of subjects in the study.

17. **If your study includes children please provide the committee with information about how you will obtain the child's assent to participate.** Children older than 12 are expected to be provided the opportunity to sign to indicate their assent to participate. Children 7-12 should be provided with a written document, which may or may not also be read. Depending on the research to be conducted children 6 years and younger may be read an assent script (please submit). In addition to your procedures to obtain assent, please indicate what dissent behaviors will lead you to decide a child is not providing or has withdrawn his/her assent to participate. Note: child assent can be solicited only after parental consent has been obtained.
18. **If you are requesting a waiver of the documentation of informed consent please explain how you would meet the requirements of 45 CFR 46.117.**

I have read the Austin Peay State University Policies and Procedures on Human Research (00:002) and Research Misconduct (99:013) and agree to abide by them. I also agree to report to the Austin Peay Institutional Review Board any unexpected events related to this study. I also agree to receive approval before implementing any changes in this study.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date



**Consent to Participate in a Research Study  
Austin Peay State University**

You are being asked to participate in a research study. The form you are about to read is intended to provide you with the information you might want to know about the study. You may ask the researchers listed below any questions about this study. You may also call the Office of Grants and Sponsored Research, Box 4517, Austin Peay State University, Clarksville, TN 37044, (931) 221-7881 with questions about the rights of research participants.

**1. Title of Research Study**

A study to determine the effects of equine visitation therapy on self-reported depression levels.

**2. Principal Investigator**

**Jacqlyn Hasse**, Graduate Student, Austin Peay State University,  
Psychology Department, Clarksville, TN (931)221-7233

**Dr. LuAnnette Butler, Ed. D.**, Associate Professor, Faculty Supervisor,  
Austin Peay State University, Psychology Department, Clarksville, TN  
931-221-7229.

**3. The Purpose of the Research**

The purpose of this study is to determine whether elderly residents at nursing home who visit with a horse will have fewer depressive symptoms after visiting with the horse.

**4. Procedures for this Research**

You are being asked to be part of this research. It is voluntary and you have the right to withdraw at any time without any cost to you. All information collected from you will be destroyed. If you choose to participate, you will be asked to participate for approximately fourteen weeks. If you choose to participate, you will visit with an American Quarter Horse. The horse will come on four different occasions and will stay for two hours. Approximately twenty five other people will participate in this study. You will be asked to fill out a survey called the Beck Depression Inventory on three different occasions. It will take you approximately fifteen minutes to complete. You will be asked to complete this before the horse comes, after the second visit with the horse, and then again after the fourth visit with the horse. In the event that you score extremely high indicating that you are severely depressed, the principal investigator would notify both the Director of Nursing, Ruth Hargis, and Dr. LuAnnette Butler, faculty sponsor to ensure that you get the proper services. Otherwise, all information that you provide will be confidential

to the extent of the law. The surveys that you fill out will only have a number, not a name. The data that is collected along with these consent forms will be locked in a file cabinet where only the researcher has access to it.

## **5. Potential Risks**

If you decide to be a part of this research, there are minimal potential risks. Steps have been taken to minimize these risks. Horses are large, powerful animals and it possible that physical injury may result from interactions with the horse. However, you will be asked not to walk behind the horse to prevent her from kicking you and you will be asked to approach the horse one at a time. This will protect the horse, you and the other residents. There will be two people handling the horse at all times. You also will not be allowed to ride the horse. In the unlikely event that you are injured by the horse, you are covered by the principal investigator's student liability insurance. If you are injured, please tell Jacqlyn Hasse or Ruth Hargis, Director of Nursing, immediately following injury and proper care will be provided for you.

## **6. Potential Benefits**

Potential benefits to you might be that visiting with the horse might make you feel better. You will also get to interact with an animal that typically does not get to visit the facility which you may enjoy interacting with.

## **7. Informed Consent Statement**

I have read about this study, why it is being performed, and about the potential risks and benefits to myself. I understand that my participation is strictly voluntary and that I do not have to participate. I also understand that I can withdraw from this research at any time without incurring any costs to myself. If I do choose to withdraw from the study, I understand that all data collected prior to my withdrawal will be destroyed. I understand that this research is being conducted by Jacqlyn Hasse, a graduate student at Austin Peay State University under the supervision of Dr. LuAnnette Butler, a faculty member in the Department of Psychology at Austin Peay State University. I have been informed of the procedures to be followed in writing. I understand that I can contact Jacqlyn Hasse at 615-876-1683 or Dr. LuAnnette Butler at 931-221-7229. I acknowledge that I have received a copy of this form.

---

Signature of Research Participant

Date:

---

Signature of Researcher:



## Appendix C

### Script for Recruiting Participants

Hello, my name is Jacquelyn Hasse. As Ms. Hollandsworth may have already told you, I am a graduate student at Austin Peay State University. I am finishing up my program there this fall in community counseling. I need your help to finish my program. I am conducting an investigation to see whether bring a horse to visit with you will help you to feel better and less depressed. The horse is a very gentle horse and she loves people to pet her. I hope that you will choose to participate in this study, but you don't have to. If you do choose to, I will ask you to answer a couple of questions about yourself and then I will ask you to fill out a short survey called the Beck Depression Inventory. This will give me your current depression score. I will hold your scores strictly confidential unless you threaten to harm yourself or someone else. In this case, I will notify my supervisor Dr. LuAnnette Butler and Ms. Ruth Hargis, the director of nursing here. I will ask you to complete this survey three times, so that I can get three different scores to see if your depression score does change after bringing the horse. After I am finished with my research, I will give you a framed picture of yourself with the horse. I will also continue to bring the horse if you choose although no additional research will take place.

Thank You.

## Appendix D

### Demographics Form

Age: \_\_\_\_\_

Gender: Circle One: Male      Female

Occupation Before Retirement: \_\_\_\_\_

How would you rate your desire to visit with a horse?

1. Really excited
2. Somewhat excited
3. Neutral
4. Not excited
5. Really not excited



Beck Depression Inventory  
BDI-II

1. Sadness
  - 0 I do not feel sad.
  - 1 I feel sad much of the time.
  - 2 I am sad all of the time
  - 3 I am so sad or unhappy that I can't stand it.
2. Pessimism
  - 0 I am not discouraged about my future.
  - 1 I feel more discourages about my future than I used to be.
  - 2 I do not expect things to work out for me.
  - 3 I feel my future is hopeless and will only get worse.
3. Past Failure
  - 0 I do not feel like a failure.
  - 1 I have failed more than I should have.
  - 2 As I look back, I see a lot of failures.
  - 3 I feel I am a total failure as a person.
4. Loss of Pleasure
  - 0 I get as much pleasure as I ever did from the things I enjoy.
  - 1 I don't enjoy things as much as I used to.
  - 2 I get very little pleasure form the things I used to enjoy.
  - 3 I can't get any pleasure from the things I used to enjoy.
5. Guilty Feelings
  - 0 I don't feel particularly guilty.
  - 1 I feel guilty over many things I have done or should have done.
  - 2 I feel quite guilty most of the time.
  - 3 I feel guilty all of the time.
6. Punishment Feelings
  - 0 I don't feel I am being punished.
  - 1 I feel I may be punished.
  - 2 I expect to be punished.
  - 3 I feel I am being punished.
7. Self-Dislike
  - 0 I feel the same about myself as ever.
  - 1 I have lost confidence in myself.
  - 2 I am disappointed in myself.
  - 3 I dislike myself.

8. Self-Criticalness

- 0 I don't criticize or blame myself more than usual.
- 1 I am more critical of myself than I used to be.
- 2 I criticize myself for all of my faults.
- 3 I blame myself for everything bad that happens.

9. Suicidal Thoughts or Wishes

- 0 I don't have any thoughts of killing myself.
- 1 I have thoughts of killing myself, but I would not carry them out.
- 2 I would like to kill myself.
- 3 I would kill myself if I had the chance.

10. Crying

- 0 I don't cry anymore than I used to.
- 1 I cry more than I used to.
- 2 I cry over every little thing.
- 3 I feel like crying, but I can't.

11. Agitation

- 0 I am no more restless or wound up than usual.
- 1 I feel more restless or wound up than usual.
- 2 I am so restless or agitated that it's hard to stay still.
- 3 I am so restless or agitated that I have to keep moving or doing something.

12. Loss of Interest

- 0 I have not lost interest in other people or activities
- 1 I am less interested in other people or things than before.
- 2 I have lost most of my interest in other people or things.
- 3 It's hard to get interested in anything.

13. Indecisiveness

- 0 I make decisions about as well as ever.
- 1 I find it more difficult to make decisions than usual.
- 2 I have much greater difficulty in making decisions than I used to.
- 3 I have trouble making any decisions.

14. Worthlessness

- 0 I do not feel I am worthless.
- 1 I don't consider myself as worthwhile and useful as I used to.
- 2 I feel more worthless as compared to other people.
- 3 I feel utterly worthless.

15. Loss of Energy

- 0 I have as much energy as ever.
- 1 I have less energy than I used to have.
- 2 I don't have enough energy to do very much.
- 3 I don't have enough energy to do anything.

16. Changes in Sleep Pattern

- 0 I have not experienced any change in my sleep pattern.
- 1a I sleep somewhat more than usual.
- 1b I sleep somewhat less than usual.
- 2a I sleep a lot more than usual.
- 2b I sleep a lot less than usual.
- 3a I sleep most of the day.
- 3b I wake up 1-2 hours early and can't get back to sleep.

17. Irritability

- 0 I am no more irritable than usual.
- 1 I am more irritable than usual.
- 2 I am much more irritable than usual.
- 3 I am irritable all the time.

18. Changes in Appetite

- 0 I have not experienced any changes in my appetite.
- 1a My appetite is somewhat less than usual.
- 1b My appetite is somewhat greater than usual.
- 2a My appetite is much less than before.
- 2b My appetite is much greater than usual.
- 3a I have no appetite at all.
- 3b I crave food all of the time.

19. Concentration Difficulty

- 0 I can concentrate as well as ever.
- 1 I can't concentrate as well as usual.
- 2 It's hard to keep my mind on anything for very long.
- 3 I find I can't concentrate on anything.

20. Tiredness or Fatigue

- 0 I am no more tired or fatigued than usual.
- 1 I get more tired or fatigued more easily than usual.
- 2 I am too tired or fatigued to do a lot of the things I used to do.
- 3 I am too tired or fatigued to do most of the things I used to do.

21. Loss of Interest in Sex

- 0 I have not noticed any recent change in my interest in sex.
- 1 I am less interested in sex than I used to be.
- 2 I am much less interested in sex now.
- 3 I have lost interest in sex completely.



## VITA

Jacqlyn Shea Brown-Hasse was born in Nashville, Tennessee in 1978. She became interested in horses when she was young but because of where she lived, she was unable to have one. She and her spouse purchased their first two horses three years ago, one of which was the horse that was used in this study. She attended East Cheatham Elementary School and graduated from Cheatham County High School in 1996. She immediately went on to undergraduate school at Austin Peay State University and graduated with a Bachelors of Science degree in 2000. She started the Community/Agency Counseling program at Austin Peay in the fall of 2000. The idea for this study came out of her desire to see others get the chance to interact with horses and from a phone call from another facility that was interested in having a horse come to visit. This research was not conducted at this facility due to the fact that they had found someone else to bring a horse. While at Austin Peay, she did an internship counseling troubled youth who were in state's custody which led to an interest in this population.