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The Psychological Benefits of Animal Assisted Therapy on Elderly Nursing Home Patients

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Honors Project Literature Review

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Abstract

This literature review of the benefits of Animal Assisted Therapy (AAT) is centered on four scholarly articles published in major psychological journals discussing the reduction of loneliness, anxiety, depression, and cognitive impairments as well as the increase in well-being and happiness in the elderly nursing-home population. Many time these residents are abandoned by family and experience little-to-no interaction with others due to understaffing at these homes. My goal through this literature review was to bring attention to an alternative form of therapy for these patients. Often patients grow sick from depression and lose their sense of self-worth but, with the addition of AAT in their daily lives, they can have something to look forward to as well as someone that is really looking forward to keeping them company. This therapy has substantial amounts of psychological and cognitive benefits as discussed in this review, and I believe that this is a new and innovative way to support our growing elderly population in the next stage of their lives.

The Psychological Benefits of Animal Assisted Therapy

On Elderly Nursing Home Patients

The U.S. geriatric population is on a serious rise and nursing homes are beginning to fill up rather quickly. The aging baby boomers are reaching older adulthood, and they make up a rather large portion of our population. With this being said, nursing homes do not always have the greatest reputation for feelings of warmth, inclusion, and happiness. Too often, older adults are abandoned and left to live and eventually to die alone in these homes with little-to-no support beyond basic caretaking. Often, the elderly admitted into nursing homes are forgotten by family members and alone for days, months, years, or sadly sometimes the rest of their lives. With oftentimes low staff-to-resident ratios, residents often have little to no social interaction with others and thus can lose track of time or dates, as well as develop major psychological disorders. They may lose their zest for life and quality of happiness.

With the increasing demands on nurses in these nursing homes, there is very little time for quality social interaction or conversation. Nurses must find the time to accommodate all the patients' "basic physical needs," which can be quite demanding with higher rates of patient residency. What often gets overlooked is a patient's mental and emotional health. Not only is this extremely important to the patient's overall well-being, but what most do not consider is that a patient's mental and emotional health really can play a toll on these "necessary" physical needs. Without a patient's mental health being intact, this could lead to disorders such as depression for example. This disorder can lead to a lack of sleep, eating, and activity therefore result in declining health. It is of the upmost importance that we take our older population's health into account.

Considering this growing population of the elderly, an alternative solution for the improvement of mental health within nursing homes is more essential than ever. A cost effective, simple, and efficient strategy of doing just that is incorporating Animal Assisted Therapy (or AAT) into the lives of these individuals. The goal of AAT is to improve a patient's social, emotional, and/or cognitive functioning. Although often debated, it is commonly claimed and widely known that animals bring happiness and calmness, as well as improve our overall well-being as humans. AAT can involve a variety of animals, not just the typical "therapy dog." In fact the studies involved in this literature review involve a variety of animals. Furthermore, these interactions do not necessarily have to be long. They can be as simple as a half hour a day to make a major difference in someone's life. These experiences through therapy sessions could lead to reduced loneliness, depression, and anxiety, as well as an increase in overall well-being. They can give these elderly patients a sense of worth and belonging. Just because someone is physically alive does not indicate that they are truly emotionally living. They need something to look forward to, and they need someone to look forward to seeing them equally as much. If animals indeed improve people's quality of life and lift their spirits, it is necessary to provide these abandoned, lonely, or cognitively impaired individuals with this opportunity. They would benefit the most from these service animals.

In this literature review I will be touching upon four separate studies that all found evidence to support the claim that AAT makes a vast positive difference in the lives of elderly residents/patients. Some of the articles document a decrease in patients' loneliness, some explain a decrease in symptoms of mental disorders and cognitive impairments, and another explains an increase in overall well-being. Overall, there seems to be a multitude of benefits to AAT and a positive correlation between it and an individual's happiness and health.

In the first study on AAT, researches aimed to assess whether a pet therapy program had a positive effect on the mental status and perceived quality of life in cognitively unimpaired institutionalized elderly (Columbo, Buono, Smania, Raviola, & De Leo, 2006). Seven nursing homes for the elderly in Veneto Region of Northern Italy participated in the project, which involved 144 cognitively intact elderly residents (97 women and 47 men). The mean age of the overall sample was 78. The elderly residents of the nursing home admitted into the study were then randomly divided into three groups: Group 1 (consisting of 43 participants) was given a plant, Group 2 (consisting of 53 participants) was given nothing, and Group three (consisting of 48 participants) were given a canary. The groups were put together based on education and their age. Those elderly who received a canary were given care instructions. The same went for those who were given a plant. The participants were observed over a period of 3 months. Before beginning the experiment, the participants were given the following tests;

"MMSE (Folstein et al., 1975) to assess baseline cognitive status, the LEIPAD II-Short Version (LEIPAD-SV) (De Leo et al., 1995) and the brief symptom inventory (BSI) (Derogatis and Melisaratos, 1993). LEIPAD-SV is a questionnaire composed of 25 items, divided into six subscales: Physical Functioning Scale (PFS), Self-Care Scale (SCS), Depression and Anxiety Scale (DAS), Cognitive Functioning Scale (CFS), Social Functioning Scale (SFS) and Life Satisfaction Scale (LSS), designed to gauge subjective perception of quality of life in the elderly" (Columbo et al., 2006, p. 209).

Each item in the tests was assessed by a score from 0 to 3, where 0 was the best condition and 3 was the worst, except the BSI. The BSI in particular is a questionnaire for self-evaluation of psychopathological symptoms (Columbo et al., 2006). Consisting, of 49 items forming nine subscales that measure: Somatization, Obsessive– Compulsive, Interpersonal Sensitivity,

Depression, Anxiety, Hostility, Phobic Anxiety, and Paranoid Ideation. The BSI was instead

scored from (0–4). To avoid bias in any way, or distorted test information, psychologists did not

know whether residents received an animal or a plant. After being introduced to the experimental

condition, no further tests were given to the participants. The ''relationship'' between resident

and plant or resident and animal continued without any interruption. At the end of the 3 months,

the same tests (MMSE, BSI, LEIPAD-SV) were given a second time. Overall test scores during

pre- and post-intervention were evaluated and compared by t-test, chi square, and analysis of

variance.

When results were drawn, it seemed as though the animal group scores, although not

exactly statistically significant, generally improved on the Somatization, Obsession–Compulsion,

Depression, and Phobic Anxiety subscales of the BSI (Columbo et al.,2006) Not only did those

taking care of an animal surpass the other groups in these specific sub categories, but they also

seemed to have gained the most benefit in quality of life by improving in all LEIPAD-SV

subscales. The difference was statistically significant for the perceived physical health subscale

as well as on Self-Care. A significantly higher number of members of the canary group perceived

that their own autonomy more positively than those of other groups (especially the plant group),

15.67, $p < .001$ at the posttest period. "Many of the differences displayed for the other BSI and

LEIPAD-SV subscales tended toward statistical significance ($p < 0.06$), again indicating an

improvement in the participants who were given a canary" (Columbo et al., 2006, p. 212).

Conclusively, the canary's presence improved BSI mood outcome, which supports the

claim that the animal played a role in participants avoiding depressive and obsessive compulsive

symptoms as well as anxiety and paranoid ideation (Columbo et al., 2006). Hostility and

somatization, although not statistically significant, still were improved in participants. The most

important and significant find was the animal group increased value and quality of life as shown

through the LEIPADSV subscales.

I enjoyed Columbo et al.'s (2006) study and that fact that they did not just use AAT and a

control group, but rather had another group that involved taking care of plants. I do like that they

incorporated the plants into their study because we can then further counter the argument that it

is not so much the animals' effect, but the effect of taking care of something in particular. Plants

are great, but they do not have the loving and caring effect that animals have, and plants tend to

lack lively presence and spirit. Plants do not exactly keep you company in most cases. This study

helps debunk this common misconception, and it shows an array of benefits to animal assisted

therapy through the many subcategories in the BSI questionnaire given to participants. There is

so much more to experiencing animals than just having something to take care of.

I believe the studies limited time frame could show different results than one that was

conducted over a longer time frame. Giving the tests periodically throughout a lengthier study

could have avoided the possible effects of a bad day or distractions on the participants. Although

a larger sample would be needed to show more convincing results, this compelling research

reinforces the proposition "that pet therapy may have a beneficial effect on the psychological

wellbeing of institutionalized elderly and, in particular, on aspects related to depressive

symptoms and perception of quality of life" (Columbo et al., 2006, p.207). This study gives a

refreshing approach to the current available literature.

In Banks and Banks' (2002) study their goal was to identify any support in the hypothesis

that animal-assisted therapy reduces loneliness in the resident population in long-term

care facilities. The research study was conducted in three long-term care facilities in a city in

southern Mississippi. The number of residents recruited from each nursing home was 11, 16, and

18. Residents were randomly put into one of three groups resulting in 15 residents each. The groups were organized like so: Group 1 (the control group) experienced no animal-assisted therapy, Group 2 experienced one 30-minute session of animal assisted therapy per week, and finally Group 3 experienced three 30-minute sessions of the animal assisted therapy per week. AAT consisted of bringing a temperament checked/certified therapy dog into the long-term care facilities. The animal's actual owner accompanied the dog during the session, but the owner did not interact with either the dog or the resident during the AAT session. The therapy session took place in the participant's room, but they also had the option of walking the pet in the facility's hallway. The participants were able to hold, stroke, groom, walk, talk to, and play with the animal. The same animal was used for the same participant for a period of 6 weeks. Participants were given the Mini-Mental State Examination, the Demographic and Pet History Questionnaire (DPHQ), and UCLA-LS. "The DPHQ is a 26-item instrument questionnaire used by us to elicit data on demography, the history of pet ownership, the ages of pet ownership, the types of pets previously owned, the length of ownership, and the desire to have an animal in the long-term care facility" (Banks & Banks, 2002, p. 430). "A one-way analysis of covariance (ANCOVA) was used to analyze the data with the pretest score as the covariant, treatment (0, 1, and 3 sessions/week) as the independent variable, and the post-test score as the dependent variable" (Banks & Banks, 2002, p.430).

It's important to mention that these participants showed a strong history of association with animals as pets, many for the majority of their lives. A majority of participants had pets at or before the age of 8 years old and were responsible for the pet's well-being. The majority had dogs as pets and the remainder had either cats or both. This eliminates the possibility of no affect from the animal assisted therapy due to a lack of liking of animals. Animal Assisted Therapy

resulted in participants' loneliness being statistically significantly reduced. "The ANCOVA was

significant, F (2, 44) = 5.21, p = .001, showing that there were statistically significant differences

among the three groups" (Banks & Banks, 2002, p.431). When comparisons were done, they

showed that the differences were due to the reduced loneliness because of AAT. There was

significant finding that showed AAT was very effective, but there was no statistically significant

difference between the groups given one and three AAT sessions per week.

One quite interesting finding of Banks and Banks (2002) study was the many sudden

memories shared by the residents. While visiting with the animal, the residents often starting to

talk to the animal about past events with their pets. For example, one participant remembered

how her dog would sit at her feet and keep her company in the past. Not only did the animal

therapy keep the residents company and bring joy, but they also drew up old memories that

caused further euphoria. Researchers ultimately found that the loneliness of residents, who

missed their own pets and desired to have an animal, in long-term care facilities improved with

AAT and that this method is effective in reducing loneliness in long-term care facilities.

Although increasing the animal therapy sessions to three times per week did not have a

significant effect on further reducing loneliness, continuing therapy beyond the common 6 weeks

may have. Again, Banks and Banks (2002) study could have been extended a bit more. I believe

the randomization of the study was a huge advantage to the research. Many think that if people

are not willing to be a part of the animal-assisted therapy group in particular, and rather be a part

of the control, it would create an obvious dislike of the therapy and skew the results. Although I

can understand this idea, I actually believe that simply giving those who favor animal therapy the

sessions in the first place is biasing the results just as equally. By randomizing, this expands the

study's generalizability as well as its external validity overall. They did make sure that individuals did enjoy pets, otherwise it would not be a fair and ethical study.

To clarify, I just found the approach of getting an entire group of animal lovers and randomly splitting them into the groups more appropriate in measuring the effects of no-animal contact. This way, the results are not as simple and obvious. For example, if people who dislike animals are all placed into the no animal-contact control group, they obviously will not be effected by the lack of animal contact and therapy. It gives the results some clearer validity and strength. Also, this is a very different take on things but perhaps the availability of a pet daily or on an as needed basis may have also increased the effectiveness of the AAT. Having the therapy animals when and where you need them could make an inconvenient and unexpected stressful moment a lot more manageable and thus increasing its effectiveness. Overall, the researchers took a detailed approach to the generalization of the study as well as gaining supportive evidence that shows a single, 30-minute session of AAT per week for 6 weeks significantly reduces loneliness as measured by the UCLA-LS and was as effective as three sessions per week. The results showed that AAT is effective in fighting against the too common loneliness experienced in long-term care facilities.

I did not want to focus just on those who did not suffer from any cognitive impairments or mental illness because the benefits animal therapy do not necessarily discriminate. In Moretti et al.'s (2011) study, they set out to evaluate the effects of pet therapy on cognitive function, mood and perceived quality of life in elderly inpatients who are affected by dementia, depression and psychosis. The mean age of the overall sample was 84.7 years old. The criteria to be involved in the study included to be at least 65 years old, to be institutionalized for at least 2 months, and be affected by mental illness (e.g, Alzheimer's disease, vascular dementia,

secondary dementia, mood disorder, psychotic disorders). Ten participants were assigned to the

pet therapy group and 11 to a control group. Groups were matched on the basis of

sociodemographic characteristics along with their clinical features to create two similar groups.

To create a baseline of participants' cognitive status and depressive symptoms, they were given

the Mini-Mental State Examination (MMSE) and the Geriatric Depression Scale (GDS). A brief

questionnaire that focused on self-perceived quality of life was administered to all participants as

well.

The AAT, or lack of for the control group, lasted for 6 weeks and took place in the

nursing home (Moretti, et al., 2011). This study was a bit different because it took place both

inside and outside the nursing of the home. The pet activity involved bringing dogs in contact

with all participants for 90 minutes once a week. Residents had the option of holding, stroking,

walking, talking to, and playing with the animals. The residents were under the supervision of

dog educators while interacting with the animals. Although the control group participants had

seen the animals entering the nursing home, they could not interact with them. The three Golden

Retrievers and Pincher were temperament tested, used to working with people affected by mental

illness, and professionally trained for pet therapy sessions. After the pet sessions, the same tests

given prior to the animal interactions were given again (posttest) as well as a questionnaire on

their perception of the intervention. During the pet session, the dog trainer, the psychologist, and

the staff were not made aware of the results to avoid bias. The physician who gave the MMSE

and GDS was also unaware of who was assigned to which condition. "Independent and paired

sample tests were used to compare frequencies and means between and within groups,

respectively" (Moretti, et al., 2011, p.127).

The participants' mood disorders improved in both groups (Moretti et al., 2011). In the

pet group, the mean score on GDS decreased and the between-groups comparison showed

improvement that trended toward significantly (*p*= .070). The MMSE results supported the claim

that cognitive function was improved and advanced between pretest and posttest in participants

who experienced AAT (mean increase 4.5 scores, *p* = .06). More specifically, researchers saw a

clinically important and significant effect of pet intervention on cognitive function. "A study

population, consisting of 10 institutionalized elderly participants affected by dementia, found a

significant improvement in cognitive functions and also in motivational and emotional aspects"

(Moretti, et al., 2011, p.128). The control-group's MMSE scores may have increased by two

minor points, but these small differences were not statistically significant (*p*= .094). Quality of

life in the AAT group had a major positive increase in the pet group and in the satisfaction

questionnaire given to participants at the end of the study; furthermore, all of them stated the

experience was an enjoyable one (Moretti et al., 2011). Impressively, nine of ten participants felt

a calm feeling and experienced fond pet memories due to their interactions with the animals

(Moretti, et al., 2011). All wanted to continue the AAT sessions and recommend the experience

to others.

In summary, pet therapy improved participants' depressive symptoms by 50%, MMSE

scores were twice as high in the pet-group as in the control groups and self-perceived quality of

life was also greatly improved (Moretti et al., 2011). Some biological causes to this increase in

happiness, well-being, and cognitive function include the affective-emotional mechanism

hypothesis. This explains "a relaxing human–animal bond acts on adrenal and other

corticosteroid hormones inducing a reduction of arterial pressure and cardiorespiratory rates"

(Moretti, et al., 2011, p.128). A person is persuaded to take care of themselves due to the

psychological stimulation created by the presence of an animal and its need for care. "The game system theory suggests that playing with an animal can increase defense and augment recovery potentialities; furthermore, an effective, emotional, psychological stimulation is known to solve important psychosomatic problems" (Moretti, et al., 2011, p.128).

Moretti et al.'s research stood out from the rest due to their inclusion of participants suffering from cognitive dysfunction. I appreciated the fact that they decided to take the standard AAT research steps and apply them to individuals suffering more than others. This expands the literature we have available and allows for more creative and inclusive research in the future that is more generalizable. As I searched through the literature, I realized that many experimenters wanted to keep the research as simple and clear as possible so they left out many possible circumstances individuals could be facing such as mental illness or disorders. This study allows those often forgotten about or left out due to more complicated results to be included. The results may be more difficult to interpret but life is not simple and clean cut. Leaving out those who suffer from these illnesses could be deterring these individuals from experiencing an extremely helpful alternative form of therapy. As all psychological professionals understand, no two people are exactly alike and we as humans have an incredible amount of individual differences. Even Moretti et al. (2011, p. 128) themselves explained: "The beneficial effect of pet therapy on elderly patients affected by different psychiatric disorders further strengthens currently available literature, suggesting a positive influence on depressive symptoms, both in otherwise healthy elderly and in participants with chronic age-related disabilities." I enjoyed that the researchers included not only the results of the study but also a biological explanation for what caused the increase in well-being and cognitive functioning. The researchers made a significant effort to

avoid bias whatsoever throughout the study from both physicians and nurses as well as themselves.

Some limitations of the study included a lack of randomization in the studyand a rather small sample size. Like many of the other studies I have read and mentioned in this review, the short-term evaluation could have played a major role in the effect of AAT. The researchers explained that they used a limited neuropsychological test and did not collect information on behavioral disturbances. The authors also explained that because the pet therapy also involved a handler, it is not fully clear whether the therapeutic effect was due to the actual dog, the dog's handler, or both. The research, although a bit more intricate and complicated due to the individual differences of participants' mental functioning, clearly explained AAT's effects on the mentally disordered. The data supported the evidence in favor of pet therapy being an efficient positive influence on elderly patients affected by cognitive disorder as well as other psychiatric disturbances.

Finally, to further the research of AAT's many positive effects, Kawamura, Niiyama, and Niiyama's (2007) study evaluated the psychological and behavioral effects of AAT on elderly residents of a nursing home during a long-term period of time, rather than the typical short term (which often ends in some insignificant results). The ten participants from a residential nursing home in a large city in northern Japan were between the ages of 75–95 years old. There was 65% attendance for the frequent AAT sessions. These participants, unlike in the previous studies, involved more than just the unimpaired or the mentally ill but a combination of many ailments. Six of the participants suffered from vascular dementia, four were senile, and overall every participant had some sort of psychological and behavioral problems that ultimately deterred them from living at home with their families. Some experienced physical problems such as paralysis

and nine participants had symptoms of depression. One participants in particular was violent and used rude language towards others.

The participants were visited by volunteers and their small dogs (two papillons, one miniature dachshund, one Yorkshire terrier). There were two visits made twice a month, about four dogs being taken each time. Therapeutic activities included feeding, holding, and playing with dogs. The participants were split into small groups to interact with the dogs for about 30 minutes during each 2-hour session. The participants had goals to be met during therapy, so volunteers helped out and guided each of them to fulfill those goals. The researchers reported:

> "Subjects played with the dogs; playing a game where a subject hides food in a
> small case and a dog looks for it. Some subjects held, petted, watched and talked
> to the dogs. Some were able to play with the dogs by themselves and some needed
> a volunteer's help because they were physically or cognitively unable to play with
> the dogs without help. All subjects were able to call the dog's name or remember
> that they played with the dogs at the next session (Kawamura et al., 2007, p.10).

Data collection methods included the Japanese version of the GBS Scale and Mental Function Impairment Scale (MENFIS) (Kawamura et al., 2007). Data were collected a total of four times during the years 2003–2005. "According to GBSS-J, the scores for intellectual function, spontaneity, emotional function and other mental functions decreased during the first 6 months of the study and then increased until the twelfth month" (Kawamura, Niiyama, & Niiyama, 2007, p. 11). The score for motor function increased over the 12 months and comparisons showed there were significant decreases in impaired orientation in space and emotional liability during the first 6 months. Overall, the scores may have initially gone in a

negative direction, but they eventually made leaps and bounds in increasing significantly as far as mental functioning and health. This shows the importance of time in a study.

According to MENFIS, scores decreased the first 6-month period but increased from 6 months to 12 months (Kawamura et al. 2007). Scores decreased in impaired emotional function, emphasizing impaired suitability of emotional expression and impaired stability of emotional expression during this 12-month period. These researchers concluded that after 6 months of AAT experience, there were some improvements in mental functions but a decrease in motor functions. "The total scores of GBSS-J and MEMFIS (not including the motor function item) decreased during the first 6 months and then increased during the final 6 months" (Kawamura et al., 2007, p. 11). "In the emotional function item in MENFIS, the scores decreased over the entire 12 months showing continuous improvements in patients' emotional well-being" (Kawamura et al., 2007, p.11). The worsening of motor functioning is believed to be due to the extremely old age of many of the patients who suffered simply from the passage of time. The older you get, the harder it is to be mobile. Also, these therapy sessions were not geared towards improving motor functioning in the first place. This therapy is more for the improvement of an individual's mental improvement and well-being. The results clearly reflected this. Kawamura et al.'s (2007) study supported that AAT can greatly improve the mental health of those suffering from a variety of ailments, no matter how elderly.

Kawamura et al.'s (2007) study is the most well done study I have seen throughout my long search of AAT based literature, as well as my favorite to read. They (finally) held research over a long period of time rather than a rushed short-term study that could have resulted in a much different outcome. They had an interesting take on the experiment when including participants who experienced a variety of ailments, from types of severe dementia to those

suffering from harsh behavioral and psychological functioning issues keeping them from daily

functioning. These researchers made a point to make sure that each resident participating in the

study had a daily goal in mind when working with the animals and were given assistance, rather

than just exposing them to the animal and letting random interactions take place. These

interactions, being goal-driven, could have really increased the AAT's overall quality and likely

increased its positive effect. Having a goal in mind, gives the participant purpose and improves

their quality of life alone which is an important addition to the study.

   Some alternatives to consider that could have skewed Kawamura et al.'s (2007) data

include that after 6 months the animal therapy was no longer considered a new and fresh

stimulation for the participants. The participants in this research had many varying mental or

cognitive problems such as depression and violent behaviors, and they could not play with dogs

during therapy without some support. The researchers explained that in the future it is important

that the staff helped promote communication between the participants and the animals as well as

observe what their specific needs are. They also suggested that after about 6 months of the

therapy each participant's needs and wants should be reevaluated and examined to better

accommodate their goals. By doing this, it could give the participants some new and fresh

stimulation and help prevent the stagnation that was experienced in this study.

   Some further limitations to Kawamura et al.'s (2007) study include the lack of a control

group, which is needed to more precisely examine the effects of AAT for elderly residents. The

small group used in this study limits the generalization due to elderly peoples in nursing homes

having a huge variety of impairments. Also, providing a more detailed examination of the exact

reactions of the residents to the animals could have improved the results a bit and created a better

therapy session. Although this study faced some minor limitations, as do all studies, most details

of this study were planned carefully and the researchers did a laudable job at finding ways to help facilitate the effects of the AAT process.

Reading through and critiquing these studies made me consider what I would do if I conducted my own study. I would include at least 10 different nursing residences in my study and recruit at least 30 participants per home. I would allow all, whether cognitively impaired or not, into the study and randomly assign participants into different categories when gathering results from the study. I would want to include as many different types of individuals as possible considering the major variances among humans in everyday life. I would conduct the study over a period of 3 years but I would definitely be sure to include different time markers to readjust goals as well as make any changes to the therapy sessions if needed. I would create 2 hour sessions four days a week to allow participants optimal animal experience. A control group of no-animal interaction would be included, but I would make sure that all participants enjoyed animals in some way. By doing this, the results would not be skewed due to people who dislike animals not experiencing an effect or having a negative effect from animal exposure during sessions. I would incorporate a variety of therapy animals (not just dogs) and allow the participants a chance to choose which animal they would prefer, whether that be a dog, cat, bird, etc. I would create different challenges or games to complete with the animals and not just simply allow residents to pet or talk to the animals. Physical activity, even the most minuscule of such, helps the brain as well. This process would give the therapy a new twist and keep things fresh and stimulating over the long period of time. Ages involved the study would include 65 years of age and older and I would even include those suffering paralysis. AAT does not discriminate in who exactly it helps. Animals have a major impact on one's mood and well-being, no matter what the individual's circumstance.

The existing studies, although having some disadvantages and limitations, do make a compelling argument in favor of Animal Assisted Therapy. I chose to review these four studies due to their unique way of approaching animal therapy's benefits, whether it included a planned control group to examine the effects of just simply caring for an animal or plant or included cognitively impaired and severely depressed individuals. These four studies cover all grounds and reflect the diversity of the struggles experienced by today's elderly in nursing homes, both physical and mental. Animal Assisted Therapy can reduce the loneliness experienced by too many, creating an alternative form of companionship and thus bringing happiness, a greater sense of well-being, and distracts from individuals' physical, mental, and cognitive ailments.

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