

## The Benefits and Limitations of Pet Therapy for People with Dementia

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### **Abstract**

Evidence of a human-animal bond goes back to the origins of man. More recently, therapy that utilizes animals has been implemented in long-term care facilities to aid in the well-being of people with dementia. Pet therapy, or animal-assisted therapy, increases engagement with the environment, decreases agitation and depression, and promotes social interaction. Advances in technology have led to alternatives to using live animals. For example, both robotics and video technology have shown promising results. However, several factors limit the ability to evaluate animal-assisted therapy including a lack of controlled studies, the impact of clients' previous relationships with animals, and the use of by-proxy measures. Addressing these factors allows for a clearer picture of the benefits of animal-assisted therapy for people with dementia.

Novelist George Eliot once said, "Animals are such agreeable friends—they ask no questions, they pass no criticisms" (The Quotations Page). The nonjudgmental manner of animals makes them the ideal therapists for people in need of a companion, especially those with physical and mental disabilities. According to the American Veterinary Medical Association, 60 percent of households in the United States have at least one pet (ASPCA 2010). This statistic—along with studies on the human-animal bond—shows that pets are often an important part of a family. In particular, animals can provide a source of social support. This conclusion is supported by the number of Americans who "talk to their pet as they would a person, or consider their pet a confidant" (Beck and Katcher 2003). For older adults facing memory loss, animals supply unconditional love and companionship.

More than five million people in the United States are currently living with Alzheimer's disease, and this figure is projected to increase dramatically in the coming years (Alzheimer's Association 2010). Alzheimer's is a specific type of dementia, which is a general term for the progressive loss of cognitive ability. While there are

many forms of dementia, Alzheimer's is the most common. There is no cure for this disease, so various types of therapy are employed to improve individuals' quality of life. Some of the behavioral symptoms of Alzheimer's include depression, apathy, irritability, anxiety, restlessness, and difficulty engaging in social activities (Motomura, Yagi, and Ohyama 2004). One form of treatment that addresses many of these symptoms is animal-assisted therapy (AAT).

When used with people who have been diagnosed with dementia, AAT takes advantage of the human-animal bond to decrease behavioral and emotional problems and to increase social engagement and communication. People with Alzheimer's may experience difficulty finding the right words or forget what they wanted to say. Increased communication, both verbal and nonverbal, is an important benefit of AAT because it allows people with dementia to express their emotions and ideas and to relate to others. The ability to communicate can decrease the isolation and depression felt by those who have been diagnosed with dementia.

Many people assume that interacting with animals is advantageous, but what does the research indicate, especially with regard to people with dementia? There has been little empirical data to demonstrate who benefits the most from AAT and under what conditions these benefits can be maximized. In addition, the quality of current research needs to be examined, along with questions that have not yet been addressed. It is important to explore these questions in order to understand whether or not AAT is effective for people with dementia.

### ***A Brief History of AAT***

American child psychiatrist Boris Levinson is considered the father of pet-facilitated therapy. In the 1960s, he began to use dogs in his sessions with children suffering from emotional or psychological disorders. He found that when a dog was present, the child's communication increased and he or she was more likely to open up about his or her feelings (Knight and Edwards 2008). Levinson was not the first to use animals as therapists, but he generated interest in the human-animal bond and paved the way for research to be conducted on the possible benefits of AAT, not just for children, but also for the terminally or chronically ill, the elderly, and the depressed.

AAT became widespread in the 1960s and 1970s when the use of complementary and alternative medicine gained popularity in the United States. People wanted to explore different forms of therapy like music or art instead of relying solely on a biomedical approach to treatment.

However, despite its increased use in hospitals and nursing homes around the world, AAT has never been well-regulated. It has always relied on volunteers who are willing to take the time to train their animals and themselves to become practitioners of this form of therapy. There is no governing body that controls the certification of animal-assisted therapists or determines the criteria for training people and their pets to work with vulnerable groups. While AAT has come a long way in achieving its status as a respectable form of treatment for various populations, there is still the question of whether the training of animal handlers and their pets is rigorous and effective.

### ***Training Guidelines and Procedures***

To become an animal-assisted therapist, an animal and owner undergo some sort of training to be able to visit people in a health care setting. Various training programs

are available. For example, the Delta Society is a non-profit organization whose mission is to “help lead the world in advancing human health and well-being through positive interactions with animals” (Delta Society 2009). Through their Pet Partners® Program, people can train to visit a variety of facilities such as hospitals, nursing homes, schools, and rehabilitation centers. This program is the only national registry that requires training and screening of animals and their handlers.

Training is provided either through hands-on workshops with licensed instructors or through a home study course. Then the volunteer and his or her pet are evaluated by licensed professionals from Delta Society. For example, the visiting animal must pass a health screening and behavioral tests that show competence in interacting with vulnerable populations. Not every pet has the proper temperament to be around people whose behavior might be unpredictable, as can occur in people with dementia. When people complete the Pet Partners® Program, they are registered as having met the minimum requirements of the Delta Society, but they are not certified.

There are other programs like the Delta Society Pet Partners® Program. Many communities offer obedience classes for dogs, and there are various ways to become registered or certified in AAT. Unfortunately, there is no national organization that oversees the training of animals and their owners. This can make it difficult for someone interested in AAT to find the information they need. A standardized curriculum and evaluation would ensure that every owner and pet that visits a facility had met the minimum requirements to be certified by a central organization.

### ***The Benefits of AAT for People with Dementia*** **Increased Communication and Social Interaction**

One of the benefits most commonly seen with AAT is an increase in social behavior including increased verbal and nonverbal communication. Nancy E. Richeson (2003) conducted a study with 15 nursing home residents who had been diagnosed with dementia. She found that after daily AAT sessions over a period of three weeks participants showed a statistically significant increase in their levels of social interaction between the first week and the last week of the intervention. To determine whether social interaction increased after a therapy session, Richeson used a flow sheet that rated nine items, some of which included “looked at dog,” “spoke to dog,” “reminisced about own dog,” “spoke to handler,” and “remembered handler’s name.”

Richeson added that during the experiment the nursing staff would “engage the participants in conversation regarding the dogs that were about to visit” (2003, 357). It seems that the dogs created a common thread that connected the residents to the staff and gave them something positive to communicate and reminisce about together.

The residents were not just interacting with the dog, but also with the handler, other residents, and staff members. This brings up the question of whether the AAT itself increased the social behavior of the residents or whether it was confounded by the staff’s positive reactions to the therapy. Richeson stated that “the intervention seemed to create an atmosphere of excitement and camaraderie for everyone involved” (2003, 357). Perhaps the residents were simply picking up on the anticipation that the caregivers felt when a dog was brought into the facility, and this led them to increase their social behaviors.

In Holly A. Draeger Chronis’s study of the effects of pet therapy on social interactions and communication among residents of a long-term care facility, she found

that 100 percent of participants talked either to the dog, the handler, or a staff member if one was present. Data were gathered via a questionnaire read to participants called Client Pet Therapy Research Tool. The questionnaire included yes or no items such as “I reach out to touch people and/or animals” and open-ended questions like “When the animal is here, how do you feel?” A Pet Therapy Direct Observation Research Tool was also utilized by the researcher, who observed the participant during the session and marked any incidences of verbal and nonverbal communication, such as talking, smiling, touching, looking, laughing, and leaning (Chronis 1997).

After the data were collected, each participant response from the questionnaire was coded as either positive (for example, “I love dogs” and “happy”) or negative (“I don’t like them” or “no different”). More than 85 percent of the responses were positive. The researcher also noted the percentage of participants who engaged in each of the social behaviors described in the direct observation portion of the study. For example, it was found that smiling was observed 92 percent of the time and looking at the dog occurred 83 percent of the time (Chronis 2007, 46–47). Overall, these results show a positive correlation between pet therapy and elderly social interaction.

However, there is the possibility that the interpretations of the data were biased, especially since observations of clients’ behaviors were made by the researchers. For example, while it is easy to observe a smile, it is more difficult to figure out the motivation behind the person’s expression and whether or not it has any connection with the therapy dog. This particular study was descriptive instead of experimental, so it cannot give a definitive answer about the effects of AAT on elderly residents. It also did not include people with dementia, which likely would have affected the verbal communication aspect of the study.

The results of these studies suggest that AAT can increase communication and social behavior in people who have been diagnosed with dementia. Social interactions are not only directed toward the animal, but also toward the handler and staff members. While these findings seem promising, it is unclear whether it is the presence of the animal itself that causes the increase in social behavior or whether it is confounded by the presence of the animal’s handler and the reactions of the caregivers toward the animal. Further studies should address this issue by controlling for outside factors.

### **Decreased Agitation**

In addition to its effect on communication and social interactions, AAT has also been shown to reduce agitation levels in patients with dementia. Mara M. Baun and Barbara W. McCabe (2003) found that the presence of a therapy dog decreased agitation in people with Alzheimer’s who resided in a special care unit. They also found that these effects were most prominent during the late afternoon/early evening, a time that is associated with sundown syndrome, which refers to an increase in confusion and agitation that occurs at this specific time of day. It is possible that the dog had a calming or stress-relieving effect on the patients, which decreased the likelihood that they would exhibit agitated behaviors such as screaming or biting.

Richeson (2003) also studied the effects of AAT on agitation in nursing home residents who had been diagnosed with dementia. The participants in her study were selected based on several criteria including having at least three documented agitated behaviors in the previous two months and needing an intervention for agitation. Results

showed a statistically significant decrease in agitated behavior immediately after the intervention and an increase in these behaviors during the follow-up phase. These results indicate that, while the therapy was effective in the dog's presence, it did not have long-lasting effects on agitation levels. In this study, the therapy sessions were conducted over a nine-week period, but Richeson concluded that "it is not known what is needed to maintain levels of functioning reached after the initial intervention phase" (2003, 357). Few studies have addressed the issue of how often AAT should be implemented (for example, daily versus weekly) and for how long of a period.

### **Decreased Stress**

While increased social behavior and decreased agitation seem to be the most commonly studied benefits of AAT, other effects have also been evaluated. For example, researchers have looked at the link between pet therapy and stress levels. Mary M. DeSchraver and Carol Cutler Riddick (1990) examined the effect of watching an aquarium on the stress levels of people in a publicly subsidized housing unit for the elderly. In the study, participants watched either a fish aquarium or a fish videotape. Their stress levels were measured before and after the intervention using pulse rate, skin temperature, and muscle tension. Elevated pulse rates, decreased temperature, and high muscle tension are signs of stress, so researchers monitored changes in these three areas. While there were no significant results based on these physiological measures of stress, self-reports by the participants indicated that they found the activity to be enjoyable and relaxing.

DeSchraver and Riddick (1990) also suggested that if a live aquarium is used in a long-term care facility, the residents will benefit more if they are able to make decisions about tank decorations or the types of fish in the tank. In their study, the researchers found that each of the residents who observed the live aquarium took a special interest in one or two fish, and often named these fish. This bond increased the likelihood that the resident would talk about his or her favorite fish with other residents and staff.

### **Decreased Depression**

Few studies have examined the relationship between AAT and depression, but there is evidence that attachment to a pet has a positive effect on depressive symptoms. Thomas F. Garrity, Lorann Stallones, Martin B. Marx, and Timothy P. Johnson found that pet attachment in elderly adults was linked to lower levels of depression under certain circumstances. Bereaved elderly who did not have any confidants were less likely to experience depression if they owned a pet. Also, when an elderly person has a low level of social support, a strong pet attachment is associated with less reported illness. Pet ownership and attachment do not seem to have an effect on depression when an elderly person has three or more confidants (Garrity et al. 1989). These findings suggest that in the absence of social support, pets can serve as substitutes for human confidants.

This line of research is useful for AAT because it shows that a lack of human connection can make people vulnerable to depression and illness. Sarah Knight and Victoria Edwards found evidence that "stroking, petting, or being in the presence of an animal can reduce physiological and psychological reactions to stressful situations" (2008, 439). Using AAT to enhance the social interactions of residents—especially

those with few confidants and those who have recently lost a loved one—can be beneficial in combating negative psychological affect.

### ***Alternatives to Using a Live Animal***

Sometimes it is not practical to use a live animal for therapy. If residents have allergies to pet dander, it is unwise to expose them to animals such as dogs and cats. In this case, a fish aquarium might be a good substitute because fish should not aggravate any allergies. However, it can be difficult to interact with fish because they do not provide the same tactile stimulation as other animals. For this reason, it might be more beneficial to utilize other options for AAT including robotic animals and stuffed animals.

Another benefit of using an alternative to the live animal model is that substitutes do not require a trained handler to be present during the therapy. When a live animal is involved, there is always a chance that a resident or the animal itself might be injured or otherwise negatively affected. With a live animal substitute, there is little concern of injury or psychological distress. Several studies have explored the efficacy of using alternatives to live animals, and the findings have generally been positive. This indicates that in cases where it is not feasible to bring a live animal to a facility, a substitute can be used to similar effect.

One of the most recent alternatives is the robotic dog AIBO that was first developed by Sony in 1999. Stephen C. Kramer, Erica Friedmann, and Penny L. Bernstein (2009) conducted a study that compared the effects of traditional AAT with AIBO-assisted therapy for people with dementia living in a long-term care facility. AIBO is able to look around, turn, dance, and wave its front legs. It also plays music and has colored lights that flash on its back and head.

It was found that the residents initiated more conversation when the AIBO was present than when the live dog was present. Most of the conversation was either directed at the AIBO itself or at the person who brought the AIBO to the room. When the residents talked to the AIBO handler, most of their questions were about the AIBO, indicating that their attention was focused on the robotic dog.

The researchers also looked at the number of times residents touched the social object (either the live dog or the AIBO) and did not find a significant difference between the two stimuli. This finding is particularly interesting because the AIBO has a plastic covering—a sharp contrast to the soft fur of a live dog. However, it seems that residents were just as willing to touch the AIBO as they were to touch the live animal. Kramer and his colleagues concluded that “interaction between residents suffering from dementia and an AIBO were not only similar to those with a live dog, but, in some cases, were even more effective” (Kramer, Friedmann, and Bernstein 2009, 56). However, it could be that the novelty of the AIBO had an effect on the results of the study. None of the participants had come in contact with an AIBO before the intervention, while all of them had had at least some exposure to live dogs. It could be that participants spent more time engaging with the AIBO because it was different from what they had previously experienced. It would be interesting to do a long-term study with the AIBO to determine if the positive effects balance out over time as residents become used to the robot.

Another study that explored live animal alternatives used both a plush, non-robotic cat and a robotic cat to determine whether an artificial animal could provide benefits

similar to that of a live animal. Alexander Libin and Jiska Cohen-Mansfield used the robotic cat NeCoRo, made by the Omron Corporation in Japan. The plush cat was chosen because it looked similar to the NeCoRo. The robotic cat is covered in synthetic fur and can “adjust to the level of interactivity maintained by its human partner” (Libin and Cohen-Mansfield 2004, 112). Unlike the AIBO, it does not play music or light up.

The researchers measured agitation, affect, and engagement before and after the intervention. They found that the non-robotic cat lowered the level of physical agitation more significantly than the robotic cat did. Affect had the opposite outcome, with the robotic cat yielding more significant results. Levels of engagement did not seem to differ from pre-test to post-test, but it was noted that 78 percent of the participants held the non-robotic cat, while only 22 percent held the NeCoRo cat (Libin and Cohen-Mansfield 2004, 113).

The overall conclusion of the study was that artificial animals can provide benefits comparable to those of live animals. However, this was only a preliminary study, and, while the robotic and non-robotic cats seemed to have positive outcomes for agitation and affect, they did not appear to affect communication and environmental engagement as well as traditional pet therapy. Robotic animals cannot discern nonverbal cues as well as live animals, which could explain why residents do not engage with these artificial creatures as much as they do with a real animal.

There are other substitutes for traditional AAT besides robots and stuffed toys. Marcia S. Marx and her colleagues (2010) examined the impacts of different dog-related stimuli on the engagement of people with dementia. Researchers used large, medium, and small live dogs, a robotic dog, a plush dog, a puppy video, and a dog-coloring activity. Results showed that, on average, participants engaged with the puppy video longer than any of the other stimuli. The lowest engagement was with the dog-coloring activity. The highest number of responses by residents occurred in the presence of the live dogs, and the fewest responses occurred in the plush dog and coloring groups.

The researchers also found that the participants had predominantly positive attitudes toward all of the stimuli except the coloring activity. This suggests that while live animals produce more communication than the alternatives, residents were still interested in the robotic, plush, and video dogs and that recorded material can engage people with dementia.

However, it was noted that real dogs are “more adept at reading subtle body language and responding appropriately . . . and show genuine affection and pleasure during interactions” (Marx et al. 2010, 44). Despite improvements in technology, robotic animals are still not able to provide the type of unconditional positive regard that live animals can. For example, while an AIBO can be programmed to make certain responses, it is not as adaptable as an actual dog. It cannot reciprocate the fondness that a person with dementia feels or offer the same spiritual connection that a living, breathing creature can. Non-robotic, plush animals and videos might engage a person with dementia, but they do not offer much in the way of interaction and communication. Despite these drawbacks, in cases where it is not feasible to bring a live animal into a facility, substitutes are at least an alternative that can provide some benefit.

## ***Limitations of AAT Studies***

### **Lack of Controlled Studies**

Many of the studies on the benefits of AAT have been observational or correlational, meaning that they cannot provide cause-and-effect data. Of the experimental studies that have been conducted, few have included a control group. Those that do utilize a separate control group tend to overlook certain important factors including the use of behavior-modifying medication, which is commonly used in the dementia population (Perkins et al. 2008). Medication can have an effect on mood and overall functioning, which could impact the way participants in these studies react to the therapy.

Another factor that is often not controlled for in AAT studies is the severity of participants' dementia. A person's level of cognitive functioning could have a significant impact on the results of an AAT session. The type of connection with the therapy animal might need to be adjusted based on the progression of a person's symptoms. Without controlling for this aspect, it can be difficult to get a clear picture of the benefits that animals bring to residents living with dementia. More research involving this component will bring us closer to understanding how the severity of dementia affects a person's interaction with animals.

An additional limitation is how the results of the study are measured. Often, a person with dementia cannot directly communicate whether a pet therapy session was beneficial to him or her. There have not been self-report instruments designed to allow people with dementia to report on their own feelings about animal contact (Perkins et al. 2008). This means that proxy measures are commonly used to gauge whether a resident had any tangible improvements because of AAT. Caregivers and family members might be asked to report any changes in a person's behavior or affect that could be a result of the intervention. This method of measurement is prone to bias because simply being exposed to the therapy animal might influence caregivers to project their feelings about the pet on the person receiving the therapy.

More objective forms of measurement should be used to determine the outcome of a study. For example, the Apathy and Irritability Scale can be used to assess changes in levels of agitation, and the Social Behavior Observation Checklist can be used to examine social behaviors during a session (Perkins et al. 2008).

### **Previous Experience with Animals**

It is likely that a person's previous engagement with animals affects their reaction to AAT. Researchers often recruit participants based on past relationships with animals and may exclude those who dislike or fear the animal to be used in the study. This method of selecting participants leads to biased results because it does not control for this important aspect of a person's experience.

Susan Filan and Robert H. Llewellyn-Jones examined the literature on AAT for dementia and concluded that "most visiting pet-study participants have a prior history of positive interaction with animals and their results are restricted to such individuals" (2006, 606). It is important to determine under what circumstances and for which patients AAT is the most beneficial form of therapy and how it compares to other forms of therapy for elderly people (Beck and Katcher, 2003). To accomplish this, more controlled studies need to be conducted that include a wider diversity of residents with

dementia and that examine aspects of the environment and the participant's past that may affect results.

### **Duration of Program**

Studies on the benefits of AAT have used various approaches to implement the therapy. They differ in the length of each session (generally ranging from 10 minutes to several hours) and the duration of the program (often between 1 and 12 weeks). There is no consensus on how long an AAT program should last for a person to achieve optimal benefits. More sessions may not necessarily equal better results, as participants may become used to interacting with the animal and no longer respond as positively as they did in the first few sessions.

Another concern has to do with the duration of the impact of AAT. Richeson (2003) measured participants' behavior two weeks post-intervention and found that behavior had returned to baseline levels, suggesting that the positive effects of the therapy were not long-lasting. Few other studies have followed up on participants after the AAT sessions ended. This leaves us with a limited understanding of the stability of improvements in behavior and affect due to AAT.

### **Conclusion**

A variety of studies suggest that AAT can be beneficial for people with dementia living in long-term care facilities. Increases in social behavior and communication and decreases in stress, agitation, and depression have all been observed during AAT sessions. AAT can provide people with dementia the chance to positively interact with another living creature. This can be especially beneficial for those who have a history of previous engagement with animals.

However, there are many problems with the way that AAT is currently implemented and evaluated. Training programs for animal handlers are not standardized; there is no national or international organization setting core requirements for obtaining certification in AAT. People who bring their animals to long-term care facilities do so on a volunteer basis, so it can be difficult to establish a consistent AAT schedule. A lack of controlled studies and little understanding about the conditions in which people with dementia would most benefit from AAT have led to criticism that pet therapy is not a good alternative to more established forms of therapy such as occupational or music therapy.

It is difficult to weigh the benefits of AAT against the limitations without further study on various aspects of this relatively new form of intervention. Further research should focus on determining the characteristics of people who benefit the most from AAT and the best way to implement sessions in long-term care facilities. Better statistical methods for measuring changes in participants' behavior and affect coupled with the use of control groups will improve the reliability and validity of future studies.

Finally, it is necessary to review the programs that offer training and certification in AAT to ensure that they are upholding ethical standards and providing volunteers with enough practice in working with vulnerable populations. Having one organization that oversees all these programs would be a big step toward standardizing curriculum and implementation of AAT. There is a special bond between humans and animals; AAT is a way to utilize that bond to enrich the lives of people with dementia.

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