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Health Benefits of Animal-Assisted Interventions

Michele L. Morrison, MS, RN, ANP, HNP, CHHC

The use of animals in the promotion or improvement of health is long-standing, yet this complementary healing modality is not widely integrated into mainstream health care. This article describes the history of animals in therapeutic healing, defines animal-assisted interventions (AAIs), and reviews current research. Indications and contraindications for use with patients and clients and issues of safety, cost, reimbursement, and certification are discussed. AAIs result in statistically significant health benefits with improvements in blood pressure, heart rate, and salivary immunoglobulin A levels and in depression, anxiety, perceived quality of health, and loneliness. Although some studies are weak in experimental design, overall research reveals multiple indications with few contraindications for use of AAIs. Adherence to safety and pursuit of certifications helps ensure the success of AAIs. For the continued support and expansion of AAIs, further research is needed into the mechanism of action, settings, characteristics and species of animals, illness conditions, and client populations.

Keywords: animal-assisted intervention; animal-assisted therapy; pet therapy; health benefits; alternative therapies

The use of animals in the promotion or improvement of health is long-standing, yet this complementary healing modality is not widely integrated into mainstream health care. The beneficial effects of animal-assisted interventions (AAIs) have been documented both historically and in recent research. Current research reveals multiple indications with only few contraindications for use of AAIs with patients and clients. The historical use, current research, indications, and safety procedures for this form of complementary therapy are described below.

HISTORY OF ANIMALS IN HEALING

Animals and humans have existed in therapeutic relationships with each other for more than 12,000 years. Table 1 highlights some historical markers indicating humans' long-standing therapeutic relationship with animals. One of the earliest cited findings is the skeletal remains, found in northern Israel, of a human holding a puppy. In Gheel, Belgium, in the ninth century, animals were used in treatment plans with handicapped persons (Serpell, 2000). In 1790 in York, England, rabbits and chickens were used in therapies with mentally ill patients learning self-control (Salotto, 2001). During the 1830s, the British charity commissioner

TABLE 1. Historical Perspective of Human and Animal Relationships and Development of Research

12,000 years ago	Human skeleton, holding a puppy, was found in northern Israel
Ninth century	Animals were incorporated in treatment of the handicapped in Gheel, Belgium
1790	Rabbits and chickens were used in therapy with the mentally ill in York, England
1830	British charity commissioner recommended animals for mental institutions
1867	Farm animals and horses were used in treatment of epilepsy patients at Bethel in Bielefeld, West Germany
1942	Patients at U.S. Army Air Corps Convalescent Hospital, Pawling, New York, worked with farm animals and considered treatment “restful”
1944	Sociologist James Bossad’s publication “The Mental Hygiene of Owning a Dog” discussed beneficial relationships between pets and their owners
1962	Psychologist Boris Levinson used his dog, Jingles, in treatment of an adolescent; he published his findings in “The Dog as the Co-therapist”
1970s	A visiting therapy dog, Skeezer, became a permanent resident at Children’s Psychiatric Hospital, Ann Arbor, Michigan Psychiatrist Michael McCulloch prescribed pets to patients Veterinarian Leo Bustad started “Bustad Buddies” at Pullman Memorial Hospital and Tacoma Lutheran Nursing Home in Washington
1972	Psychotherapist Boris Levinson conducted a survey and found that one third of New York psychotherapists used pets in treatment
1973	Humane Society’s “petmobile” program brought animals to visit nursing homes in Pikes Peak region, Colorado
1977	Dr. Dean Katcher and Erika Friedmann conducted early research on effects of pets on blood pressure and mortality rates
1980	Delta Society, a nonprofit organization focused on the human–animal bond, was founded

recommended that mental institutions have animals on the grounds “to create a more pleasing and less prison-like atmosphere” (Serpell, 2006, p. 13). Florence Nightingale, in her *Notes on Nursing*, observed that “a small pet is often an excellent companion for the sick, especially for the chronic cases” (Serpell, 2006, p. 13). In 1867, epilepsy patients at Bethel in Bielefeld, West Germany, had farm animals and horses incorporated into their treatment plans (Bustad, 1980). In 1942, the U.S. Army Air Corps Convalescent Hospital in Pawling, New York, considered working with farm animals “restful” for some patients in comparison to traditional medical treatment (Bustad, 1980).

The first scientific journal article related to AAI, titled “The Mental Hygiene of Owning a Dog,” was published in 1944 in *Mental Hygiene* by sociologist James Bossad, who discussed the beneficial relationships between pets and their owners. In the 1960s, a New York psychologist, Dr. Boris Levinson, incorporated his dog, Jingles, in the treatment plan of an adolescent and then discussed his findings in a published paper titled “The Dog as the Co-therapist” in *Mental Hygiene* (Levinson, 1962). In 1970, a Philadelphia psychologist, Ethel Wolff, conducted a survey of health care institutions in the United States

and concluded that 48% of institutions surveyed were using animals in some way for psychotherapy (Wolff, 1970). In 1972, another survey conducted by Levinson found that one third of the 435 psychotherapists surveyed in New York State used pets as therapeutic agents (Arkow, 2004).

Several other notable advances in AAIs occurred during the 1970s. A visiting therapy dog named Skeezer became a permanent resident at Children's Psychiatric Hospital in Ann Arbor, Michigan (Yates, 1973). The Humane Society of Pikes Peak region in Colorado started a "petmobile" program in which animals were brought to nursing homes to visit (Arkow, 2004). Psychiatrist Dr. Michael McCulloch began "prescribing" pets as a therapeutic option for his patients to improve quality of life (Salotto, 2001). Dr. Leo Bustad, the dean of the College of Veterinary Medicine at Washington State University, developed animal-assisted therapy (AAT) programs at Pullman Memorial Hospital and Tacoma Lutheran Nursing Home (Salotto, 2001).

Researching animal effects on human health and well-being began during the late 1970s. In 1977, a research team from the University of Pennsylvania, headed by psychiatrist Dr. Dean Katcher and his assistant Erika Friedmann, looked at the influence of pets on patients' blood pressure. They found that study participants who interacted with pets, compared to those interacting with people including family members, had lower blood pressures. Additional research revealed that patients who had suffered "severe" myocardial infarctions had improved 1-year mortality rates if they had pets waiting at home, compared to those patients with only family waiting at home or going home alone (Salotto, 2001).

In 1980, McCulloch, Bustad, and Katcher founded the Delta Society, an international nonprofit organization focused on the "human-animal bond" (Delta Society, 2005). This organization declared that its mission was "to promote animals helping people improve their health, independence, and quality of life" (Salotto, 2001, p. 7). The goals of the organization include "expanding awareness of the positive effects animals can have on human health; removing the barriers that prevent involvement of animals in everyday life; and expanding the therapeutic role of animals in human health, service and education." The mission statement has now evolved to read simply "Improving human health through service and therapy animals" (Delta Society, 2005).

DEFINING ANIMAL-ASSISTED INTERVENTIONS

Kruger and Serpell (2006) identified 20 different definitions in the current literature that have been used to describe AAT and more than 12 keywords in database searching that have identified the concepts of AAT and animal-assisted activities (AAA). In 1999, the Delta Society published *The Standards of Practice for Animal-Assisted Activities and Therapy* in an attempt to create standardized terms and definitions. For the purpose of this article, the term *animal-assisted interventions* (AAIs) is used as an umbrella term for AAA and AAT.

AAT has particular goals and objectives for the animal and patient to meet. The goals are improvement of "human physical, social, emotional, and/or cognitive functioning" (Delta Society, 2005); these are measured and documented. This therapy is carried out or facilitated by an AAT specialist who has been trained to integrate the animal into therapy as a modality. AAT specialists have been licensed by their discipline and then trained as animal specialists. Such specialists can include but are not limited to registered nurses, nurse practitioners, physicians, physical and occupational therapists, social workers, psychologists, and licensed counselors (Delta Society, 2005; Kruger & Serpell, 2006).

AAAs, although not directed toward specific therapeutic goals, "provide opportunities for motivational, educational, recreational, and/or therapeutic benefits to enhance quality of life" (Delta Society, 2005). Such activities can include bringing cats or dogs to visit patients at a hospital or nursing home; fish tanks located in health care providers' offices

for patients to watch while waiting; and even a dog-obedience group that gives a demonstration for a correctional facility. The specialist assisting with these activities has been trained to facilitate AAAs in a variety of environments including schools, health care facilities, and correctional facilities. Specialists helping to facilitate these activities may include but are not limited to assistants of licensed professions (nursing, occupational and physical therapy, as well as recreational therapy), students of professionals, and animal-shelter workers (Delta Society, 2005; Kruger & Serpell, 2006).

Dogs are the most common type of animal used in AAIs, but a variety of animals can be used for beneficial health effects. The Delta Society (2005) has identified the following as some of the animals that can be considered for use in AAIs: dogs, cats, guinea pigs, cockatoos, African gray parrots, horses, goats, chickens, donkeys, pot-bellied pigs, and llamas. Research studies have also identified dolphins as beneficial animals and the therapeutic benefits of watching aquariums (Antonioli & Reveley, 2005; Edwards & Beck, 2002).

Although horses are included in the list of animals for therapy and activities, the Equine Facilitated Mental Health Association (EFMHA, a subdivision of the North American Riding for the Handicapped Association, NARHA) and the American Hippotherapy Association (AHA) do provide separate definitions for activities that have been identified as equine-facilitated psychotherapy (EFP) and hippotherapy. These therapies are both goal oriented and facilitated by licensed professionals. The goals of these therapies are similar to those of the Delta Society's AAT (Kruger & Serpell, 2006).

REVIEWING THE CURRENT RESEARCH

A database search was conducted in Chinal, MedLine, PubMed, EMBASE, PsycINFO, and Alt-Health using the key terms *animal-assisted activities*, *animal-assisted therapy*, *animal-assisted interventions*, and *pet therapy* to retrieve relevant research literature. Studies were limited to those published in English in peer-reviewed journals from 1996 to 2006. Reference pages of retrieved studies were also examined to identify additional studies. Multiple guides have been published, and online lists of compiled research citations are available; however, these sources were not used in the search for current research studies (Arkow, 2004; Delta Society, 2005); search results are summarized below.

Charnetski and Riggers (2004) investigated changes in immune function (immunoglobulin A [IgA]) when participants petted a dog. Participants were randomized either to pet a dog, to pet a stuffed dog, or to sit quietly. Salivary IgA was sampled preintervention and postintervention. Participants who petted the real dog had significantly higher levels of IgA postintervention than did the other two groups ($p < .02$). The enhanced psychoneuroimmunological response gained from petting a dog may have positive health implications such as improving ability to fight off infection.

The physiological effects animals can have on a person's heart rate and blood pressure have been well documented. Stasi et al. (2004) examined the effectiveness of pet therapy in elderly, cognitively intact nursing home patients. Participants were randomized into two groups—a pet-therapy group that received three weekly visits from a cat and a control group that received no visits but was involved in a "usual activity program" (p. 407) in the nursing home. Participants in the pet-therapy group spent time holding and petting the cat. Blood pressure was measured before the start of the study and after 6 weeks. Participants receiving the intervention of a visit from the cat had a significant improvement in systolic and diastolic blood pressure ($p < .05$), compared with the control participants.

Allen, Shykoff, and Izzo (2001) also examined the effects of pets—cat or dogs—on blood pressure. Stockbrokers without pets and who had stage II hypertension (160/100+) were given lisinopril to treat their hypertension and were randomized into two groups. One group

was to continue the medication, and the other was to get a pet and continue medication. Blood pressure was checked at the start of the study, at 1 and 6 months of pet ownership, and after completion of a cognitive math-and-reading stress task. Compared to the control group, pet owners had significantly lower blood pressure after completing the cognitive stress tasks ($p < .0001$). In addition, pet owners improved their accuracy in completing the cognitive stress task from 74%, initially, to 92% at the conclusion of the study, whereas the non-pet owners showed no improvement (from 74% initially to 75% at the conclusion of the study).

Luptak and Nuzzo (2004) examined the effects of AAT with small dogs on blood pressure in elderly women. Fifteen participants received AAT for 10 minutes in a group with five other participants and two small dogs. Each participant in the group had 3 to 5 minutes of independent time with one of the dogs. A significant improvement in systolic blood pressure ($p < .05$) occurred after the 10 minutes of receiving the AAT.

There are times when the applicability of the use of real animals in practice is prohibited or not practical; in these cases, virtual pet therapy may be helpful. Wells (2005) demonstrated that the act of watching animals on videotape produced beneficial physiological effects of lower heart rate and blood pressure. Participants were randomized into five groups: three groups to watch videos of fish, birds, or monkeys; one group to watch a soap opera; and one group to watch a blank TV screen. The participants' heart rate and blood pressure were recorded at baseline, after watching the TV, and after performing the cognitive stress test. All three groups had significantly lower heart rate and blood pressure after the intervention of watching the assigned TV. After the cognitive stressor event, the fish, bird, and monkey group had a significantly lower heart rate and diastolic blood pressure ($p < .05$) compared to the group watching the soap opera or the blank TV screen ($p < .05$). These results suggest that the animal images had lasting physiological effects on the participants.

Multiple studies have looked at the beneficial effects animals have on the elderly and on their cognitive status. Colombo, Dello-Buno, Smania, Raviola, and DeLeo (2006) examined the effects pets had on nursing home patients' Mini Mental State Examination (MMSE) and perceived quality of life. Participants were randomized into three groups: one group was responsible for caring for an animal (a canary), another group was responsible for caring for a plant, and the control group did not have an animal or plant to care for. After 3 months, there was a significant improvement in perceived health for the group that had cared for the animal ($p < .001$). Although not significant, there was an improvement in perceived health in the group caring for the plant and a decrease in perceived health in the control group. Improvements in other measures of well-being were documented, including self-care scales ($p < .05$), anxiety ($p < .01$), depression ($p < .001$), physical functioning ($p < .001$), and life satisfaction scale ($p < .001$).

Banks and Banks (2002) examined the effects of AAT on senior loneliness in three long-term care facilities that had cognitively intact patients. Participants were randomized into three groups: one control group and two AAT groups. One group received AAT once per week, and another group received AAT three times per week. Both interventions were 6 weeks in length; the control group received no visits. The AAT consisted of spending 30 minutes of individualized time with the same dog each week. Loneliness scores were assessed before starting the AAT and at the conclusion of the 6 weeks. In the AAT groups, there was significant improvement in loneliness scores ($p < .001$) compared to the control group. Despite AAT's having improved loneliness scores, there was not a significant difference between the two groups. This could suggest that one visit weekly from the animal was satisfactory for improved loneliness scores.

As a follow-up to their earlier research, Banks and Banks (2005) studied the effect of AAT on loneliness in cognitively intact long-term-care facility patients, exploring any differences in receiving AAT individually or in a group setting. AAT was conducted for

6 weeks using the same therapy dog. Participants were randomized into two groups: one receiving individual AAT and one receiving group AAT. Loneliness scores improved in both groups after receiving AAT; however, only individual therapy showed significance ($p < .05$). The researchers attempted to explain the lack of significant improvement in the group AAT by suggesting a potential incompatibility of group members that may have distracted from the AAT.

Antonioli and Reveley (2005) looked at the positive effects of dolphins on mildly and moderately clinically depressed patients (scores of 11 or higher on a "modified" Hamilton depression scale) who had been off medication and psychotherapy for 4 weeks. Patients classified as severely depressed were excluded from this study. Participants were randomized to AAT with dolphins or to a therapy activity involving snorkeling around a coral reef. Postintervention evaluations revealed that the patients who received the dolphin intervention had a significant improvement in the mean difference in change in Hamilton and Beck depression scores (7.27 and 13.40), $p = .007$ (95% CI: 1.112 to 6.221) and $p = .012$ (95% CI: 1.774 to 12.89), respectively, compared to the snorkeling control group (3.60 and 6.07). Evaluation of the results of this study suggests that the dolphin intervention improved depression symptoms quicker than psychotherapy or medication (2 weeks compared to the typical 4 weeks). A major limitation to the use of dolphins is the impracticality of implementation into daily practice.

Richeson (2003) conducted a quasi-experimental study that examined the effects of dog therapy on agitated behaviors and social interactions of 15 elderly dementia patients. A significant improvement was found in comparing pre- and post-dog therapy interventions. Macauley (2006) examined three aphasic stroke patients who received 30 minutes of individual AAT with a dog for 12 weeks. Participants were found to have an increased number of spontaneous communications during their therapy sessions.

Children are a patient population that has been shown to benefit from AATs, although many of the data are self-reported. Wu, Niedra, Pendergast, and McCrindle (2002) examined the effects of pet-therapy dogs on inpatient pediatric cardiology patients. Each patient and his or her parents received a 10- to 20-minute visit from a pet-therapy dog. Thirty-one pet-therapy visits were evaluated through subjective questioning of both patient and parents regarding the experience as well as through an observer's subjective evaluation of the interactions between the patient and dog. The results suggested that the pet visits decreased stress and improved the patient's and parents' morale.

Sobo, Eng, and Kassity-Krich (2006) evaluated the effects of dog visits on 25 hospitalized pediatric patients who had had surgery and were experiencing postoperative pain. Patients were visited by a dog and allowed to interact for a patient-determined length of time. Patients were assessed before and after the pet-therapy session. Self-reported physical pain and emotional pain were assessed before and after the pet-therapy session; both were found to have significantly decreased after the session ($p < .001$ and $p < .0001$, respectively).

Bardill and Hutchinson (1997) carried out a qualitative study to examine the effects of a dog on adolescent psychiatric patients admitted to an inpatient unit. The unit's resident dog, a cocker spaniel, was not involved in specific therapy with the patients but was available so that patients could independently interact with the dog if they chose to do so. To evaluate the dog's effect on the patients, daily journals of 30 patients were reviewed for 1 month, looking for comments about the dog. Journal writing was a "usual therapy" in which patients spent 30 minutes daily writing about feelings or experiences; all entries were unsolicited. In addition, tape-recorded interviews were conducted with 15 patients who spent 15 to 30 minutes discussing their feelings about the dog. Results of qualitative analysis indicated that the dog may have had a therapeutic effect on the patients. For example, many patients "were able to talk to the dog about their problems" and related that they "felt the dog was their best friend" (p. 17). These data suggest that having an inpatient pet such as a dog may improve therapeutic care plans and outcomes.

Child-life programs are an important part of pediatric hospitalization and involve professionally supervised therapeutic and diversional play; preparing children for and assisting them during medical tests and procedures through education, rehearsal, and coping-skill development; and supporting families during hospitalization or challenging events (Child Life Council, 2003). Kaminski, Pellino, and Wish (2002) compared pediatric hospitalized inpatients participating in pet therapy with those participating in child-life groups in terms of self- and parent-reported mood and observer-reported effect. Patients were randomized into two groups—40 patients participating in a child-life group and 30 patients participating in pet therapy. Pet therapy consisted of one night a week spending time with a visiting dog. The length of time the therapy lasted and whether it occurred on an individual or group basis were unclear. Patients receiving pet therapy were reported as significantly happier after the pet therapy ($p < .001$) compared with those participating in the child-life group. A positive effect was reported 46% of the time in the patients receiving pet therapy, compared to 19% of the time in the child-life group.

Animals incorporated into therapy for children with developmental disorders can help improve progress. Martin and Farnum (2002) looked at the effects of AAT on children with pervasive developmental disorders. This small sample of 10 participants (developmental ages of 2.5 to 6.5 years) took part in one-on-one, 15-minute therapy sessions three times a week for 15 weeks. During therapy, participants were exposed to a ball, a stuffed dog, and a live dog; protocols were implemented to maintain consistency during therapy sessions. Videotaped sessions were evaluated for “prosocial” behaviors. Results suggested that the participants in the presence of the live dog exhibited significantly more “playful moods,” described as laughing more frequently ($p < .019$) and for a longer period of time ($p < .025$), compared to those exposed to the ball or stuffed dog. Participants were also described as significantly more focused with the presence of the live dog ($p < .001$) or stuffed dog ($p < .001$) than with the presence of the ball.

Sams, Fortney, and Willenbring (2006) found positive effects on children with autism when animals (dogs, rabbits, llamas) were incorporated into occupational therapy. Each of 22 participants received one standard therapy session and one session including animals. Participants were found to have a significantly greater use of language ($p < .05$) and social interactions ($p < .05$) during the sessions involving the animal compared to standard therapy sessions.

METHODOLOGICAL WEAKNESSES

Although significant outcomes have been reported in recent research of AAI, several methodological weaknesses are consistently seen. These include small sample size, lack of consistent randomization of participants, lack of designation of a control group or usual care group, inadequacy of control group, selection bias, poor generalizability, minimal reporting of reliability and validity of tools used to measure outcomes, and attrition rates. None of the studies discussed that animals have the potential to have a novelty effect on outcomes. This could be further addressed by repeating a study to see if the results are from the animals’ being a novelty, in which case the effects of the results would diminish with repetition, or if the effects are a result of the animal as an intervention, in which case reproducible outcomes would be apparent. There are no studies addressing the long-term outcomes from receiving AAT or an extended follow-up to identify duration of effect.

POSSIBLE MECHANISMS OF EFFECTIVENESS OF AAIs

Although there is not a clear understanding of the mechanism of action of AAIs, the current research has proposed two hypotheses. The first is that “some animals may induce,

for some people, an immediate, physiologically calming state of relaxation simply by attracting and holding our attention” (Arkow, 2004, p. 2). The second is that “some animals provide, for some people, a form of stress-reducing or stress-buffering social support” (Arkow, 2004, p. 2). These hypotheses have not been directly tested.

INDICATIONS

Based on the research to date, AAIs may be indicated for but not limited to patients of all ages who need improvement in mood, motivation, self-esteem, and physical and psychological well-being. This includes men, women, and children of all ages who have had the pertinent precautions and safety issues addressed. Specific medical indications include but are not limited to autism, dementia, chronic diseases, mental disorders, and neurological disorders including aphasia and epilepsy (Allen et al., 2001; Filan & Lewellyn-Jones, 2006; Kaminski et al., 2002; Macauley, 2006; Richeson, 2003; Sams et al., 2006).

Settings that are appropriate for AAIs may include but are not limited to institutional settings such as hospitals, nursing homes, hospice care, mental health facilities, schools, and correctional facilities. Other settings may include the home, farm, or alternative locations with access to therapeutic animals such as dolphins (Arkow, 2004).

CONTRAINDICATIONS

There are a few contraindications for initiating or continuing AAIs; for example, the patient or client may have a significant fear of the animal, express “disinterest” in the animal, or be unable to treat the animal in an appropriate, humane manner. A brief interview with the patient or client before the intervention can help address concerns and determine whether an AAI would be appropriate. Additionally, a patient with a medical condition in which exposure to an AAI would worsen current health would be a contraindication to this modality. Such conditions may include but are not limited to patients or clients who are immunocompromised, have open wounds or sores, or are allergic to the animal (Arkow, 2004; Delta Society, 2005).

SAFETY

Fear of zoonotic diseases (those diseases that can be transmitted from animal to person and vice versa) is one of the most common arguments against implementing AAI programs. Although there are 65 zoonotic diseases, only infrequently have these concerns been validated. Simple care for the animals greatly decreases the risk of infections. Such guidelines have been included in the Centers for Disease Control and Prevention’s (CDC) *Guidelines for Animals in Health Care Institutions* and the Delta Society’s (2003) *Standards of Practice for Animal-Assisted Activities and Therapy*.

Supervision of an AAIs by an AAA or AAT specialist is crucial for the safety of the patients and animals involved. Extra caution is needed for patients with traumatic brain injury, developmental disability, or dementia to prevent injury or unintentional aggravation to the animal. During group AAIs, monitoring for patients’ competing for the animal’s attention or monopolization of the animal is important. At times, an animal may not be interested in participating in an AAI. In these situations, the animal specialist needs to recognize this and cease the intervention when deemed necessary. When an animal is a resident of a health care facility, school, correction facility, or other institutional environment,

a clear protocol needs to be in place to ensure the safety, well-being, and care of the animal at all times (Delta Society, 2005).

COSTS AND REIMBURSEMENT

When implementing AAIs, the cost of the care of the animals needs to be considered. This includes food and shelter for the animals, hygienic items, toys, and veterinary costs for health maintenance and incidental events. At this time, there is no reimbursement code for AAIs; however, much of the cost can be decreased through donations and volunteers. AAIs are considered a modality that is incorporated into treatment plans. Arkow (2004) reported that a nursing home in Missouri was reimbursed by health insurance companies after citing evidence that AAIs improved outcomes of occupational and recreational therapy interventions. Similarly, a rehabilitation hospital in New Hampshire bills third-party payers for AAIs as a modality. Documentation that includes progress notes, measurable goals, and outcomes has led to reimbursement by health insurance companies.

According to the Delta Society (2005), AAT conducted by a credentialed therapist (e.g., occupational therapist, physical therapist, master of social work) may be a third-party billable service. In contrast, AAA would be included in routine patient care plans and therefore would not be a separate billable service. For AAT to be a billable service, the credentialed therapist must develop an individualized treatment plan incorporating an animal, with goals, interventions, and anticipated outcomes. The credentialed therapist must also provide documentation of the plan, progress, and outcomes. AAT is a modality used by a therapist to help achieve a set of established goals that remain whether the animal is involved or not.

CERTIFICATION

Health care professionals seeking to become an AAT or AAA specialist must first be licensed and credentialed in their professional fields (see Table 2). Classes are available for professionals to receive a certificate in AAT or AAA; however, this does not include certifying the animal. National certifying organizations help to have pets certified, if appropriate, and provide limited amounts of training in AAIs. Such organizations include the Delta Society, Therapy Dogs International, Therapy Dogs Inc., and the American Kennel Club Good Citizen Test. Animals are tested for well-being and temperament. Animals considered "pocket pets," such as guinea pigs, rabbits, specific birds, and rats, are not required to register (Delta Society, 2005).

Organizations such as the Delta Society offer training for health professionals and health care agencies that incorporate the modality of AAT into practice. Topics include patient or client assessments, documentation, evaluation, and specific techniques to use during the therapy. Courses are also available to help health care providers learn to screen animals for use in AAT or AAA and provide instructions to persons who will be working with the animals, including staff and volunteers (Delta Society, 2005).

IMPLICATION FOR PRACTICE

AAIs can be used as a stand-alone modality or as an adjuvant to current medical therapy for beneficial, improved health outcomes. The publication of the Delta Society's (2003) *Standards of Practice for Animal-Assisted Activities and Therapy* has helped to standardize this modality. In an effort to help implement guidelines for practice, the

TABLE 2. Guidelines for Health Care Providers Implementing Animal-Assisted Therapies (AAT)

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- Health care professionals interested in implementing AAT must be licensed and credentialed in their professional fields (e.g., registered nurse, physical or occupational therapist, master of social work).
 - Training is available for health care professionals implementing AAT into practice; this training includes assessment, documentation, evaluation, and specific techniques for therapy.
 - Animal evaluator and volunteer instructor courses are available through the Delta Society to assist with skills to select animals and train staff and volunteers.
 - Animals such as dogs and cats should be certified with a national organization (e.g., Delta Society, International Association of Canine Professionals, Therapy Dogs International) to verify animals' well-being and temperament.
 - Animals such as guinea pigs, rabbits, specific birds, and rats are not required to have national certification.
 - Adequate strategic planning will lead to successful implementation of an AAI program.
-

Standards of Practice will help guide practitioners and health care organizations in successfully implementing AAI programs. Adequate strategic planning will lead to successful implementation of an AAI program. Continued documentation of planning, interventions, and outcomes will solidify the evidence of the health benefits of AAIs.

SUMMARY

Animal-assisted interventions, which include both animal-assisted activities and therapies, have historically been beneficial to human health. AAIs are modalities that offer an integrative approach to enhance the treatment of various health concerns. Although many health care professionals and facilities use AAIs in the treatment of patients or clients, extensive opportunities are still available for further implementation into health care. Further research is needed into mechanisms of action as well as into suitable settings, characteristics and species of animals, illness conditions, and client populations to ensure the continued support and integration of AAIs in health care practice.

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