Animal-Assisted Intervention in Speech-Language Pathology: Practical, Clinical, and Theoretical Considerations

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ABSTRACT

Interest in animal-assisted interventions within the field of communication sciences and disorders is growing. As more clinicians become interested in engaging in animal-assisted therapy (AAT) and more researchers begin to study its potential benefits, it will be critical for all stakeholders to demonstrate knowledge of the standards and qualifications for service delivery as well as the challenges that must be met in developing an evidence base for clinical practice. This review highlights some of the foundational information relevant to AAT in the context of speech-language pathology.

KEYWORDS: animal-assisted therapy, communication sciences and disorders, therapy animal-handler teams

Learning Outcomes: As a result of this activity, the reader will be able to (1) summarize qualifications of AAI-certified animal-handler teams; (2) discuss evidence regarding potential benefits of AAI for clinical populations; and (3) describe limitations and future directions for the study of AAI.

Since Boris Levinson's 1961, *Dog as Co-therapist*, perhaps the first modern account of an animal-assisted therapy (AAT) session,[1,2] interest in the potential therapeutic benefits that can be derived from the bond between human and nonhuman animals has grown.[3–9] The field of animal-assisted interventions (AAI) continues to mature. Developments continue in the creation of guidelines for incorporating therapy animals into clinical practice and through augmentation of the evidence base regarding the effectiveness of doing so to facilitate progress toward clinical goals. The goal of this article is to provide a foundation on which speech-language pathologists and communication sciences and disorders researchers interested in AAI can build their knowledge as practitioners, critical consumers, and authors of the evidence.

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PRACTICAL CLINICAL CONSIDERATIONS

The International Association of Human-Animal Interaction Organizations (IAHAIO) summarizes distinctions between several activities that fall under the umbrella term "animal-assisted interventions."[10] For our purposes, the most relevant of these are animal-assisted activity (AAA) and AAT. A common denominator in both cases is the presence of a trained animal-handler team that has demonstrated competency in interacting with a variety of people across a variety of environments with the goal of providing benefit to those with whom they interact. While both intervention models require careful planning, AAA sessions are less formal and more spontaneous. Examples of AAA sessions include visits to patients in hospitals or residents in nursing homes, participation in library reading programs with young children, and "stress-relief" visits to universities, workplaces, and even airports. While the team may have overall objectives for their visit, there will not be behavioral, motoric, linguistic, or other individualized goals for each person with whom they interact, the interactions will be flexible with respect to duration, and there will not be documentation of goal-related progress. These distinctions, along with all of the other ingredients of therapy as administered by a licensed clinician, in our case, a speech-language pathologist, belong to AAT. AAT is therapy, dictated by clinical scope of practice and professional ethics, which incorporates the skills of the animal-handler team into the methods used to facilitate progress toward therapeutic goals. For SLPs interested in offering AAT as part of their clinical practice, there are several considerations to understand. These include knowledge of the skills that the animal-handler team contributes, how they are developed and documented, and how these skills intersect with those of the SLP.

Guidelines and Qualifications for Animal-Handler Teams

Pet Partners, a leading nonprofit organization that registers animal-handler teams and provides education and advocacy for the AAI community, publishes the *Standards of Practice in Animal-Assisted Interventions*,[11] reflecting the recommendations of several stakeholder organizations to provide guidance on the skills that must be demonstrated both by the animal and the handler to maintain the well-being of all involved in AAI. Made explicit is the recommendation for formal skills training, assessment-based registration, and reassessment over time.

For the nonhuman animal on the team, the necessary skills could be conceptualized as falling into two broad categories: those associated with "activities of daily living (ADLs)" and what we might think of as "people skills." Under the category of ADLs can be included regular veterinary and hygiene/grooming care, housetraining, and demonstration of species-appropriate basic obedience skills. Regarding "people skills," of principal importance is that the animal actively enjoys and derives benefit from, rather than merely tolerating, human interaction.[12,13] AAT is not "therapy" for the animal, and animals should not be put into situations that they find in any way aversive. Therapy animals must also demonstrate reliable and calm responses to the sometimes hectic environments with which they will interact. These include enjoyment of being petted and brushed; calm in the presence of sudden, loud, noises and voices; comfort around medical equipment and high traffic areas; and equanimity in the face of invasion of their personal space by strangers. Pet Partners also maintains guidelines regarding the species that they will register. Animals must be domestic or domesticated and have reached adulthood, and there must be sufficient extant evidence regarding species-specific communication behaviors that handlers can reliably interpret the cues the animal is displaying.[11] Of course, the handler must be well-versed in reading and responding to these cues, which brings us to the qualifications and skills the handler must demonstrate.

First and foremost, the role of the handler is to be the advocate for the animal under all circumstances.[11,13] The handler must be well-versed in the communication style of the particular animal with whom they partner and responsive when the animal demonstrates fatigue or discomfort with a situation. For clinicians who simultaneously act as handlers during

Table 1 Considerations for Clinicians Acting as Registered-Handlers

Advantages	Challenges
Direct access and familiarity with the therapy animal, ease of integration of animal into therapy	Balancing needs of client and needs of animal
No need to train another person in clinical and ethics procedures	Requires another person to be available in case of emergency (client or animal) or for planned or unplanned breaks for the animal

Source: Adapted from Antonucci S. Incorporating animal-assisted therapy into speech-language pathology clinical practice: an overview. SpeechPathology.com. Course 9436. 2020. Available at: www.speechpathology.com.

therapy sessions, this sets up dual, and possibly competing, priorities since it is also the clinician's responsibility to maintain the integrity of the therapy session and their duty to their client (s). This does not mean that clinicians cannot be handlers, it simply means that clinicians must be aware of and prepared for eventualities in which the animal's and client's best interests do not converge.[11] Tables 1 and 2 display some considerations regarding benefits and challenges for clinicians who are acting as handlers and those who choose to work with a separate handler. An important point to remember is that a therapy animal is typically also a family member; so, clinicians interested in becoming registered-handlers should be aware of and enthusiastic about the responsibilities of pet parenthood.

Table 2 Considerations for Clinicians Collaborating with Separate Registered-Handlers

Advantages	Challenges
Directing undivided attention to client	Training nonclinician handler in clinical and ethics procedures and facility requirements and restrictions
May be easier to balance in cases in which there are only 1 or 2 clients in the practice involved with AAT	Managing multiple schedules and logistical considerations
	Less familiarity with and/or training time with the therapy animal

Abbreviation: AAT, animal-assisted therapy.
Source: Adapted from Antonucci S. Incorporating animal-assisted therapy into speech-language pathology clinical practice: an overview. SpeechPathology.com. Course 9436. 2020. Available at: www.speechpathology.com.

Client Candidacy

An overarching principle of engaging in AAT is that the safety of both the client and the animal is paramount. When considering whether a client is appropriate for AAT, clinicians must confirm that the client is enthusiastic about engaging with the animal, that they are medically and behaviorally safe to interact, that consent (or assent) has been provided by all parties including the client and their parent/guardian (as appropriate), and that physician and other institutional permissions have been acquired as needed.[11] In cases in which clients are motivated and engaged by animals but are not able to directly interact with them, "animal-related engagement" activities can be incorporated into sessions. Examples of these types of alternatives include "meeting" with the animal over video-conference or using videos, photos, and stories about animals as stimuli and the basis for therapeutic activities.

Goals, Outcome Measurement, and Documentation

It may be useful to the clinician considering engaging in AAT to keep in mind that AAT is not a separate field of practice. It is a method clinicians incorporate within activities appropriate to their clinical scope of practice. AAT is neither the goal nor the behavior being targeted. The clinician is facilitating change in communication skills and documenting that change as appropriate, while also documenting that AAT was used as a method for engaging those skills. In addition to more "standard" SLP outcome measures, observational coding-schema have been developed to study the effects of AAT in domains including verbal and nonverbal communication.[3,14] The particular activities

used are limited only by the need to maintain the welfare of the client and animal, and by the imagination of the clinician (see Table 3 for some examples).

None of the cornerstones of good clinical practice change in the context of AAT; in fact, they are critical at all stages of the therapeutic process—before, during, and after sessions: maintaining communication with all stakeholders, attending to health/hygiene and safety, reflecting on which therapeutic procedures were successful, revising procedures as necessary, and keeping thorough documentation.[11]

EVIDENCE-BASED PRACTICE: THE STATE OF THE EVIDENCE

Good clinical practice is founded on an evidence base that provides not only an account of therapeutic outcomes but also the theoretical rationales that guide therapeutic decisions.[15] A convergence point for our understanding of theoretical motivations for AAT may be observation that engagement with the animal "promotes the preconditions for learning" critical to the treatment process.[16 (p. 7)] Evidence suggests that interacting with a nonhuman animal serves to increase intrinsic motivation for participation in treatment activities, concentration during therapy, and positive mood, while decreasing anxiety and stress.[16,17] Associated physiological changes have also been noted, including increases in oxytocin, a hormone associated with affiliative bonding that can also decrease stress-related hormones such as cortisol.[18–20]

For those with communication impairments, who may be habituated to receiving "social punishment" for conversation attempts, animals can act as nonjudgmental interlocutors. In addition to providing an engaging presence to talk to and about, as enthusiastic recipients of care-taking and attention, nonhuman animals can increase feelings of self-efficacy and self-confidence, and contribute to improvements in self-perceived quality of life.[16,21] As many pet-parents anecdotally observe, animals can also act in the role of social catalysts. For clients who experience social isolation, the presence of the animal can promote social interaction by enticing potential communication partners and promoting communication partners' trust in the human accompanied by the animal.[16,22]

Perhaps unsurprising in light of proposed "mechanisms of action"[16] of AAT, a trend in the literature documenting positive outcomes associated with AAT often reflects psychosocial or

Table 3 Examples of Speech-language Goals Targeted in the Course of AAT

Behavior	AAT method	Outcome measurement
Increase length and meaningfulness of utterance; increase number of or type of words in lexicon	Provide cues of increasing length to animal; name concepts associated with the animal	Language sample: mean length utterance, type–token ratio, etc.
Increase topic initiation and maintenance with familiar/unfamiliar partner	Introduce animal to (*n*) new people using (*x*) number of words; tell/respond to (*x*) number of pieces of information about animal	Number of communication acts/number of opportunities; number and type of cues
Decrease frequency of interrupting behaviors	Only allowed to gently pet animal after raising hand to request conversational turn	Number of hand raises/conversational turn
Sequence 3 steps to plan a complex ADL	Write out list of animal's daily activities to provide to a pet-sitter	Number of cued//uncued items listed, number of items listed in appropriate sequence

Abbreviations: AAT, animal-assisted therapy; ADL, activities of daily living.
Source: Adapted from Antonucci S. Incorporating animal-assisted therapy into speech-language pathology clinical practice: an overview. SpeechPathology.com. Course 9436. 2020. Available at: www.speechpathology.com.

affective components of communication. Studies with individuals with autism note increases in "social interaction," verbal communication (to and about the animal), and smiling and joint attention.[14,23,24] Similar effects have been noted in those with dementia, including positive changes in social communication and positive mood, and decreases in reports of depression, apathy, and "agitation" behaviors.[25–27] AAT with those with acquired brain injury (patients with traumatic and nontraumatic brain injury) has also been shown to result in increases in overt verbal or nonverbal social behaviors, smiling and laughing, and in some cases self- and clinician-reported increases in treatment motivation and satisfaction.[3,17,22,25,28]

Direct treatment effects (e.g., change on specific cognitive-linguistic or motor skills) are less frequently reported. Studies in which direct effects are examined report improvement on targeted behaviors including correct word initiation,[25] confrontation naming,[28] developmental vocalizations,[29] and conversational "social skills."[30] The relative paucity of direct treatment effect reports is likely due to several factors. First, the evidence base contains outcomes reported both from AAT and AAA, in which there is no direct treatment on which to report. It is also the case that proportionally few AAT studies are directed specifically toward remediation of communication disorders. The limits of the evidence base also reflect some of the research design challenges AAI investigators need to overcome. An exhaustive account of the limitations of the evidence base is beyond the scope of this review,[15,21,31–34] but it is important to highlight some of those of particular relevance for guiding clinical consumers. Sample sizes in studies of AAT are comparatively small, which can limit the (statistical) power of the study for detecting treatment effects. In addition, relatively few reports include adequate control conditions or comparison with other treatments.[3,22,30] This can make it difficult, if not impossible, to exert the necessary experimental control over confounds (e.g., novelty effects, effects of clinical presence) required to discern which effects are attributable specifically to the (live) animal's contribution.[35–38] Replication, for both scientific study and clinical practice, is often difficult due to under-specification of treatment activities, descriptions of which often boil down to little more than "there was an animal there."[15] This under-specification also contributes to difficulty discerning the "active ingredients"[39] of AAT, which is exacerbated by the heterogeneity across studies with respect to targeted goals, treatment procedures, and outcome measurement. There is not, nor should there be, only one method for incorporating AAT into service delivery across clinical populations and individuals, but this variability makes clear and thorough treatment definition[40] within studies critical for differentiating which methods are best for which clients.

MOVING FORWARD

As the challenges of evaluating the potential benefits of AAT are acknowledged, those challenges can begin to be addressed. Recommended initiatives in the study of AAT include a move toward reporting of "manualizable" methods,[21,31,32] the development of standard protocols for operationalizing and measuring outcomes,[3,14] and an increase in the conduct of clinical trials, the gold-standard design for efficacy and effectiveness research.[41,42] Open questions also remain regarding the "intervention dose"[18,43] required to maximize potential benefits of AAT as well as to what degree benefits persist over the longer term (e.g., at follow-up).[44]

In support of the development of a rigorous evidence base, the Eunice Kennedy Shriver National Institute on Child and Human Development (NICHD) and the WALTHAM Center for Pet Nutrition formed a partnership to support (and fund) peer-reviewed research investigating the benefits of human–animal interaction, which since 2016 has supported research directed toward assessing the integration of animals into treatment and rehabilitation across the lifespan.[41] For clinicians interested in developing their knowledge of AAT, there are several venues through which to access publically available research. Publications from studies funded by the National Institutes of Health, such as those supported by the NICHD/WALTHAM partnership, are free to the public through PubMed. The NIH

RePORTER provides a searchable database of all NIH-funded projects, with all clinical trials registered on the publically searchable clinicaltrials.gov. An additional resource is available with the launch of Pet Partners affiliated organization, the Association of Animal-Assisted Intervention Professionals (AAAIP). The AAAIP brings together clinical practitioners of AAI, animal behavior and welfare professionals, and AAI researchers for education, advocacy, and collaboration. For those interested in formalizing their knowledge of the delivery of AAI services within their clinical scope of practice, the AAAIP will offer an Animal-Assisted Intervention Specialist (AAIS) certification.

This is an exciting time for the field of AAT. Anecdotal accounts suggest that incorporation of animals into speech-language pathology practice is becoming increasingly popular. All those interested in AAT, clinicians and clinical researchers alike, have a responsibility both to the clients and to the nonhuman animals we engage in AAT to contribute to the careful practice and investigation of our methods. It is a responsibility to which we can enthusiastically look forward.

CONFLICT OF INTEREST
None declared.

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