Must Love Dogs: Literature Review and Manual for Animal Assisted Therapy in Speech-Language Pathology (Dementia)

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Short Header: Animal Assisted Therapy in SLP (Dementia)

ABSTRACT

Introduction*: Dementia is a general term for a decline in mental ability severe enough to interfere with daily life. Individuals with dementia often end up in long term care facilities with behavioural and psychological symptoms and communication disorders. Animal-assisted therapy (AAT) is being explored as a means to address these dementia-associated problems. AAT may be used for adults with dementia to reduce the impact of negative symptoms and increase social interaction and communication with other residents and staff in the long-term care facility. **Objectives:** This project was designed to (1) determine the usefulness of AAT in the rehabilitation of adults with dementia, (2) learn about the resources and supports available in the community, and (3) provide clinicians with a detailed plan outlining the steps involved in implementing an AAT program for adults with dementia. **Methods:** This project investigators investigated conducted a literature review of AAT and dementia, conducted an observation of AAT and constructed a manual based on the findings. **Impact:** The creation of an evidence-based practice document on AAT and dementia represents a novel contribution to speech-language pathology clinical practice and will form the foundation for future research on this topic.

INTRODUCTION

Animal-assisted therapy (AAT), also known as animal-assisted intervention, is an approach that has garnered attention from a myriad of health care professions due to its possible benefits. AAT involves the use of an animal, most often a dog (Williams & Jenkins, 2008), and a certified therapy team (including a handler) in order to help improve a patient's cognitive, social, emotional or physical well-being (Ernst, 2004). The therapist works within their scope of practice and sets treatment goals, measures progress, and evaluates outcomes (Chandler, 2005). AAT differs from animal-assisted activities which involve the use of animals to to enhance quality of life by improving motivation, education, recreation, and to encourage social encounters but do not include goals or an evaluation (Chandler, 2005).

Although using animals in therapy has only been studied academically since the 1960s (Urichuk & Anderson, 2003), animals have played an important role for patients in a therapy setting since the late 1800s when Florence Nightingale noted the calming effect small pets had on children and adults in psychiatric institutions (Ernst, 2014). The use of animals in therapy initially aimed to reduce the need for harsh sedatives and physical restraints (Urichuk & Anderson, 2003), and has long been aligned with the positive effects of elevating mood, alleviating stress, lowering blood pressure, and calming anxiety and aggression (Berek, 2013). More recently, scientific interest has focused on the medical value of AAT, prompted by one study that indicated possible life prolonging effects of owning a pet for those who had suffered a heart attack (Fine, 2010). AAT has been used for patients with communicative disorders since the early 1930s when Sigmund Freud observed the response of his patients to his dog Jo-Fi and began to use Jo-Fi specifically to facilitate communication with them. Later, in the early 1960s,

child psychologist Boris Levinson observed his nonverbal client (a 9 year old boy) begin to talk when seated with Levinson's dog, Jingles. This experience, combined with other similar observations, prompted Levinson to publish various works on the subject of AAT and he later became known as the "Father of AAT" (Ernst, 2014, p.27).

In conjunction with the extensive body of empirical evidence, there is a large body of anecdotal evidence to support the use of AAT in a variety of different rehabilitation contexts. A more thorough chronological account of the use of animals in therapy throughout history has been outlined by Ernst (2014), Chandler (2005), and others. Although research exists on the use of AAT with many individuals, including adults with dementia, there is scarce research for AAT with a focus on communication for adults with dementia. Given the increasing prevalence of dementia (World Health Organization, 2012), it is timely to review the use of AAT in the treatment of dementia.

OBJECTIVES:

The overarching goals of this project were to determine the usefulness of AAT in the rehabilitation of adults with dementia, to learn about the resources and supports available in the community, and to develop a detailed implementation plan for AAT in the city of Edmonton. The ability to communicate is integral to quality of life.

METHODS:

Search Strategy:

Academic Search Complete, SpeechBite, and University of Alberta Library database were searched using the keywords: dementia, long term care, communication disorders, speech, speech therapy, animal therapy, emotions, behaviour, and animal-assisted therapy. The reference lists from the selected articles were also searched for relevant resources. Additional resources were used such as a book on AAT in Edmonton (Urichuk & Anderson, 2003), various websites, manuals developed for other users of AAT, observations, and interviews.

To be included in the review, articles had to be related to dementia, be written in English, involve AAT, and involve long term care facilities. Articles were excluded if the focus was on animal-assisted activities versus therapy.

DISCUSSION AND LITERATURE REVIEW

Worldwide, approximately 36 million people suffer from dementia and every 20 years this number is expected to double (World Health Organization, 2012). Dementia is a general term for a decline in mental ability affecting various areas of cognition that is severe enough to interfere with daily life (World Health Organization, 2012). Individuals with dementia typically end up in long term care facilities with behavioural and psychological symptoms, such as physical and verbal aggression (Finkel, Lyons, & Anderson, 1992; Petrovic, et al., 2007). These symptoms are often treated with medications that have harmful side effects and a minimal effect on behaviour (Ballard, Gauthier, & Cummings, 2009; Kverno, 2009). Many individuals with dementia also present with communication disorders and may lack social interaction

opportunities in long term care; thus, new intervention techniques are being explored. One new method of intervention for individuals with dementia, with growing interest, is AAT as an alternative or complement to medicine (Nordgren & Engstrom, 2014). By redirecting and/or refocusing attention, AAT may improve social interaction and can be done as a group activity or individually as goal-oriented intervention (Richeson, 2003). Specifically, AAT is used for adults with dementia in care to reduce the impact of symptoms and increase social interaction and communication with other residents and staff. Currently, Sweden is the only country in the world with national standards for professional qualifications of therapists and the use of therapy dogs for adults with dementia (Nordgren & Engstrom, 2014). There are organizations in Canada that have standards and procedures for certifying and training animals for therapy with other populations, such as individuals with Autism Spectrum Disorder, Post-Traumatic Stress Disorder, and physical limitations (Arkow, 2011). It is challenging to implement non-medical interventions to improve the communication of adults with dementia as they need to be efficient, effective, feasible, and sustainable over time (Nordgren & Engstrom, 2014).

***Benefits*:**

Research has shown that just petting a dog can reduce loneliness, depression and social isolation as dogs are attentive, nonjudgmental, and show genuine attention and affection toward the patient (Ernst, 2014). The benefits of introducing dogs to nursing home residents with neurological disorders, such as dementia, are that dogs are able to read subtle cues in body language and respond appropriately, initiate interactions with patients, and show genuine pleasure during interactions (Marx et. al., 2010).

Recent research into the use of AAT has found other benefits for a variety of populations and environments. These participants reported higher scores of life satisfaction, self-esteem, perceived meaning in life, and general feelings of social acceptance than the participants in the dog-absent condition (Aydin et al, 2012). Reported outcomes of AAT include providing relaxation, pleasure, and rehabilitation (Marx et. al., 2010). In addition, other studies have found benefits in many areas, such as improving social, empathetic, and communication skills, as well as reducing anxiety, improving mood, and facilitating independent living. All of these benefits are reportedly due to animal interactions fostering positive emotions, which leads to increased confidence and reduced feelings of loneliness, sadness, anger, and insecurity. AAT can also reduce feelings of aggression and agitation, and can help engage residents with neurological disorders, such as dementia, in social activities. These benefits may be of specific interest to those living in nursing homes, where these feelings are a common experience (Ernst, 2014). Research suggests a link between study participants' past interest in or ownership of animals and positive outcomes of AAT (Marx, et. al., 2011).

With regard to communication specifically, LaFrance, Garcia, and Labreche (2007) conducted a single participant study that incorporated an A-B-C-A reversal design where condition A involved only the person with aphasia (PWA), condition B involved both the handler (i.e., the SLP) and PWA, and condition C involved the handler, PWA, and therapy dog. LaFrance et al. (2007) found that during an interaction activity, both verbal and nonverbal behaviours increased significantly during the condition where the participant with aphasia was accompanied by the dog and its handler. Perry, Rubinstein and Austin (2012) observed that, among individuals with a wide range of mental health diagnoses and medical disorders, levels

of openness appeared to increase with the presence of a therapy dog, as did overt changes in both verbal and nonverbal communication. Macauley (2006), found that on a verbal level, language had been observed to change from more formal or vague to expressly sharing deeply personal thoughts and feelings as participants with aphasia pet, sit with, or watch the dog. On a nonverbal level, it had been noted that members changed from a stiff and guarded body posture in chairs to an open and relaxed body posture while sitting with the dog on the floor. As well, increased use of spontaneous communication was observed to occur and other aspects of language such as fluency improved when speaking to a dog (Macauley, 2006).

AAT is well suited for long term care residents with dementia as it provides a context for social interaction that is not dependent on a resident's level of cognition (Marx, et al., 2010). For example, a dog will provide companionship regardless of a resident's state of awareness as dogs are nonjudgmental listeners and would not react negatively to hearing repetitions of the same phrase or story (Marx, et. al., 2010). Further, AAT is beneficial for individuals with dementia as it elevates their emotional state and alleviates negative emotions (Filan & Llewellyn-Jones, 2006). An elevated emotional state increases desire to initiate social interactions. Additionally, evidence suggests that the presence of animals in a long term care facility promotes speech production by eliciting more verbal responses in patients with dementia (Greer et. al., 2002), as well as enhancing the complexity and variety of content of the verbal response (Marx et. al, 2010). Incorporating AAT in a speech and language intervention program with this specific population may enhance the program by providing an optimal communication environment for clients, where they are encouraged to provide responses of increased quality and quantity.

Nordgren and Engstrom (2014) report that advantages of AAT relative to medical intervention for adults with dementia is that the use of therapy dogs does not cause physiological side effects, can relieve depression (Majic, et al., 2013), and can improve memory. These advantages are important as they facilitate communication and social interaction and may subsequently improve self-esteem and quality of life (Nordgren & Engstrom, 2014).

Barriers/Risks:

For all vulnerable populations, it is important to ensure the safety of the patient and the animal and to put safeguards in place that take into account various risk factors. To be certified to conduct AAT, most animal therapy organizations require that the animal pass a behaviour and skills evaluation to ensure that the animal does not have undesirable behaviours that may endanger the patient, the therapy team or other members of the facility. No matter how well trained the animal, there is always a chance that the client or the animal could harm one another, which may negatively impact therapy (Chandler, 2005). A client may unintentionally provoke the therapy animal, and injury could occur from inappropriate handling or lack of supervision. Safety protocols in case of accidents and injuries must be in place.

Infection control regulations should also be used. Most organizations require proof of current vaccinations to prevent zoonoses (i.e., the transmission of infectious diseases from animals to humans). Although zoonoses are relatively uncommon (Urichuk & Anderson, 2003), immunocompromised individuals, pregnant women, elderly adults, and children are at higher risk than healthy adults (DiSalvo et al., 2006).

To reduce risks and maximize benefits, it is important to identify individuals for whom AAT would not be suitable (Fine, 2010). Clients may have allergies, phobias, or have had

negative experiences with animals in the past. Clinicians should consider the patient's feelings and preferences about animals. For instance, if patients are not interested in AAT or wish not to have any contact with an animal, the patient's rights must be respected (DeCourcey, Russell, & Keister, 2010). The Pet Therapy Society of Northern Alberta (2006) reported additional individuals who may not benefit from animal therapy including clients who may compete for the animal's attention and people with different cultural perspectives of animals. For example, an individual from a farming or rural background may believe that animals should be outdoors, not in healthcare facilities. A possible way to assess client suitability for AAT, and satisfaction with the treatment, is to provide the client and family members with a survey about their likes and dislikes of their treatment (Bunton, Corrice & Mallon, 2010). Consent should be obtained from the client directly, or from a substitute decision maker if necessary (Ottawa Therapy Dogs, 2011).

Finally, a risk associated with AAT is feelings of loss when therapy is discontinued. Nordgren and Engström (2014) reported that some participants experienced a sense of loss or loneliness after AAT came to an end. In an attempt to counteract these negative feelings, researchers continued pet visitations, although no further therapy was conducted. To determine the sustainability of continuing visits to counteract these negative feelings, further research is necessary.

To minimize the risks that accompany the use of a live animal, a robotic or plush animal may be used, although benefits are not well established and certain individuals may be hesitant to interact with these inanimate objects (Marx et al., 2010). Even if all risks are accounted for, handlers and organizations still need to consider potential liability concerns; organizations must

make certain that their insurance policy will cover AAT-related incidents and that all members of the organization are covered (Fine, 2010). Organizations vary on the amount of liability coverage that is provided; for instance, the Pet Therapy Society of Northern Alberta ensures up to two-million dollars.

NEXT STEPS

To date, anecdotal accounts of the benefits of AAT to promote language, communication, and overall well-being outweigh academic research on the topic (Cole, 2009). In spite of limited scientific evidence, promising results from observational studies and anecdotal accounts have inspired many practitioners to consider implementing AAT into their own speech-language pathology practice. To effectively build upon scientific evidence to support the effectiveness of AAT, future research should include systematic examination of AAT in controlled studies. Researchers should consider pursuing interdisciplinary collaboration in research and intervention planning, a recommended intensity and duration for AAT, specific characteristics of the animal used (i.e., size, breed, and personal factors) and their subsequent effects on clients' speech, language, and communication abilities.

Electing to pursue an interdisciplinary approach to future research would:

"…cultivate a significant database of information, publications, resources, and ethical guidelines from a variety of professionals. Including a combination of animal professionals, mental health practitioners, animal advocate organizations and researchers, would offer varying perspectives and goals for research. This collaboration could encourage further discussion and potential partnerships and alliances. These

could benefit both professionals and clients, and help to grow the field of AAT." (Cole, 2009, p.60)

AAT's effectiveness in comparison to traditional therapies is still not well understood. In a study examining the effectiveness of AAT for persons with aphasia, both AAT and traditional treatments resulted in patients meeting or exceeding their goals (Macauley, 2006). However, patients reported that they made more progress in AAT, that it was more enjoyable, and that they felt more motivated to attend therapy sessions (Macauley, 2006). Boyer & Monkschenk (2014) also found that social communication increased for some children using AAT and their results suggest that AAT may be more effective than certain traditional therapies in eliciting child responses. Future research could compare traditional communication therapies to therapies that involve AAT for adults with dementia to help determine AAT's effectiveness. Further, research in this area would also help determine the perceptions of individuals with dementia about the use of AAT in their therapy (i.e., if they would be more motivated to attend therapy sessions and find the sessions more enjoyable, as evidenced in previous studies for other populations).

Another direction for future research is the importance of bringing the same animal to each session and its impact on therapy. It would be important to consider how using the same animal affects rapport between the client and animal, as well as the client and therapist. These are important considerations as the same animal may not be available for all therapy sessions.

Further controlled studies are necessary to evaluate the efficacy of AAT. A systematic review conducted by Kamioka, Okada, Tsutani, Park, Okuizumi, Handa, Oshio, Park,

Kitayuguchi, Honda, and Mutohl (2014) found that the majority of randomized controlled trials were of low quality. Building academic support for the efficacy of AAT through detailed randomized control trials and documentation of outcomes will further refine this therapy approach and contribute to its future use in a more meaningful manner. It will be important to determine effective assessment and treatment protocol to ensure optimal client care. Developing a thorough evidence base to support the use of AAT in communication therapy for adults with dementia, as well as enhancing the available resources for those attempting to implement an AAT program will make this therapy approach more accessible and better understood. For AAT to become a more widely accepted therapy in speech-language pathology "it is important to determine how and when the use of an animal is a more efficient treatment modality that will result in a functional benefit for the clients we serve" (Boyer & Monkschenk, 2014, p.37).

Manual Development/Clinical Implementation

We used this review of relevant literature to create a how-to manual for speech language pathologists who wish to implement AAT in their practice. Accompanying this literature review,we also observed AAT in action during an AAT session with a therapy dog (Jasper) and his handler at the Corbett Hall Early Education Program (CHEEP). CHEEP provides preschool education to children with developmental delays as well as typically developing children. Through this observation as well as an informal interview with Jasper's handler, we were able to inquire about training, insurance, and benefits as well as observe how AAT can be used to target Speech and Language goals. During therapy, Jasper wore a scarf from his training

with his name on it, as well as a noise-free collar to avoid any distracting noise in therapy sessions. Along with his work with pediatric clients, Jasper's handler reported that he also visits Queen Alexandra Lodge to do AAT with adults in long term care. At this facility, similar principles were applied; however, the speech and language targets are modified for adults.

Jasper's handler reported that he works with clients in small groups of two or three, as well as one-on-one. In these small groups, specific communication goals can be targeted. Targets may include speech sounds (e.g., **j**ump, **s**it, **sh**ake), sequencing (e.g., first use words, then Jasper performs a trick, then Jasper gets a treat), turn taking, wh- questions, using adjectives and verbs. Jasper's handler also noted that she sometimes brings in items that may elicit conversation around Jasper such as stuffed animals, a toothbrush, or even a scrapbook of Jasper. Other activities for learning basic concepts were practiced with Jasper including counting his paws, naming his body parts, identifying colors, and physical boundaries such as gentle touch. In conversation, the trainer noted that those that came to interact with Jasper have been found to initiate more communicative interactions and increase their verbal communication, both during their interaction with Jasper and following their interaction by sharing their experience.

Jasper's handler reported that if anyone is nervous around Jasper they are not required to interact directly with him. To increase a person's comfort level with Jasper, they may be eased into interactions with repeated exposures and modeling from staff members or parents. Further, they may begin by simply throwing a treat to Jasper while maintaining their distance. If an individual is allergic to Jasper or extremely uncomfortable, another method is used it to show a photo book of Jasper to initiate communication.

The trainer discussed the insurance required for Jasper in case of bites, aggression, or allergies. Jasper's trainer is there to ensure his well-being and safety during his interactions with the clients. For example, if an individual were to become overly excited or aggressive with Jasper, his trainer would adjust the interaction appropriately; for example, by taking Jasper for a short walk and allowing the individual to calm down. Alternatively, Jasper's trainer may encourage gentle touch through hand over hand interaction. Jasper's trainer pays close attention to his behaviour and watches for signs of fatigue or stress such as panting, shrinking away from the clients, whale eye (when the sclera of the eye is visible at the rim or corners), or tugging on his leash to leave. Jasper's trainer described the importance of Jasper also having fun with therapy and not thinking that he is at work. Therapy dogs, such as Jasper, need to not only tolerate interactions with people but to enjoy meeting new people and connecting with them (McConnell, 2012). This is especially important as the emotional connection between the client and the animal is an important part of the therapeutic effects of AAT (McConnell, 2012).

During a search for resources in the community, a book was found that outlined the implementation of AAT in a clinical setting (Urichuk & Anderson, 2003). There were online resources pertaining to Edmonton and Alberta laws regarding the use of animals in a clinical setting. We also compared local and provincial laws to those across Canada. While Alberta did not have many bylaws or restrictions associated with AAT, Ontario had more regulations and requirements a facility must abide before they can implement AAT.

Following a review of AAT literature and observations, a manual [see Appendix 1] was created to serve as a concise resource for future clinicians who intend to implement AAT in their communication therapy sessions with adults with dementia and other neurological

disorders. The manual outlines important considerations to be made before, during, and after a

treatment session in relation to the therapy dog, the dog's handler, and the client. It includes a

section for ongoing considerations to make throughout a treatment period, as well as specific

goal areas and corresponding activities for various areas of deficit (e.g., voice, pragmatics,

fluency).

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APPENDIX 1
Introduction

Animal-assisted therapy (AAT) involves introducing a specially trained animal into a clinical setting to augment a form of treatment. AAT has been incorporated into the treatment and management of a wide range of communication goals to improve social functioning. The purpose of this manual is to serve as a concise resource for clinicians who intend to implement AAT in their communication therapy sessions with adults with neurological disorders. The manual outlines important considerations to be made before, during, and after a treatment session in relation to the therapy dog, the dog's handler, and the client. It includes a section for ongoing considerations throughout a treatment period, as well as examples of specific goal areas and corresponding activities for various target areas (e.g., voice; pragmatics; fluency). A succinct 'how-to' checklist is included to support the clinicians' implementation of AAT into their speech and language practice.

Before the AAT Session

BEFORE THE AAT SESSION
1. Obtain client's written consent to participate in AAT (from client directly, or from substitute decision maker if necessary; Lefebvre et al., 2008).
    ○ For individuals with health problems, written consent from the physician must be obtained to ensure that the client, animal, and handler are not at risk for potential health concerns (Di Salvo, 2005).
2. Consider client suitability for AAT Not all clients are suitable for AAT; those who may not benefit from animal therapy are people who may compete with others for the animal's attention and people with different cultural perspectives of animals (The Pet Therapy Society of Northern Alberta, 2006).
    ○ Consider if patients have any allergies to animals, determine client comfort level with animals, and consider whether or not clients have an interest in animals (Lefebvre et al., 2008).
3. Obtain administrative approval. Organizations interested in implementing AAT should research federal, provincial, and local regulations regarding AAT. Further, any organization with liability concerns should assess their current insurance carrier's policy about animals. If animals are not covered in the current insurance policy, the organization will need to obtain coverage for staff, clients, and visitors (Mallon et al, 2010).
4. Obtain staff approval. A multidisciplinary approach to AAT is recommended when developing the policies for an AAT program; to be successful, it is important to get approval from all staff (Urichuk and Anderson 2003).
        5. Consider the following factors (Schreiner, n.d.):
            Risk management procedures - for animal attacks/unpredictable behaviours
    ○ Infection control procedures - animal health screening, hygiene procedures
    ○ Facility's liability policies that relate to the exclusion of animal use
    ○ Proof of current animal registration with a therapy dog organization

- Type of training for handlers and volunteers in regards to infection control, confidentiality protocols, orientation to the facility and so on
- Forms for keeping records on the volunteer and handler
- Insurance liability coverage - check with a professional association to learn about liability coverage when incorporating an animal; ensure that all staff, volunteers, and clients have liability coverage

2. Select a handler and a dog certified to conduct AAT. Organizations that certify dogs and handlers to conduct AAT include the Pet Therapy Society of Northern Alberta, Chimo Animal Assisted Therapy, the Delta Society, Ottawa Therapy Dogs.
3. Ensure the handler has put in place and followed a "visiting day grooming routine" for the dog (Ottawa Therapy Dogs, 2011)
   - Thoroughly brush and wipe dog down with a damp cloth
   - Wipe dog moving from nose to tail, making sure to wipe the inside of legs, belly, underside of tail, genitalia, and anus
   - Do not allow genital licking after grooming or at any point during sessions
   - Brush dog's teeth
   - Clean dog's eyes and ears
   - Make sure nails are smooth, file them if necessary (acrylic nail files work well)
4. Plan your treatment target (measureable SMART goals) and account for how the therapy dog will be implemented in the treatment session.
5. Consult with handler prior to the session so that they are aware of their responsibilities as well as the animals responsibilities for the session.
6. Consider AAT program evaluation - how will success be determined?

During the AAT Session

1. In therapy dogs, watch for:
   - Undesirable behaviours (e.g., a dog that jumps, has anxiety, is aggressive, and excessively licks clients)
   - Stress reactions and discomfort towards specific/all clients
   - Signs that the dog is ready for retirement (e.g., the dog is aging, no longer having fun, no longer wishes to cuddle, becomes disabled, gets sick, loses their appetite) (Ottawa Therapy Dogs, 2011)
   - Accidents
2. Collect session data (e.g., what was effective or ineffective, what needs to be changed for next time) and probe data (e.g., look for generalization, maintenance, and stimulability)
3. Note client reaction to the dog (positive? negative? productive and goal-directed?)

4. Ensure that the handler is ultimately in control of the dog's behaviour and is responsible for enabling rewarding behaviours when speech and language expectations have been met

After the AAT Session

1. Evaluate the handler. Handlers must be consistently evaluated. They must be in control of the therapy dog at all times (Ernst, 2014), and must have a good relationship with the therapy dog.
2. Evaluate the therapy dog/animal. A facility should develop ongoing assessment and evaluation forms to ensure a therapy dog is effective for clients, as well as safe and well cared for.
    ○ Most therapy organizations suggest that a therapy dog's suitability to be a part of an AAT program should be evaluated and reviewed every two years and more often if radical changes occur with the animal such as sudden changes in behaviour, aggression, anxiety and motivation (Cole, 2009).
3. Evaluate the effectiveness of the animal in helping clients progress toward speech, language and communication goals.
4. Collect impact data (e.g., caregiver and client perspectives on the intervention)

Ongoing Considerations

1. **Diet, nutrition:** A healthy diet makes for a healthy and happy dog. Each dog requires their own specific and individualized diet and meal plan so be sure to talk to a vet about this. Depending on the facility, it may be prudent to have an outlined policy regarding scheduling mealtimes, and food type.
2. **Exercise:** Regular (preferably daily) exercise is important for a therapy dog's health and both their physical and mental wellbeing. A restless dog is not an effective therapy dog. Depending on the facility, it may be useful to have an exercise log or schedule that must be followed by either the handler or by the staff. Talk to a veterinarian about the breed-appropriate exercise schedule that should be followed.
3. **Work life balance for dog**: Anderson (2008) suggested that the therapy dog be granted lengthy downtime to be a dog, i.e., to exercise, play, rest, and smell the roses, and that therapy sessions should last no longer than an hour at a time.
4. **Proper grooming:** Daily grooming, teeth brushing, bathing, nails, eyes and ear checks

Treatment Goal Areas
Voice: Activities could include increasing a client's volume of voice; for example, using a sound level meter, measure the client's volume of speech and decide on an achievable target dB level. The handler will allow the dog to respond to the client when the client speaks at the target dB level. Another activity to work on loudness would be to have the dog move further and further away so that the client must increase their volume in order for the dog to hear them and

respond to a command. These activities would be highly motivating and the dog's behaviour would reinforce the accuracy of the client's verbal or vocal output.

Reading and Writing: Activities could include reading to the dog, writing to the dog or about the dog, and later sharing the information, perhaps in a group therapy setting.

Pragmatics: Activities could focus on practising turn taking skills; for example, taking turns giving the dog instructions to do a trick and giving them a treat, taking turns petting or grooming the dog, or taking turns walking the dog. Activities may also include practicing gentle touch, talking distance, social stories, and helping client to understand theory of mind (understanding what makes the dog happy).

Receptive Language: Activities could include following directions, pointing to or identifying features (e.g., "point to the dog's nose!"), discriminating actions of the therapy animal (e.g., "is the dog sitting?"), categorization of toys/animal accessories, etc.

Expressive language: Activities can include but are not limited to: expressing commands (e.g., sit, stay, lay down, etc.) and providing praise for following commands; greeting the animal and bidding them farewell as they leave; describing the physical characteristics or actions of the animal; asking questions about the dog (e.g., age, breed, activities), making requests (e.g., request to pet animal, or give treats); and getting the client to talk about past pets.

Swallowing: Activities could include sharing mealtime routines.

Speech sounds and Articulation: Activities could include working on speech sounds that also correspond with commands (e.g., work on /s/ by practicing "sit and stay" and then using the dog as a reinforcer or accuracy of the command.

Fluency: Activities can include practicing a slower rate of speech, light touch, easy onset, easy breathing, and stretching sounds. Commands can be used in conjunction with these shaping techniques and the client must properly demonstrate these techniques in order to elicit a response from the therapy dog.

Conclusion

AAT is becoming more prevalent and has potential as an alternative or supplemental therapy to traditional rehabilitation interventions. Research shows that AAT involves many benefits as well as challenges that must be considered when using AAT as a method of therapy for speech, language, and communication.

This manual has been developed from a review of previous research and observation of AAT in a speech therapy session. The manual also includes references and additional websites that provide current information available on implementing AAT. After reviewing this manual readers should be better equipped to determine if AAT is appropriate for their practice and to implement AAT in therapy sessions. This paper and accompanying manual serve to increase understanding and potential of involving AAT in speech-language therapy and enhance interventions in the field of communication disorders.

Checklist:

Before the AAT Session

- ❏ Obtain consent (from client)
- ❏ Consider: is the client a suitable candidate for AAT?
- ❏ Obtain administrative approval
- ❏ Obtain approval from all staff members
- ❏ Consider: does the facility have the appropriate policies in place?
    - ❏ Risk management procedures
    - ❏ Infection control procedures
    - ❏ Facility's liability policies
    - ❏ Proof of current animal registration with a therapy dog organization
    - ❏ Type of training for handlers and volunteers
    - ❏ Forms for keeping records on the volunteer and handler
    - ❏ Insurance liability coverage
- ❏ Select an appropriate and compatible handler and dog
- ❏ Ensure that a "visiting day grooming routine" has been followed by the handler
- ❏ Plan client-specific treatment target
- ❏ Plan the AAT program evaluation - how will success be determined?
- ❏ Ensure handlers are aware of their responsibilities and the expectations placed on them (and their therapy animal/dog)

During the AAT Session

- ❏ Collect data
- ❏ Consider dog behaviour
    - ❏ Undesirable behaviours
    - ❏ Stress reactions and discomfort towards specific/all clients
    - ❏ Signs that the dog is ready for retirement
    - ❏ Accidents
    - ❏ Licking behaviour
- ❏ Consider Client reaction to the dog
    - ❏ Positive
    - ❏ Negative
    - ❏ Productive toward goal achievement
- ❏ Evaluate handler's control of therapy dog

After the AAT Session

- ❏ Handler evaluation
- ❏ Therapy dog evaluation
    - ❏ Behaviour
    - ❏ Contributions to client goal progress

❏ Client goal progress

For more resources to assist you in implementing AAT into your practice:
- Ottawa Therapy Dogs (2011). *Ottawa Therapy Dogs: Good Dogs Doing Great Work.* Retrieved June 27, 2015 from http://ottawatherapydogs.ca
- Cole, M.L. (2009). *Literature Review and Manual: Animal-Assisted Therapy.* Lethbridge: Alberta.
- Fine, A. (2010). Handbook on animal Assisted therapy: Theoretical foundations and guidelines for practice (3rd ed). San Diego, CA: Academic Press.
- Urichuk, L., & Anderson, D. (2003). *Improving mental health through animal-assisted therapy*.
  Edmonton, Alberta: Chimo Project
- McCarthy, L. (2011, November 30). Animal-Assisted Therapy: Assimilation within a structured speech and language pathology framework. Retrieved November 26, 2015 from: http://speech-language-pathology-audiology.advanceweb.com/Features/Articles/Animal-Assisted-Therapy-2.aspx
- Schreiner, P. (n.d.). *Animal Assisted Activities Policies and Procedures.* Retrieved July 5, 2015 from http://www.censhare.umn.edu/