

In presenting this thesis in partial fulfillment of the requirements for an advanced degree at Idaho State University, I agree that the Library shall make it freely available for inspection. I further state that permission to download and/or print my thesis for scholarly purposes may be granted by the Dean of the Graduate School, Dean of my academic division, or by the University Librarian. It is understood that any copying or publication of this thesis for financial gain shall not be allowed without my written permission.

Signature _____

Date _____

Prevalence, Attitudes, and Experiences
of Speech-Language Pathologists
With Animal-Assisted Therapy

J. Alyse Watt

Idaho State University

A thesis
submitted in partial fulfillment
of the requirements for the degree of
Master of Science in Communication Sciences and Disorders
Idaho State University
August 8th, 2014

Copyright (2014) Jacqueline Alyse Watt

To the Graduate Faculty:

The members of the committee appointed to examine the thesis of Jacqueline Alyse Watt find it satisfactory and recommend that it be accepted.

Jeanne M. Johnson, Ph.D., CCC-SLP
Major Advisor

Diane Ogiela, Ph.D., CCC-SLP
Committee Member

Elizabeth Horn, Ph.D.
Graduate Faculty Representative

ANIMAL-ASSISTED THERAPY

Idaho State
UNIVERSITY

Office for Research Integrity
921 South 8th Avenue, Stop 8046 • Pocatello, Idaho 83209-8046

November 11, 2013

Jacqueline Alyse Watt
1311 E Central Dr.
CSED
Meridian, ID 83642

RE: Your application dated 11/11/2013 regarding study number 4006: Prevalence, Attitudes, and Experiences o Speech-Language Pathologists with Animal-Assisted Therapy

Dear Ms. Watt:

I agree that this study qualifies as exempt from review under the following guideline: 2. Anonymous surveys or interviews. This letter is your approval, please, keep this document in a safe place.

Notify the HSC of any adverse events. Serious, unexpected adverse events must be reported in writing within 10 business days.

You are granted permission to conduct your study effective immediately. The study is not subject to renewal.

Please note that any changes to the study as approved must be promptly reported and approved. Some changes may be approved by expedited review; others require full board review. Contact Patricia Hunter (208-282-2179; fax 208-282-4529; email: humsubj@isu.edu) if you have any questions or require further information.

Sincerely,



Ralph Baergen, PhD, MPH, CIP
Human Subjects Chair



Phone: (208) 282-2592 • Fax: (208) 282-4723 • www.isu.edu/research
ISU is an Equal Opportunity Employer

Acknowledgments

To my King Wink and my Leonard, without you two and your beautiful souls I would not be where I am today and would not be completing this project. You are my inspiration. Viloolah, Gus, Lola, Buddy, Willow, Oliver, Sandi, and Onslow: thank you for allowing me to be your human and supplying me with unconditional love.

I would like to thank my parents for supporting me not only emotionally but financially as well, I couldn't have done any of this without you. Thank you for being the best parents anyone could ask for and thank you, Mom, for defining the word, "strong." I would like to thank Nana and Grandma Ann for showing me excellent examples of what strong, independent women are and what it means to "keep on keeping on." I would also like to thank my brothers, Jim and Big Al for doing whatever big brothers do and always supporting me. Thanks should also go to my nephews and niece for always being my wingmen and agreeing to call me, "Master Alyse." My extreme thanks also goes out to my Aunt Judy and the rest of the Thorson clan for all of their hospitality and support that they have given me throughout my time in school. Papa and Uncle Ron-Ron, thank you for being my guardian angels while I have been living away from home.

Thank you, Angie, for being my partner in crime throughout this entire program; I don't know where I would be without you. And Ashley, you have been my rock throughout the past two years. Thank you both, for allowing me not only into your lives but your families as well.

I would also like to acknowledge and thank both Dr. Flipsen and Dr. Johnson for guiding me through this process. I thank Dr. Flipsen for being open to starting this crazy idea and Dr. Johnson for agreeing to take over this project and taking the time to help me through all the edits and sifting through the results. I have so much appreciation for both of you.

Lastly, I would like to thank Him, for guiding me through this wonderful life.

Table of Contents

| | |
|---|-----|
| List of Figures | x |
| List of Tables | xi |
| Abstract | xii |
| Chapter One: Introduction | 1 |
| Chapter Two: Literature Review | 3 |
| Levels of Evidence | 3 |
| Potential Benefits of AAT | 4 |
| Types of Animals Being Used | 10 |
| Populations (Age Groups) Served with AAT | 15 |
| Geriatric | 15 |
| School-aged | 18 |
| Clients with Various Diagnoses Being Treated with AAT | 24 |
| Autism Spectrum Disorders | 24 |
| Mental Health Disorders | 28 |
| Communication and Social Skills | 30 |
| Attitudes Toward AAT | 31 |
| Chapter Three: Methodology | 35 |
| Participants | 35 |
| Instrumentation: Software and Questionnaire | 36 |
| Procedure | 38 |
| Chapter 4: Results | 40 |
| Demographics | 42 |

ANIMAL-ASSISTED THERAPY

| | |
|---|-----|
| Prevalence and Experiences of AAT Among Professionals | 45 |
| Animals Being Used and Considered Using | 52 |
| Clients with Various Diagnoses | 56 |
| Age Ranges of Clients | 59 |
| SLPs' Attitudes of AAA and AAT | 62 |
| Chapter 5: Discussion | 70 |
| Demographics | 70 |
| Benefits of AAT and AAA | 72 |
| Types of Animals Used in AAA/AAT | 72 |
| Clients with Various Diagnoses | 73 |
| Age Ranges of Clients | 74 |
| SLPs' Attitudes of AAA and AAT | 75 |
| Possible Treatment Targets | 76 |
| Conclusion | 77 |
| References | 80 |
| Appendices | 87 |
| Appendix A | 88 |
| Appendix B | 89 |
| Appendix C | 90 |
| Appendix D | 96 |
| Appendix E | 97 |
| Appendix F | 99 |
| Appendix G | 110 |

List of Figures

| | |
|---|----|
| Figure 1: Flow Chart of Questions in Survey | 41 |
| Figure 2: Regions Where Participants are Located | 45 |
| Figure 3: Responses to Questions 2 and 4 Regarding Working with AAT | 47 |
| Figure 4: Years Worked With AAA/AAT | 48 |
| Figure 5: Number of Clients per Week SLPs Treat Using AAA/AAT | 49 |
| Figure 6: Participants' Description of Using AAA/AAT During Therapy | 52 |
| Figure 7: Animals Used in Therapy and Animals Respondents (With and Without Prior Experience with AAA/AAT) Would Consider Using in Therapy | 56 |
| Figure 8: Diagnostic Categories of Client with Whom AAA/AAT has been Used and Diagnostic Categories with Whom Respondents (with and without AAA/AAT) Experience) Would Consider Using AAT | 59 |
| Figure 9: Age Ranges Used or Considered Using with AAA/AAT | 62 |
| Figure 10: Treatment Targets That May Be Positively Impacted by AAT | 65 |
| Figure 11: Number of Responses to: "AAT is an Effective Approach for Speech-Language Pathology Treatment." | 67 |
| Figure 12: Number of responses to "AAT is a MORE Effective Approach for Speech-Language Pathology Treatment than AAA" | 68 |

List of Tables

| | |
|--|----|
| Table 1: Participant Demographics | 44 |
| Table 2: Regions Where Participants Are Located | 44 |
| Table 3: Responses to Questions Regarding Working With AAT | 47 |
| Table 4: Number of Clients per Week SLPs Treat Using AAA/AAT | 49 |
| Table 5: Participants' Description of Using AAA/AAT During Therapy | 51 |
| Table 6: Animals Used in Therapy and Animals Respondents (With and Without Prior Experience with AAA/AAT) Would Consider Using in Therapy | 55 |
| Table 7: Diagnostic Categories of Client with Whom AAA/AAT has been Used and Diagnostic Categories with Whom Respondents (with and without AAA/AAT) Experience) Would Consider Using AAT | 58 |
| Table 8: Age Ranges Used or Considered Using with AAA/AAT | 61 |
| Table 9: Treatment Targets That May Be Positively Impacted by AAT | 64 |
| Table 10: Number of Responses to: "AAT is an Effective Approach for Speech-Language Pathology Treatment" | 66 |
| Table 11: Number of Responses to: "AAT is a MORE Effective Approach for Speech-Language Pathology Treatment Than AAA" | 68 |

Abstract

Although animal-assisted therapy (AAT) is being used in the fields of counseling, occupational therapy, and physical therapy, research is lacking in the field of speech-language pathology. To determine SLPs' perceptions of and experience with AAT, a survey was conducted with 490 SLPs responding. Findings indicated that 140 of 490 participants have or are still using AAA or AAT within their SLP practice, mostly to target expressive language skills. Dogs, horses, and cats are the most prevalent animals that either are being used with speech-language pathology, or would be considered for use within a SLPs' practice. The most prevalent groups currently receiving AAT or AAA are clients across all ages and those diagnosed with developmental cognitive delays, autism spectrum disorder, and language impairments. Around 52% of the participants indicated that they agree with the use of AAT as seen on the results of question 11 within the questionnaire. Most participants also indicated on a Likert Scale that they agree (28%) or neither agree nor disagree (35%) that AAT was a more effective SLP treatment than AAA. The results indicate that AAT and AAA are being used within the speech-language pathology field and the use of AAT can be welcomed with positive attitudes among SLPs; however, the SLPs' attitudes indicated that many do not believe that AAT is better than AAA.

Chapter One: Introduction

Animal-assisted therapy (AAT) is utilized in multiple forms of human services; however, it is not clear how prevalent it is or how beneficial it would be within speech-language pathology practice. The goal of the present study is to document the prevalence of AAT and animal-assisted activities (AAA), as well as some of the attitudes toward and experiences with AAT and AAA from the viewpoint of practicing SLP (speech-language pathologist) clinicians.

Pet Partners (2012), a large organization that supports the use of animals in therapy, defines AAT as:

... a goal-directed intervention in which an animal that meets specific criteria is an integral part of the treatment process. AAT is directed and/or delivered by a health/human service professional with specialized expertise, and within the scope of practice of his/her profession. (n.p.)

AAT should not be confused with AAA as they are two separate entities. Pet Partners (2012) discussed the differences between AAT and AAA stating that AAA does not have specific treatment goals involving the animals, the visits with animals are spontaneous, and the volunteers or workers do not take detailed notes about effects related to the animals. The main purpose of this study is to address AAT solely; however this is not possible due a lack of a clear definition of AAT used among many studies, some included within this current study's literature review, as well as a lack of a clear definition used publicly. It was difficult to distinguish between AAT and AAA

ANIMAL-ASSISTED THERAPY

among the different research within the literature review and the responses from the questionnaire; therefore this study addresses both AAT and AAA.

To show the current status of AAT, the following literature review will discuss potential benefits of AAT, types of animals being used, age groups served with AAT, the types of clients with various diagnoses being treated with AAT, and attitudes towards AAT. Due to the lack of studies completed on AAT within the speech-language pathology field, most of the literature that is reviewed was conducted in other health fields, such as physical therapy, occupational therapy, mental health, and childhood education. Because studies vary in the quality and type of evidence presented, the first topic will be the scale for Levels of Evidence provided by the American Speech-Language-Hearing Association (ASHA) (2004) which will be used to evaluate the studies mentioned.

Chapter 2: Literature Review

Levels of Evidence

An important factor that contributes to the believability of the studies within this literature review is levels of evidence. ASHA (2004: Appendix A) lists separate levels of evidence to aid in determining the quality of evidence collected from research studies. The first three levels include “well-designed” studies. Level Ia and Ib studies are randomized control studies and meta-analyses that have more than one randomized control trial. A Level IIa is a study that is conducted without randomization, but with adequate control. Level IIb is a quasi-experimental study. According to Meline (2010) most of the studies done in the field of speech-language pathology are quasi-experimental studies, meaning they lack randomization but appear to be experimental designs. Level III studies are nonexperimental such as case studies or correlational studies. The last level, Level IV, can either be clinical experiences, consensus conferences, or expert committee reports. Studies that are a review of literature without statistical metaanalysis are not included in this scale. This rubric for evaluating levels of evidence will be used throughout the following review of literature. The scale is provided in Appendix A and a table showing where all the studies fit into the scale is provided in Appendix B.

Some studies presented within the literature review are neither observational nor experimental and do not fit within the Levels of Evidence presented by ASHA. For studies such as these, the Centre for Evidence Based Medicine (CEBD) (2013) study design tree will be used to evaluate the evidence. The design tree by CEBM is presented in Appendix A and a table of the studies that fit within it is presented in Appendix B.

Potential Benefits of AAT

The benefits of AAT have not been well documented and the number of empirical, peer reviewed studies with strong levels of evidence is small. When gathering literature to support the current study, it was apparent that many were comparative studies that looked at lower level studies to identify a need for more research. Levinson (1971) as mentioned by Friesen (2010) wrote a book regarding the possible physiological, emotional/social, and physical benefits of AAT among school-age children. Friesen concluded that school-age children who require therapy can benefit from AAT as animals (in particular, dogs) can provide a supportive environment. This can be deduced with the help of Friedmann, Katcher, Thomas, Lynch, and Messent (1983) who determined with their study that a child's heart rate could be lowered when they were in the presence of a dog. The authors also found that a child's perception of both the experimenter and the environment they were placed in to take statistics of their blood pressure and heart rate changed when the dog entered the room by making both the experimenter and the environment friendlier and less threatening. The lowering of blood pressure can help a child feel more secure which may produce a more supportive environment. Dogs may also lend to a supportive environment by contributing to student's emotional stability (Anderson & Olsen, 2006). A supportive environment can also be produced by merely having children in the presence of a dog, as the dog can lead to the children becoming more attentive (Limond, J., Bradshaw J., & Cormack, K, 1997). Velde et al. (2005) reviewed unpublished master theses, one of them completed by Ferrese et al (1998) reported that occupational therapists (OTs) did recognize benefits of AAT in particular settings such as nursing homes; specifically, they reported that the

ANIMAL-ASSISTED THERAPY

motivation for the resident's communication increased when they were in direct contact with the animals. Regarding the use of dogs for school age children requiring goal-directed therapy, Friesen stated that dogs are non-judgmental which facilitates a more positive learning environment. Friesen concluded in her article that the studies she reviewed demonstrated that the presence of therapy dogs within the classroom setting may increase children's socialization.

While AAT can be viewed as a more serious and direct form of treatment, there is something to be said just about the presence of an animal in the use of AAA. According to Patriot Rovers Inc. (2013), a company that provides service dogs for veterans, the use of trained service dogs can alleviate the symptoms of post-traumatic stress disorder (PTSD) such as feelings of isolation, hyper vigilance, nightmares, and feelings of being threatened. Patriot Rovers claims that the feeling of isolation could be alleviated by a service dog simply by nuzzling and displaying affection for its owner. A service dog could relieve the symptom of being hyper vigilant by notifying the veteran when another person is present. The service dog can be trained to interrupt the veteran's nightmares when occurring and may also create a safe personal space which could help the veteran's feelings of being threatened. While the use of the service dog to diminish the symptoms of PTSD is not necessarily animal-assisted therapy, one can deduce from the claims of Patriot's Rovers that a dog can provide a loving and safe environment which could aid many who are feeling threatened or scared. A SLP may have some clients who are shy and are scared to go to treatment rooms to complete therapy and one possible way of alleviating this is by having an animal walk the client to the treatment room and possibly staying in the room if needed.

ANIMAL-ASSISTED THERAPY

Research (Nimer & Lundahl, 2007) has suggested that using animals can be beneficial to some clients who require different types of therapy such as occupational therapy (Velde, Cipriani, & Fisher, 2005), physical therapy, and services for persons with mental disorders. Benefits include improved social interaction, well-being, motivation to complete therapy, mental health functioning, as well as reduced loneliness and symptoms of Autism Spectrum Disorder (Berry, Borgi, Terranova, Chiarottie, Alleva, & Cirulli, 2013). There have been multiple reports documenting the use of animals within nursing home facilities to promote mental health and wellness (Behling, Haefner, & Stowe, 2011; Berry et al., 2012; Ferrese, Forester, Kowalksi, & Wasilewski, 1998). Additionally, studies using dogs for reading therapy (Friesen, 2010; Jalongo, 2005) indicated motivational benefits; children may view dogs as non-judgmental listeners, thereby increasing willingness to read aloud. Despite these reports of benefits relevant to communication disorder, published studies of the use of AAT by SLPs are relatively uncommon. Chandler (2001) focused on AAT that is used in the area of counseling as well as in the school settings. Chandler reported that both AAT and AAA are becoming more popular among therapy professions and is now beginning to show within the counseling field. It was also reported that an animal may provide a warm and playful presence which could provide clients a comforting feeling and can lead the therapist to using that animal with many different types of clients and in different types of therapies. A trust-building bond between the therapist and the client could possibly be facilitated by the presence of an animal. Chandler also stated that using animals within the classroom setting could help children practice: physical and motor skills through animal interactions, discipline, loyalty, responsibility, and help them by incorporating an attitude

ANIMAL-ASSISTED THERAPY

of kindness and compassion. While the article does report many benefits to the use of AAT within the classroom and counseling settings, it should be noted that it is not peer reviewed and at most provides evidence as level IV.

Animals could be hypothesized to have many different effects on clients' communication skills. In addition to those already mentioned, potential effects could include increased conversation initiation skills when talking directly to an animal or discussing an animal with others, improved voicing by practicing commands with an animal, improved joint attention by having the client and therapist concentrate on the animal and then shift to other activities, and, finally, improved motivation to communicate or to work on specific skills. While the mere presence of an animal may motivate a client to participate within a therapy program, presence alone does not fall under the definition of AAT, as stated earlier. Just having an animal present falls more under the definition of AAA as motivation is not usually a specific communication treatment goal for a client. The presence of the animal and the motivation that a client might have when arriving to therapy and knowing that they will see an animal does not follow AAT's definition; however, other motivating factors of the animals may be able to fit under AAT's definition. Motivation can affect how a client interacts with the communication partners around them. For example, having a client with an augmentative and alternative communication (AAC) device use their device when interacting with others and a dog could be a specific treatment goal. Perhaps one of the client's goals is to request objects using their AAC device; during speech and language therapy a SLP could have the client request what they want to throw for the dog during a game of fetch such as a ball or stuffed toy. They could also have the client request different objects such as a

ANIMAL-ASSISTED THERAPY

brush or food to use when interacting with the dog. While the dog is not specifically written into the client's goals, the motivating factor of interaction with the dog could be used to target their goals. Horses and dogs could also be used in speech and language therapy that is targeting vocal intensity of a client. Certified therapy animals such as a horse or a dog are required to follow verbal commands and these commands can be given by a client. A client who is in speech and language therapy could have goals that target increasing vocal intensity and having the client calling the animal and giving it commands would be a way to target their treatment goal.

There is reason to suggest that animals may be of value to specific areas of speech-language pathology practice. One example would be in working with social communication with the geriatric population. Behling, Haefner, & Stowe (2011), Berry et al. (2012) and Morreti et al. (2011) demonstrated that the use of animals among the geriatric population in nursing homes can be beneficial to the client's social needs and, in some instances, emotional needs as the animals may provide a sense of companionship and a communication partner. Another example is that of the above-mentioned school-age reading therapy programs in which children who have difficulty with literacy read aloud to dogs (Friesen, 2010). Because foundational reading skills (phonological discrimination and awareness) are in an SLP's scope of practice, using AAT for targeting these skills with children who hesitate to participate might be beneficial. A third possibility is in working with children who have sensory processing disorders or who have deficits in sensory integration which may lead them to being hyper- or hypo-sensitive to various stimuli. Riding horses, for example, during physical and occupational therapy for such children has a reported calming effect due to the rhythmic walk of a

ANIMAL-ASSISTED THERAPY

horse (American Hippotherapy Association Practice Committee, 2000.) The use of horses within the occupational therapy and physical therapy fields has grown in popularity and is used with many different syndromes (American Hippotherapy Association Practice Committee, 2000). Horses may aid in providing a calming learning environment that could possibly lessen a child's focus on confusing sensory input and increase focus on the social communication needed to interact not only with the handlers and therapists but the horses as well.

Walsh (2009) closely examined the bonds that humans have with animals and what significance it may have for human-animal relationships. Walsh discussed various studies reporting that dogs are not just beneficial for lowering blood-pressure, but they also are effective for relieving stress as well as improving a person's self-esteem and acceptance. The bond between humans and animals was also reviewed and from the studies reviewed it was determined that persons who have a close bond with their pet does not mean they are trying to replace human companions, but may have a larger capacity for love and compassion. Walsh described the human and animal bond as a very special bond that has many benefits such as promoting relaxation, enhancing well-being, and providing security, comfort, and companionship. The positive bond that is often found between humans and animals could benefit many clients that require therapy. Some clients that require therapy may not be willing to talk and appear withdrawn which can be detrimental to therapy time; if the person owned a dog in their past then they may still feel a special bond to a dog presented within the therapy and feel as if they can talk with the help of that bond.

Given the potential benefits for clients, it would be useful to know whether SLPs have witnessed such benefits that are occurring and to what extent; understanding this might help other clinicians who are considering the use of animals. Knowing the specific benefits of AAT within the speech-language pathology field might also spur research regarding the most suitable populations, the optimal roles that animals might play, additional (as yet unknown) benefits, and possible limits on their use. Understanding these aspects as well as why SLPs are currently using animals might help in designing appropriate curricula for SLP training programs and/or in-services for practitioners. The hope of this study is to start laying a discipline-specific foundation for additional research on AAT in speech-language pathology by gaining a better understanding of AAT and how many SLPs use it as well as the attitudes and experiences of SLPs regarding the use of animals in conjunction with speech-language pathology. Conversely, the findings of this study as well as some of the further research that it sparked could prove that AAT is not commonly used and that it may not have as many benefits as it does drawbacks. In either case, it is important to gain knowledge of the possible benefits and disadvantages to AAT used in conjunction with speech-language pathology as they both can aid in future use.

Types of Animals Being Used

Although animals are being used in different types of health profession fields such as physical therapy, occupational therapy, as well as in the mental health fields (Berry et al., 2012; Nimer & Lundahl, 2007; Velde, Cipriani, & Fisher, 2005), Chitic, Rusu, & Szamoskozi (2012) completed a level IIa evidence meta-analysis and found that many of the studies they reviewed did not specify what type of animal was being used and/or the

characteristics of the animal. It is valuable to understand which animals would benefit different types of individuals. While searching for studies that met their criteria for the meta-analysis, Chitic et al. were only able to identify four studies that met their criteria; two out of the four studies used dogs ($n = 45$; $n = 100$) one study used a combination of cats and dogs ($n = 20$), and one study used a dolphin that was specially trained ($n = 94$). The effect size of the four studies indicated a significant increase in communication and social skills (the dependent variables of the studies). Communication and social skills were measured in three of the four studies by subjective measurements and one study was measured by objective measurements. The subjective measurements included the Social Adaptive Functioning Evaluation (SAFE), UCLA Loneliness Scale (version 3), a questionnaire designed by the study's authors, and the Basler Benfindlichkeitsskala. Chitic et al. found that studies specifically using dogs did have a larger effect size of 0.729 compared to the study that included the dolphin of 0.42; however, the study which did not specify the proportion of dogs and cats that were used within therapy, had the largest effect size of 3.11. Effect size was calculated based on mean values and standard deviation using Cohen's formula (d). A significant effect size is considered to be a value of 0.8 or larger.

Many studies have focused on dogs in the use of AAT (Behling, Haefner, & Stowe, 2011; Berry, Borgi, Francia, Alleva, & Cirulli 2013; Berry et al., 2012; Ferrese, Forester, Kowalksi, & Wasilewski, 1998; Friesen, 2010; Jalongo, 2005; Morreti et al., 2011; Solomon, 2010). Dogs appear to be one of the most prevalent animals being used within AAT, but many of the studies do not specify what types of dogs they used. There could be a large difference in participant's reaction to AAT due to the wide variations in

ANIMAL-ASSISTED THERAPY

dog breeds and to misconceptions of the breeds and the sizes of the animals. For example, there is a common misconception that dogs such as Pit Bulls (Cohen & Richardson, 2002) are “bully breeds” and are the most dangerous breeds in human interactions. If AAT is done with those specific breeds, it may affect the attitudes of the participants towards the therapy and potentially the outcomes. There are also certain implications about smaller dogs such as toy breeds, as they may be seen as more/less friendly and their size may make the clients feel more/less comfortable. It would be useful to know more about the different breeds and sizes of dogs and their effects on the client’s outcome of therapy.

Another animal that is being used for AAT is the horse. AAT therapy with horses is also known as equine-assisted therapy or hippotherapy (Bass, Duchoway, & Llabre, 2009; Macauley & Gutierrez, 2004; Thompson, Iacobucci, & Varney, 2012). Hippotherapy has been used with different types of populations specifically for occupational and physical therapy as the horse’s walk is believed to provide additional sensory input or feedback for balance and coordination training (Janura et al., 2004; Snider, Korner-Bitensky, Kammann, Warner, & Saleh, 2007). Another field that employs the use of horses within AAT therapy is counseling and psychology where it is used with children who have autism (Thompson, et al., 2012). Thompson and colleagues (2012) refer to a body of research specifically on the benefits of hippotherapy for children with autism; however, most of the studies would not be considered to be of a high level of evidence nor are they peer reviewed. Thompson et al.’s conducted a study by searching the internet and identifying 115 websites regarding the use of hippotherapy for persons with disabilities. The websites were then searched for appropriate data to back

up their claims that hippotherapy is a beneficial type of therapy; however, many of the websites were unable to identify any empirical evidence. This study's evidence is a level IV or below as it reviewed low level evidence when searching the internet for clinical settings offering hippotherapy. Trotter, Chandler, Goodwin-Bond, and Casey (2008) examined the use of horses in counseling for at-risk (for academic and/or social failure) school-age children. As previously noted, the authors did find statistically significant evidence of higher self-esteem as well as improvement in relationships with parents among the participants self-rating, and an improvement of anxiety and depression among the parent-reports. It should be noted that the study compared two different types of counseling, Equine Assisted Counseling (EAC) and Rainbow Days Incorporated (RD); the EAC activities appeared to be much more involved as the EAC counselors had more experience than the RD counselors who only attended a two day training session. This study's evidence is rated as a level IIb due to it lacking randomization. When locating studies that involve AAT, specifically hippotherapy, it is difficult to pinpoint studies that provide high level evidence, which is another reminder of why it is crucial to complete more research in this area that is becoming more popular within the health fields.

The number of studies found involving less frequently used animals such as cats and dolphin in AAT are limited; most studies involving these species were not empirically based. As previously mentioned Nimer and Lundahl (2007) completed a meta-analysis of animal assisted therapy and located only 3 studies using dolphins and none using cats. The authors of the study did not offer any thoughts about why these specific species are used less within AAT. One might assume that this is due to the fact that dolphins are extremely expensive animals, difficult to access, and are not easy to care

ANIMAL-ASSISTED THERAPY

for; they are often not regarded as “pets” and are more of a novelty. Behling et al. (2010) looked at the use of AAT within Illinois long term care facilities over a twenty year period and reported that they had found cats to be the fourth most popular animals after fish, birds, and dogs in 1990; however, that changed in the 2010 study completed. In 2010, the cats were reportedly the third most popular animal to be used in AAT following birds and fish. According to the American Veterinary Medical Association (as cited in Behling et al.) this is due to an increase of popularity with cats among the general population.

Certification of the animals is a hurdle that must be cleared when using them in AAT and may explain the narrow range of species used. Certification can provide patients and their families a sense of security knowing that some criteria for suitability have been met. Examples include two hospitals that employ AAT programs, Arkansas Children’s Hospital and St. Cloud Hospital. To work in these hospitals the animals must pass certification in AAT and be registered through Pet Partners, formally known as the Delta Society. Certification requirements include (a) the animals be at least 1 year of age, (b) have a calm temperament, (c) have positive social manners, and (d) have a disposition that is friendly towards all ages of patients. When being registered through Pet Partners, the handler of the animal must also go through screening and training which entails the handler being able to read their animal’s stress signals and anticipating their responses to certain situations as well as advocating for the animals safety and re-directing their animal’s behavior. Certification of animals also requires that the animal pass a skills and aptitude test which evaluates the animals response to various commands as well as how they handle situations such as “angry yelling” and getting bumped from

behind. One can also bring their animal to free training classes offered through the Red Cross (Red Cross, 2013) to obtain certification. Due to the number of settings that use AAT such as hospitals, out-patient clinics, nursing homes, private practices, and schools, as well as the various requirements that the animals and their handlers must meet, it is important to contact the specific setting where one is wishing to work and to obtain a comprehensive list of what is needed to provide AAT at that specific setting.

Populations (Age Groups) Served with AAT

Geriatric populations.

One main age group with whom AAT is used in conjunction with other therapies is the geriatric population. Behling, Haefner, and Stowe (2011) researched the change in use of animal programs in long-term care facilities in Illinois between 1990 (Behling, 1990) and 2010. The authors obtained a current list for long-term care facilities within Illinois and then sent out a questionnaire for the facility to answer. The title and the positions of the persons who filled out the questionnaires were not mentioned; it is possible that the facilities used different persons in different positions of employment to fill out the questionnaire. With the lack of consistency of persons who filled out the survey it is possible that some of the results reported could be skewed. Their results demonstrated that the prevalence of AAT has slightly increased over the last 20 years. The study specifically observed characteristics of long-term care facilities such as their attitudes regarding utilization of animals within the health care facilities, the number of scheduled versus non-scheduled animal visits, which organizations provide the animal visitation programs, the number of resident animal programs, and attitudes from the staff, residents, and resident's family members regarding the animals programs being used, as

ANIMAL-ASSISTED THERAPY

well as attitudes towards both the psychological and physical needs of the residents. The most significant finding was the dramatic increase in requests for animal programs and AAT among the staff at the nursing home facilities from 65.9% in 1990 to 82.8% in 2010; this increase was thought to be due to the staff observing the benefits of using AAT with the patients. Animal programs had also been requested for 78% of the residents in the 2010 study by either friends or relatives of the residents which was significant increase from the 1990 study in which facilities reported requests for only 51.2% of resident's friends and families. The requests for animal programs by the residents themselves increased only slightly; however, the requests were already prominent in the 1990 study at 72.4% compared to 76.7% in the 2010 study. This study is neither experimental nor observational and does not fit into ASHA's levels of evidence; the CEBM would deem this study as descriptive research.

Berry et al. (2012) also conducted research regarding the use of animals with the geriatric population in long-term care facilities. Although the study lacked randomization, it did employ the use of control groups meaning that it is a level IIa study. This study reported that, during physical therapy sessions completed with a dog the clients spent substantially more time with the dog and the therapist than with the therapist alone, and the number of documented spontaneous animal-client interactions increased while mediated interactions decreased. Spontaneous social interactions that were observed between the clients and the dog included looking at it, touching it, and talking to it. Positive changes in mood were also documented behaviorally. Overall, the results of this study demonstrate that the presence of a dog may help with social interaction of the geriatric patients. While the results of the study do state that the improved social

interactions were between the animal and the clients; Berry, Borgi, Francia, Alleva, & Cirulli (2013) completed a review of studies that will be discussed later and discovered that the presence of animals did have a positive effect on social interaction between both the clients and the therapists.

In another study using dogs, Morreti et al. (2011) examined the effects of AAT in elderly patients with mental illnesses in nursing homes and discovered that, following AAT, the client's symptoms of depression decreased by 50%. To conclude that the participants had improved their symptoms, Morreti and colleagues used three different measures to establish a baseline for depression symptoms and cognitive status, the Mini-Mental State Examination (MMSE), the Geriatric Depression Scale (GDS) which was made up of 15 items, as well as a brief questionnaire regarding the quality of life. The author²s specifically administered the MMSE to assess cognitive functioning. Inclusion criteria for the study required that the participants were: living within the nursing home for at least two months; diagnosed with a mental illness such as Alzheimer's disease or had some type of dementia, mood disorders, or psychotic disorders; and be older than 65 years of age. The study included a total of 21 participants (20 woman, 1 man), ten of whom were assigned to the pet therapy group and eleven to the control group; the control group was able to observe the dogs arriving for therapy but were not allowed to interact with the dogs. Four dogs participated in the study, three Golden Retrievers and one Pincher, along with four dog educators and a psychologist. The pet therapy was extended over six weeks and took place in the nursing home, both indoor and outdoor settings, and consisted of a one 90 minute session per week. The entire 90 minute session included the dogs coming into contact with the participants. Interactions included the participants

holding, stroking, walking, talking, and playing with the dogs while being watched by the dog educators. After the six week period of pet therapy, the participants were again administered the three protocols mentioned above as well as a questionnaire regarding how they felt about the intervention. Results concluded that the participants in the experimental group had a 50% improvement in depression symptoms, the mean of the MMSE scores improved, as well as the quality of life among the participants. The study lacked randomization; however, it did have a control group meaning that it consists of level IIa evidence.

School-Aged Population.

Another population with whom AAT research has also been examined with is school-aged children. Nimer and Lundahl (2007) conducted a meta-analysis of qualitative research. Beginning with 49 different articles regarding the use and effectiveness of AAT among different types of therapies, they were able to find twelve studies included in the analysis that dealt with children ages birth to 12, as well as four more studies that dealt with adolescents, ages 13-17. While one study also included research on the adult population, reported as 18-64 years of age, and the geriatric population, reported as 65 years and above, we are only focusing on the results for school-age children here. For studies to be included in the meta-analysis, the authors created the following set of criteria: (a) the studies must have been written in English, (b) the studies must have reported only on AAT, (c) the treatment groups of the studies had to include five or more participants, and (d) the studies had to provide enough data for the researchers to compute an effect size. While this study is a meta-analysis, which would be evidence level I, it did not include studies that had control groups, lessening the

strength of the evidence. Nimer and Lundahl did find a moderate effect size for AAT outcomes. Overall, the meta-analysis indicated AAT improved children's medical issues, emotional well-being, and behavior outcomes, and reduced Autism spectrum symptoms.

Trotter, Chandler, Goodwin-Bond, and Casey (2008) examined how effective group Equine Assisted Counseling (EAC) was compared to another award-winning school-based counseling program, Rainbow Days Incorporated (RD) with at-risk school-aged children. The participants for this study included a non-random convenience sample of children from the third through eighth grades who were identified by their schools as high risk for academic and/or social failure. This study did not use a control group, but compared the group of children who self-selected EAC (126 students) and met in groups of 6-8 students for 2 hours/week for 12 consecutive weeks to a group of children who selected RD (38 students) who met in groups of 6-8 students for 1 hour/week for 12 weeks. As such, this study ranks as a Level IIb research in terms of levels of evidence. Two subscales of the Behavioral Assessment for Children (BASC), Self-Rating Scale (SRS) and Parent-Rating Scale (PRS), were used pre and post-treatment to measure the participants' baseline and progress. It should be noted that the pre-test post-test study designs do not account for the threats to external validity such as the children becoming generalized to the test given before and after the treatment which may account for higher scores on the post-test. The children participating in EAC attended sessions in a ranch setting while the children participating RD attended one hour weekly sessions within the school setting. In EAC, traditional talk therapy, group processing, equine-based therapy activities, and complementary adventure-based therapy activities were completed. RD included activities such as, competence enhancement,

cognitive-behavioral techniques for self-control and peer pressure, and negative consequences.

At the end of the 12 week program, EAC students significantly increased in positive behaviors as reported on both subscales of the BASC. Areas of the significant improvements from the SRS subscale included Emotional Symptom Index, Sense of Inadequacy Scale, and Relationship with Parents Scale. The session data was collected using the Psychosocial Session Form (PSF). For the PRS subscale, significant improvement areas included the Behavioral Symptoms Index, Externalizing Problems Composite, Internalizing Problems Composite, Hyperactivity Scale, and the Anxiety Scale among others.

In comparison, the RD group also had statistically significant within-group improvements. These included areas on the BASC-SRS such as the Emotional Symptom Index, Personal Adjustment Composite, and the Social Stress scale. When comparing the results RD to EAC, the authors found that the EAC group performed significantly better than the RD group increasing positive behaviors measured by the Social Stress and Self-Esteem scales and decreasing negative behaviors measured such as hyperactivity, aggression, and conduct problems. The results of this study indicate that the use of animals, particularly horses, may be beneficial to the school-age population. While the study reported many benefits there are some limitations; the counselors of the EAC group had more experience in EAC interventions than did the RD counselors for their interventions; the latter only attended two day training program. The EAC intervention also had more components than the RD intervention did.

Bassette and Taber-Doughty (2013) focused their single case design on the effects that a dog might have on school-age children in a reading program who have emotional and behavior disabilities (EBD). Three children were identified as participants of the study because they fit the criteria of having a primary diagnosis of EBD, had negative behaviors during reading activities, were interested in working with the dogs, and were neither fearful nor allergic to the dogs. Student 1 was a female in the in the 2nd grade who had a secondary diagnosis of a language impairment and speech impairment; she read at her grade level but the teacher reported she read too fast and couldn't decode properly. Student 2 was a male in the 5th grade that was diagnosed with a learning disability; he read at a 2nd grade level and had difficulty with anxiety and showed poor adaptive skills. Student 3 was a 5th grade male who had difficulty in both social and academic contexts and read at a first grade level. Baseline data were collected for two weeks, intervention was for a total of four weeks, and maintenance data was collected one month after intervention. There was no mention of generalization and control behaviors measured. Intervention consisted of the participants reading to the dog for a half hour block within their special-education classroom.

The participants' daily progress monitoring reading comprehension was assessed using the Accelerated Reader (AR) program. The dependent variable was the percent of on-task reading aloud intervals. "Intervals" were defined as the amount of time it took the child to read the book divided by 15. Data were collected by the researcher using direct observation of the participants reading to dogs. Data collection included watching the participant use on-task reading behaviors which consisted of looking at the book and reading loud enough for the observer to hear, and verbalization of target words from the

book. If the participant did not look at the book for more than three seconds or if they demonstrated off-task behaviors such as talking to the teacher or putting the book down, they were counted as off-task. “Momentary time sampling” was used to mark whether a child was on or off-task during these intervals. This yielded a percentage calculation of the number of intervals on-task vs. off.

Three large dogs, one Greyhound and two Golden Retrievers, participated in the study; the Retrievers attended therapy two times a week and the Greyhound attended once a week. The students were allowed to pick the AR book of their choice to read to the dog. All students were observed to have high percentages of off-task intervals during the baseline (prior to dog intervention), but during intervention, the percentage of intervals spent on-task increased. Specifically, during baseline reading, Student 1 increased from an on-task percentage of 5% per baseline interval to an on-task percentage of 96% during intervention. Student 2’s last baseline session consisted of him being on-task for 57% of the intervals; during the first intervention session he was on task 94.5% of the intervals. Student 3 also demonstrated a drastic increase of 27.3% to 100% for on-task behavior intervals from last baseline session to the first intervention session. All students demonstrated high percentages of on-task intervals during the maintenance sessions, which were all between 90-100%. The results of the study are promising, as the students demonstrated on-task behavior during reading intervention in the presence of dogs, which was a struggle for them before when they read independently. The children began to form a bond with the dogs and, for example, one asked if he could read another story to a dog which could imply that he had become motivated to read. This information could be beneficial to SLPs who work in the school settings as they work with children

who have difficulty attending to reading and other language activities. It could also be beneficial to persons in the counseling profession, as this study demonstrates that it is possible that dogs are a “nonjudgmental” listener and could diminish some behaviors. This study was a fairly well-designed study; however it lacked controls and randomization which leaves the level of evidence at a level IV.

Levinson (1971) completed an exploratory study by surveying training schools that served delinquent children. There was no definition offered to what a training school was. He found that the delinquent children often came from bad situations and were placed in the training school as a last resort. The children may have felt a sense of loss and develop symptoms of depression. Levinson reported that in a situation where a child is being placed in a training school, it is important that they have someone or something that they can talk to and share their feelings with, such as an animal. Levinson suggested that animals can often meet the need of friendship that some children need when living within a training school. A total of 150 questionnaires were mailed out to training schools and 112 questionnaires were returned back. Regarding farm programs, 34% of the schools indicated that they do use farm animals for their children to interact with. Most of the schools (41%) indicated that they have the students keep pets of their own, such as dogs, cats, fish, and birds; this usually requires the student taking care of the pet on their own, without the staff's help. Some of the schools reported that they have school or staff pets that they do let the children interact with. When asked if the animals were helpful to the children, many did give positive responses; however, it was discovered that some schools (39%) were not able to permit pets on the grounds due to either federal regulations and/or practical considerations. It was also discovered through the survey

that some schools reported animal abuse from the students such as cruelty and neglect which made them stop their animal programs. While the study did find that many schools cared for many children, most of the animal usage was incidental rather than planned meaning it would fall under the category of AAA. Animals also require extra resources such as work, staff, and expenses; however, with some children they can teach the child good decision making skills and responsibility. This study was exploratory and used a survey method making it descriptive research as deemed by the CEBM.

Clients with Various Diagnoses Being Treated with AAT

Autism spectrum disorders.

Much current research has looked at the use of AAT with children who are diagnosed with autism spectrum disorders (Berry, Borgi, Francia, Alleva, & Cirulli, 2013). Berry and colleagues (2013) conducted a review of studies completed on the effects of children with autism spectrum disorder (ASD) and the use of a therapy dog within the treatment. The criteria the researchers constructed limited the number of studies reviewed to a total of six. The criteria included semi-structured interviews, experimental studies, and case studies, all being published in English peer-reviewed journals. All of the participants were between 3-15 years of age, and according to the Diagnostic and Statistical Manual of Mental Disorders fourth edition (DSM-IV), were diagnosed with one of the diagnoses under the category of pervasive developmental disorder (PDD). They discovered that the studies completed regarding ASD and AAT generally demonstrated improvements in verbal and nonverbal behaviors as well as moods for children with ASD, although a specific effect size was not computed. The participants' verbal and nonverbal behaviors were directed to both the dogs and therapists

in contrast to what was reported by the previously discussed study by Berry et al. (2012) in which geriatric participants improved their spontaneous interaction just with the dogs and not humans. A SLP's work load often includes children with ASD; improving their behaviors and mood with AAT could lead to more focused speech and language therapy. This study's level of evidence is IV as it is a review of other studies which included a case study (level III), a semi-instructed interview article, two repeated crossover studies, and one repeated longitudinal study.

Another study by O'Haire, McKenzie, Beck, and Slaughter (2013) examined the social behaviors of children with ASD during free play with guinea pigs versus free play with toys. The children (n= 114) interacted with the guinea pigs within a classroom setting with a facilitator explaining appropriate ways to handle the animals, they were also provided with small brushes and shampoo to groom the guinea pigs if they desired. Materials that were related to the animals, such as combs, vegetables, and recycled items to make houses, were also made available to the children during the facilitated times with the guinea pigs. The results of the study are encouraging, as it concluded that the children with ASD improved their social communication by talking more and using eye contact with people when in the presence of the guinea pigs. The study also reported that the children with ASD smiled and laughed more during the sessions with the guinea pigs compared to the toys and were reported to demonstrate affection such as comforting and hugging the animals. The displays of emotion were measured by a coding system that was used by two trained, blind observers. This study is ranked as having level IV evidence due to the fact that it did not include a control group; although it was a well-designed study that randomly selected typically developing kids to participate.

There are several studies that investigated the effects that other types of animals have with children with ASD (Bass, Duchowny, & Llabre, 2009; Berry et al., 2013; Solomon, 2010). Bass et al. (2009) examined how horseback riding could affect the social abilities of children with autism and discovered that the riding may be an effective type of therapy for children with autism as the participants had improved focused attention, social motivation, and sensory sensitivity. The study did not clarify if the social interactions were with the horses or the instructors. The participants' sensory integration was also reported to improve as measured by a sensory questionnaire post treatment. The 19 participants were also documented to have decreased behaviors in inattention and distractibility which was measured post treatment by a social responsiveness scale. The authors did note that some of treatment effects on fine motor/perceptual skills, social cognition skills, and social awareness skills did not improve significantly which is important to the speech-language pathology field as SLP's treat social cognition and social awareness. There are limitations to this study, as the authors reported that they could not control all the extraneous effects such as: medication the participants may have taken, extra therapy session that either the participant or the parents took part in while engaging in this specific study, and exactly what was improving the children's behavior, such as the mere presence of the horse or the sensory feedback the child had from riding on the horse. This study contained a control group of 15 children who were on the waiting-list to begin hippotherapy. Both the experimental condition and the control group were comprised of children who were diagnosed as having ASD although the severity of the diagnosis was not controlled. This study's results are of a higher level of evidence, level IIa, as the study used a control group;

however, the participants were recruited through a disabilities agency and were required to meet specific criteria before participating in the study which does not specifically make it a random sample, but rather a convenience sample.

As previously mentioned, Bassette and Taber-Doughty (2013) examined the use of dogs in reading therapy for school-age children with emotional and behavioral disabilities. The study did notice a large increase for on-task behavior in the children when reading to a dog and noted that the student's off-task behaviors diminished. Another author, Friesen (2010), wrote about her clinical experience using AAT among school-age children who had a variety of diagnoses and required special-education. Friesen discussed concerns of parents regarding AAT for their children such as allergies, cleanliness, and safety for both the children and the animals. The author discussed that the help of an allergist as well as cleaning the pet and choosing one that doesn't shed will help with the cleanliness and allergy issues. To ensure safety for both the children and the animals, appropriate training for the dog is suggested as well as supplying the dogs with a comforting environment and observing them for any changes in behavior as a signs of stress during treatment times. Friesen concluded that animals may be viewed as "non-judgmental" which can facilitate a positive learning environment and can improve a child's social interaction with peers and adults within a special needs classroom. While the conclusion of this article is helpful and put AAT in a positive light, this study was the author's clinical expertise which leaves it evidence as level IV.

Friesen (2010) mentioned her review, the idea that a dog may encourage social interaction in three different ways such as: a dog may offer social support for some children who do suffer with severe emotional disorders as the dog is acting as a friend to

the child, the dog's enthusiastic nature and love of social interaction may serve as a model for the child, or while the child is interacting with dog or in the classroom after interacting with the dog, the presence of the dog may increase initiate interactions directed to the child's teacher. To validate this claim, Friesen mentioned four articles within her review which were then added to the current study's review of literature. Anderson and Olsen (2006) found that the presence of a dog could be a welcomed distraction for children who had difficulty regulating their emotions and became aggressive, which demonstrates that dogs may offer social support for those children in the classroom. Pronthmann, Bienert, & Ettrich (2006) found that the presence of the dog within a classroom could increase alertness and attention among children which lead to a desire for social interaction. Limond et al. (1997) also found that children became more attentive when in the presence of a dog which encouraged more initiative behaviors. Esteves and Stokes (2008) also lent information to Friesen's review, finding that the presence of dogs increased positive initiated interactions between the children and the teacher as well as the dog and can decrease the amount of negative interactions.

Mental health disorders.

Counseling is a profession in which many employ the use of AAT. O'Callaghan and Chandler (2011) surveyed mental health professionals that use AAT regarding what kind of therapy techniques they use, much like the current study did. O'Callaghan and Chandler's study is important to the current research because some of the techniques could be applicable to SLPs using AAT; also it could demonstrate that AAT is becoming more prevalent in the health care fields. This study could give ideas to different health professionals of how to employ the use of AAT within their practice. The survey was

ANIMAL-ASSISTED THERAPY

constructed after a review of current literature describing anecdotal or experimental studies in the mental health field. From the review, a total of 18 AAT techniques were identified to be used within the survey. A total of 93 surveys were distributed in both email and mail versions. All participants practiced AAT and were licensed mental health professionals in the United States. The participants were required to fill out demographic information as well as different techniques that they were likely to use. Of the total of 18 types of techniques, the most common used included: "Counselor reflects/comments on the client's relationship with therapy animal," and, "Counselor encourages client to interact with therapy animal by touching or petting therapy animals." Another frequent response was, "Counselor creates specific/structure activities with therapy animal," in which the participant was able to describe specific activities. One technique that hardly anyone used was, "Counselor encourages client to tell therapy dog client's distress or concerns." It appeared that the mental health field is using a human-animal bond to help in their therapies by encouraging interaction with animals. One technique that was mentioned to be used often was, "Counselor has therapy animal present without any directive intervention." This would count as AAA and not AAT; however, it is a type of technique that is used within the mental health field. Previous mentioned studies have stated that animals may provide a calming environment and it appears that the professionals have used that idea to provide environments in which they think are positive to the client. The current study is only focusing on the use of AAT; however, if the dogs do provide a calming environment and can alleviate stress, it would not only be beneficial to use them in mental health, but speech-language, as well as occupational and physical therapies for the same reasons. O'Callaghan and Chandler's study provides

evidence that AAT is being used with clients that require counseling and there may be some benefits to it. The study is only exploratory; there were no controls or randomization so it offers level IV evidence.

Other studies have examined AAT therapy used with the elderly who have a range of diagnoses including mental illnesses and chronic conditions, some of whom resided within nursing homes (Behling et al., 2011; Berry et al., 2012; Morreti et al. 2011; Reed, Ferrer, & Villegas, 2012). In the previously mentioned study, Berry and colleagues (2012) focused the use of dogs with an elderly population requiring physical therapy proved to be beneficial to the clients as it promoted positive moods and improved the client's spontaneous social interaction with the dog. Behling and colleagues (2011), found an increase over the years in staff requests for AAT during psychological and physical therapy. The increase in requests suggests that the staff was recognizing a benefit from AAT. As previously mentioned Morreti et al. (2011) determined that AAT could improve the symptoms of depression of residents in a long-term care facility as well as improving cognitive function. While this study did contain a control group, it lacked randomization and is placed as having level IIa evidence. It is possible that AAT could benefit mental health of the elderly population that resides in nursing homes; however, higher level research should be completed.

Communication and social skills.

Chitic, Rusu, and Szamoskozi (2012) completed a meta-analysis on the use of AAT to improve communication and social skills. The studies included the use of AAT in treatment of depression, autism, and quality of life. The selection criteria used in the study included: (a) articles specifically covering AAT, (b) articles written in English, (c)

studies that used control groups, and (d) data demonstrating an improvement of the social and communication skills with AAT treatment that allowed the authors to calculate an effect size. The authors identified a total of four studies that met their inclusion criteria for the meta-analysis. This article could be defined as level I evidence because: (a) a meta-analysis and (b) all the studies included contained control groups; however, the analysis did not mention if any of the four studies included randomization which makes the evidence level IIa. The findings of the meta-analysis indicate that there was a large global effect size of 0.79 for improvement of communication and social skills among interventions incorporating AAT. According to the authors, a medium value of effect size was between the range of 0.5 to 0.8, and a large value effect size was above 0.8. The study also found several variables that may affect the outcomes such as: what animals are used, number and duration of sessions, animals with AAT certification, how AAT was administered, and the type of measurement used. The authors did not discuss the four studies that they reviewed in detail and did not mention the quality of evidence that they presented. The authors suggested that further research should be done and more stringent control of variables should be implemented.

Attitudes Toward AAT

The main purpose of the current research is to document the attitudes of SLPs regarding AAT. There has been some research looking at the attitudes about AAT with other health related professionals such as physical therapists and staff at nursing homes (Behling, et al., 2011; Berget, Ekeberk, & Braadstad, 2008; Black, Chur-Hansen, & Winefield, 2011; Velde et al., 2005). Behling and colleagues (2011) documented the attitudes and feelings of not only the residents of their nursing home facility but the

ANIMAL-ASSISTED THERAPY

attitudes of the employees in the facility as well regarding the use of AAT. As mentioned previously, this study demonstrated how the use of animals increased at a state's nursing home facilities over a recent twenty year period. The most significant data revealed in this study is the drastic rise of requests for animal programs and animal-assisted therapies among staff of the nursing facilities, as well as minimal requests from residents and human societies, and a moderate increase of requests from friends or relatives. This suggests a shift toward a more positive attitude about using animals in these facilities. Berget et al. (2008) documented the attitudes of health care professionals and farmers on "green care" which is a type of therapy that is used in Europe that refers to therapy that utilizes not only farm animals, but gardening, and landscaping of the outdoors. The study concluded that the professionals all agreed that the use of animals in therapy could be beneficial to clients with psychiatric disorders. There were some differences in the opinions of the sexes with the separate questions; more women believed that the use of animals in therapy could positively affect the clients. There was also a difference between the beliefs of the therapists versus the farmers; all of the farmer participants reported that they believed that animals could significantly positively affect clients. The study reported that most therapists and farmers believed that AAT can be beneficial to more than just patients with psychiatric disorders. The level of evidence of this study was low as there was no control group; however, it did use random sampling to find both health professionals and farmers that were planning on participating in a random controlled study regarding the effects of AAT using farm animals with mental health patients. Due to the study using randomization but not control groups, the evidence is level III as it is an observational study that did use a control group.

Black, Chur-Hansen, and Winefield (2011), did a thematic analysis, which is an analysis of qualitative data, of seven psychologist's attitudes towards AAT and two psychology graduates attending pre-registration training and supervision. The attitudes of the participants were summarized and arranged by themes. It was concluded that psychologists were of the opinion that AAT could provide companionship to their clients as well as improve outcomes of clients' therapeutic goals. While these findings are encouraging for the use of AAT, it was recommended that a larger sample size be used in the next study. Due to this study not containing a control group or using randomization, it is surmised that it yields level IV evidence. It should also be noted that out of the seven participants, three of the participants owned dogs and worked with them, and two of the participants owned horses and worked with them as well, so the data that were collected could be biased.

Velde, Cipriani, and Fisher (2005) completed a literature review of the attitudes of occupational therapists on AAT as well as the clients' attitudes toward AAT. The responses in some of the studies indicated that occupational therapists viewed AAT as either a single session program, short-term program, or a preparatory program. A preparatory program is a program that uses animals to ready the client for a skill for a short time in the beginning of therapy before having the client generalize the skill to an environment without the animal. Because Velde et al.'s study is a review only, and because it included case studies with no randomization or control groups, it does not fit on the scale for levels of evidence.

There are a limited number of studies that research AAT within the speech-language pathology community, as well as limited research on the attitudes among all

health professionals regarding AAT. An integral part of research within the AAT field is to determine if health professionals, including SLPs, have positive attitudes towards AAT and if they would use it within their own practice. It can be assumed that the amount of research examining AAT within other fields such as education, physical therapy, and occupational therapy is due to an interest and positive attitude towards it from the professionals working in the field. It is imperative to gain an understanding of attitudes among SLPs regarding the use of AAT in their field in order to have an understanding of the direction research should go towards.

Because few or no studies have been conducted on the use of AAT in speech-language therapy, a survey study was conducted to provide initial data regarding prevalence of AAT, as well as attitudes and experiences of SLPs. Specifically, the research questions being posed by this study included the following:

- a) What is the prevalence of AAT within the speech/language pathology field?
- b) What are some of the attitudes towards AAT from practicing SLPs?
- c) What are some experiences of SLPs regarding AAT?

These questions will be answered by using grouped data, but also by examining responses by demographic categories of age, years in practice, and whether or not the respondent already uses AAT.

Chapter 3: Methodology

Approval for this study was obtained from the Idaho State University Human Subjects Review Committee in November of 2013, prior to the start of data collection.

Participants

A questionnaire was sent to a randomly selected sample of 5,000 ASHA members in the United States via email. Randomization was completed by ASHA when the list was obtained. Over ten thousand email addresses were obtained from the American Speech-Language-Hearing Association (ASHA) membership directory. Randomization was then completed by Qualtrics™ when the email addresses were entered into the software and it was programmed to take a random sample of 5,000 emails. Inclusionary criteria for the study consisted of certified SLPs who are fluent in English and who are currently employed within the field of speech-language pathology. Exclusionary criteria included all other careers, as this survey study is specifically looking at just the attitudes of SLPs. Of the 5,000 questionnaires sent out, 569 were started; however, only 516 were completed. Of the 516 participants who completed the questionnaire, 12 indicated that they were not SLPs and were exited from the survey. Fourteen other participants indicated that they had no experience working with AAT and they were not interested in continuing the questionnaire regarding AAT and were also exited, which left a total of 490 participants to fully complete the questionnaire.

One source of bias in this study might be sampling error. Sampling error is defined as, “the result of surveying only one, and not all, elements of the survey population,” (Dillman, 2000, p. 11). The survey was specifically sent out to a random sample of 5,000 ASHA members. Based on ASHA’s Counts for Year End 2013, a

number of 5,000 ASHA members represent around 3% of the total population of ASHA members not including student members and associates. SLPs make up around 88.16% of the all ASHA certified members, so we can assume that there are 4,408 SLPs within the sample of 5,000 ASHA members. A total of 490 participants completed the entire questionnaire which made up 11.11% of the estimated SLPs within the sample. Assuming a confidence interval of 95% for roughly 500 respondents and around 10% of the population, we can be fairly confident (92-98% sure) that the participants within our sample are fairly representative of ASHA's overall members meaning that there may not be any sampling error.

A second source of bias in this study is known as coverage error. Coverage error is defined as, "the result of not allowing all members of the survey population to have an equal or known nonzero chance of being sampled for participation in the survey," (Dillman, 2000, p.11). Coverage error was low for the survey because the sample was selected randomly; each member of the population had an equal chance of being selected.

Instrumentation: Software and Questionnaire

The survey was conducted over the internet through Qualtrics™ software (<http://www.qualtrics.com>). The questionnaire had a cover letter (Appendix A) explaining the purpose of the survey and asked for the participant's assistance, as suggested by Dillman (2000). The wording of the questions as well as some of the different types of questions within the questionnaire were constructed with the help of a book regarding internet surveys by Dillman (2000).

To address the three research questions, specific questions (see Appendix A) were presented regarding respondent's experience with and attitudes towards AAT used within

ANIMAL-ASSISTED THERAPY

the speech-language pathology community. Question types included forced-choice, “select all that apply,” discrete numerical, continuous numerical, and open-ended formats. Participants were first asked if they were a certified SLP to easily separate other professionals from completing the questionnaire. Participants were then asked if they had worked with AAA or AAT, if participants indicated that they had no experience working with AAT or AAA they were given an option to answer more questions regarding AAT or to exit the survey. Participants who indicated that they had experience working with AAA/AAT were lead to questions regarding their experiences such as if they currently utilize it and how many clients they utilize it with. They were also asked to describe one to two ways that they have used AAA/AAT in the past. Participants were then asked which animals they believed should be used with AAT, what diagnoses of clients they may use it with, and to identify what clinical populations (age and diagnoses) they believed would benefit the most from AAT. Participants were then asked to identify some communication behaviors that may be positively impacted by using an AAT specific approach. Questions judging the participant’s attitudes towards AAT/AAA were then used in the questionnaire in the form of Likert scales, asking if participants believed AAT was an effective form of therapy for clients, and if AAT is more effective than AAA when treating patients. A question asking if participants would be interested in attending a workshop with CEUs on AAT was next. The last question regarding AAA/AAT asked participants if they had anything else they would like to share regarding the use of AAA/AAT and were not required to fill in the answer. The final four questions for participants was demographic information including gender, age, years of practice, and place of practice. After the demographic section was answered, the

survey was completed and participants were then exited from the survey and presented with a final, “Thank You” page.

Procedure

SLPs received the questionnaire through email. The cover letter constituted the text of the e-mail followed by a link to the questionnaire. The cover letter indicated to the participants that the completion of the questionnaire was voluntary and that they would not be compensated. It also specified that once the participants opened and began the questionnaire, they had given their consent to participate in the study.

The respondents filled out the questionnaire anonymously and submitted it online through Qualtrics™.

After one week, a follow-up reminder was sent to all who did not submit answers to the questionnaire. Qualtrics™ was able to do this automatically without notifying the researcher of names of those who had not filled out the questionnaire, thereby preserving anonymity.

Data were tabulated using tools provided by Qualtrics™. This included mean scores of the SLPs attitudes and experiences towards AAT. Percentages were calculated for specific responses that required the participants to select one or more answers to a question such as, “We’d like to know which age ranges you have included in AAA/AAT and which other ages you’d consider using AAA/AAT with. Four questions were open-ended; these questions were numbers five, six, ten and fourteen. Question five asked, “With how many clients, on a weekly basis, do you use AAA or AAT?” Question six asked the participants to describe 1 – 2 ways that they are using or have used AAA or AAT in their SLP practice. Question ten asked, “In your opinion, what types of

ANIMAL-ASSISTED THERAPY

communication behaviors might be positively impacted by using an AAT-specific approach?” Question fourteen asked participants, “Is there anything else you’d like to share with us about AAT or AAA?” The researcher read the first 25% of the responses, created categories for the most prevalent response topics, and then sorted each specific response into an appropriate column. Participant responses were further analyzed to identify the specific demographics of the participants and how these characteristics might be related to answers on other questions.

Chapter Four: Results

As mentioned in Methods, a random sample of 5,000 members of ASHA was selected and received emails inviting them to participate in the study. A total of 569 questionnaires were started through Qualtrics™; however, only 490 questionnaires were completed (9.8%). Fifty three of the 569 participants did not complete the survey due to either timing out of the questionnaire or exiting from the questionnaire before completion. It should be noted that if the participant answered, “no” to questions 1 and 2a, they were exited from the questionnaire; however, it was counted as being completed. The first question asked 516 participants if they were an ASHA certified, state licensed, and/or state certified SLPs; 504 participants indicated “yes” on the question and were allowed to continue, whereas only 12 participants responded “no” and were exited from the questionnaire. The second question asked participants if they have ever worked as an SLP using AAA or AAT; 140 participants indicated that they had used AAA or AAT and continued on to question three while 364 participants indicated that they had not used either AAA or AAT within speech-language pathology. The 364 participants who indicated that they had not used AAA or AAT within the field of speech-pathology were directed to question 2a asking if they would be willing to answer more questions regarding AAT and 14 participants indicated that they weren’t and were exited from the questionnaire and the 350 others were directed to question 7b. A flow chart was created in order to better understand the order of the questionnaire and presented in Figure 1.

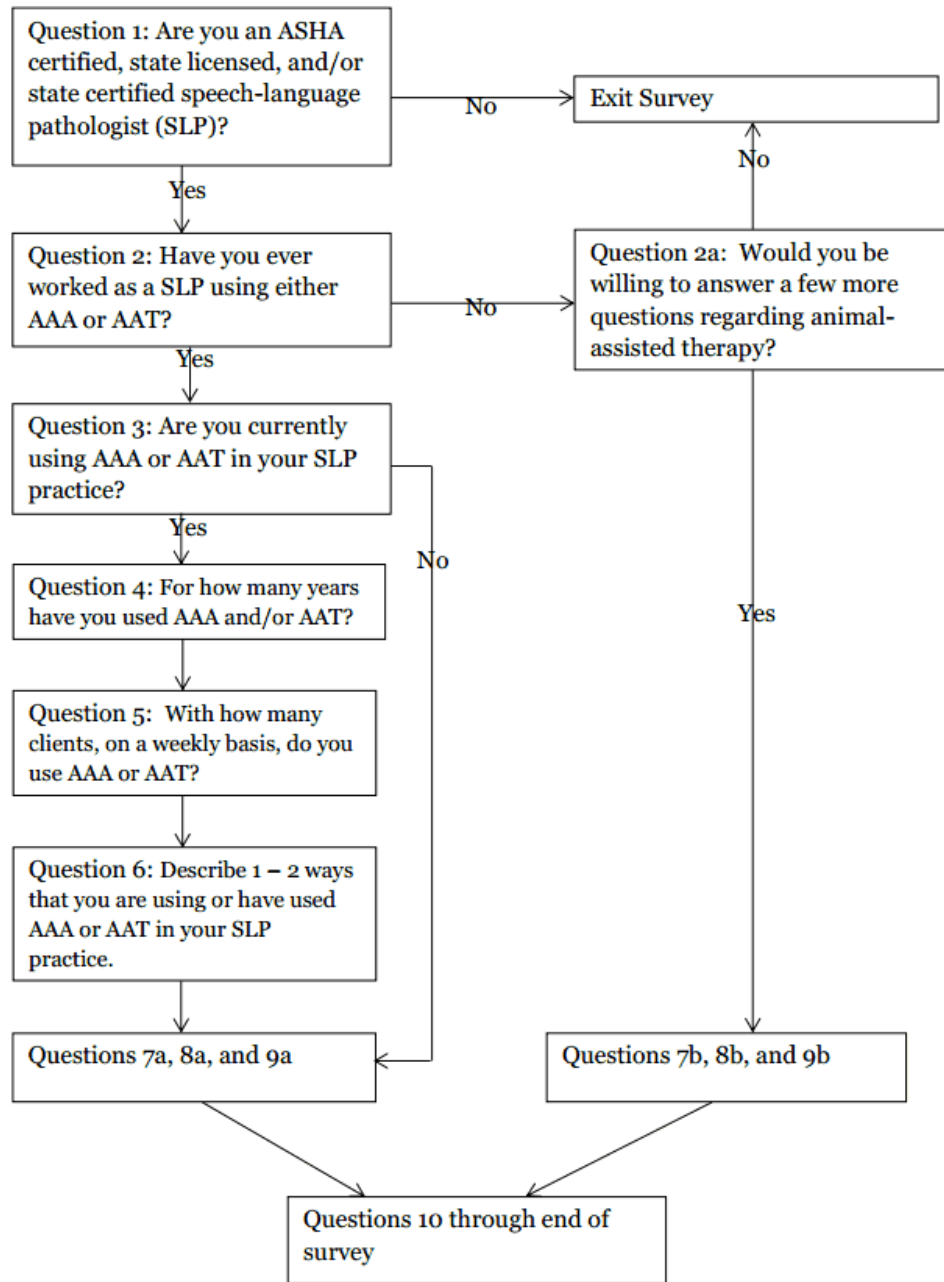


Figure 1. Flow chart of questions in survey.

To measure the effects of independent variables on the dependent variables for this study, such as if gender affected the participants' indication of what animals they would consider using with AAT, a chi-square (χ^2) test was completed for categorical and discrete (count) data. The significance level of χ^2 for all statistical tests was set to .05. All chi-square tests were computed through the questionnaire's software, Qualtrics™.

Demographics

The last questions, 15, 16, 17, and 18 were demographic. The demographics are presented in Table 1. A total of 92% of the respondents identified themselves as female; ages of respondents fell in all ranges, from 20 to 60 + years, with the mode at 50 – 59 year range. ASHA (2013) reported that 3.7% of their members who are certified SLPs are male, 96.3% were female and the span of ages of their members were fairly even between the ages of 34 and younger to 64 years. Due to this information, it can be surmised that the sample of this study is fairly representative compared to the ASHA population. The survey was taken by a cross-section of respondents with just a few years of practice (1-5 years – 4%) up to those with 36+ years of practice (10%). The mode for years of practice was bimodal, including both the 11-15 year and 16-20 year ranges, both at 19% of the sample. The last question, question 22, asked where the participants live and practice; the most common state was California, with 30 (6.1%) participants residing and practicing in it while Utah was the second most common with 29 (5.9%) participants residing and practicing there. All states were selected among the participants except for Rhode Island. In 2013, ASHA reported to have 7.5% of its members in California and 0.7% of its members in Utah. While the sample is fairly representative of the ASHA member population in California, there were a lot of members within Utah which was not

a true representation of the ASHA members. The state of Rhode Island holds very little of the population of ASHA members, which could explain as to why there were no participants from this state. To more easily present results to question 22 in Table 2 and Figure 2, the United States was divided up into the five regions identified by the United States Census (2004: West, Midwest, South, Northeast, and Pacific). A copy of the map is provided in Appendix D. The main region in which participants lived and practiced was the South (n= 151 participants). Overall, it can be said that respondents represented a cross-section of ages and professional experience, and the sample was fairly representative of the ASHA's Highlights and Trends of 2013.

Table 1

Participant Demographics

| | Number | Percent |
|-------------------------|--------|---------|
| Gender | | |
| Female | 453 | 92% |
| Male | 37 | 8% |
| Total | 490 | |
| Age | | |
| 20-29 years of age | 16 | 3% |
| 30-39 years of age | 113 | 23% |
| 40-49 years of age | 118 | 24% |
| 50-59 years of age | 154 | 31% |
| 60 years or above | 89 | 18% |
| Total | 490 | |
| Years Practicing | | |
| 1 – 5 years | 22 | 4% |
| 6 – 10 years | 61 | 12% |
| 11 – 15 years | 93 | 19% |
| 16 – 20 years | 91 | 19% |
| 21 – 25 years | 49 | 10% |
| 26 – 30 years | 56 | 11% |
| 31 – 35 years | 67 | 14% |
| 36 years or more | 51 | 10% |
| Total | 490 | |

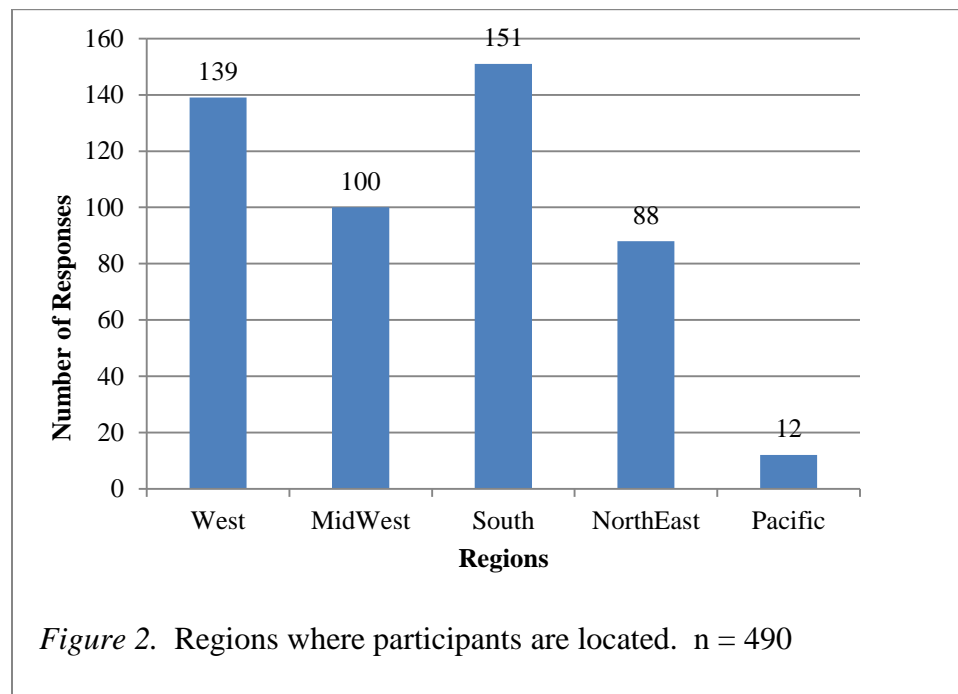
Note. n=490 respondents. Mode highlighted in grey.

Table 2:

Regions Where Participants Are Located

| Region | Number of Responses | Percentage |
|-----------|---------------------|------------|
| West | 139 | 28% |
| Midwest | 100 | 20% |
| South | 151 | 31% |
| Northeast | 88 | 18% |
| Pacific | 12 | 3% |

Note. n= 490. Mode highlighted in grey.



Prevalence and Experiences of AAT Among Professionals

Table 3 represents the responses for questions two through four which addressed experience working with AAT. Figures 3 and 4 represent the responses in graph form. A total of 140 participants indicated that they had worked using AAA/AAT which made up 28% of the participants who responded to the survey. Of the 140 participants who indicated they have worked with AAA/AAT, 39 indicated they were currently using AAA/AAT within their practice. Most of the participants ($n = 24$) out of the group of 39 who answered that they currently work with AAA/AAT, reported to have worked with AAA/AAT for 1-5 years.

To determine if participants' gender, years of practice, and ages had a significant relationship to whether or not participants had experience with AAA/AAT, chi-squared

ANIMAL-ASSISTED THERAPY

(χ^2) tests were completed. There was no significant relationship between participants' gender and having had experience with AAA/AAT, $\chi^2 (3, N=490) = 0.95, p = 3.00$.

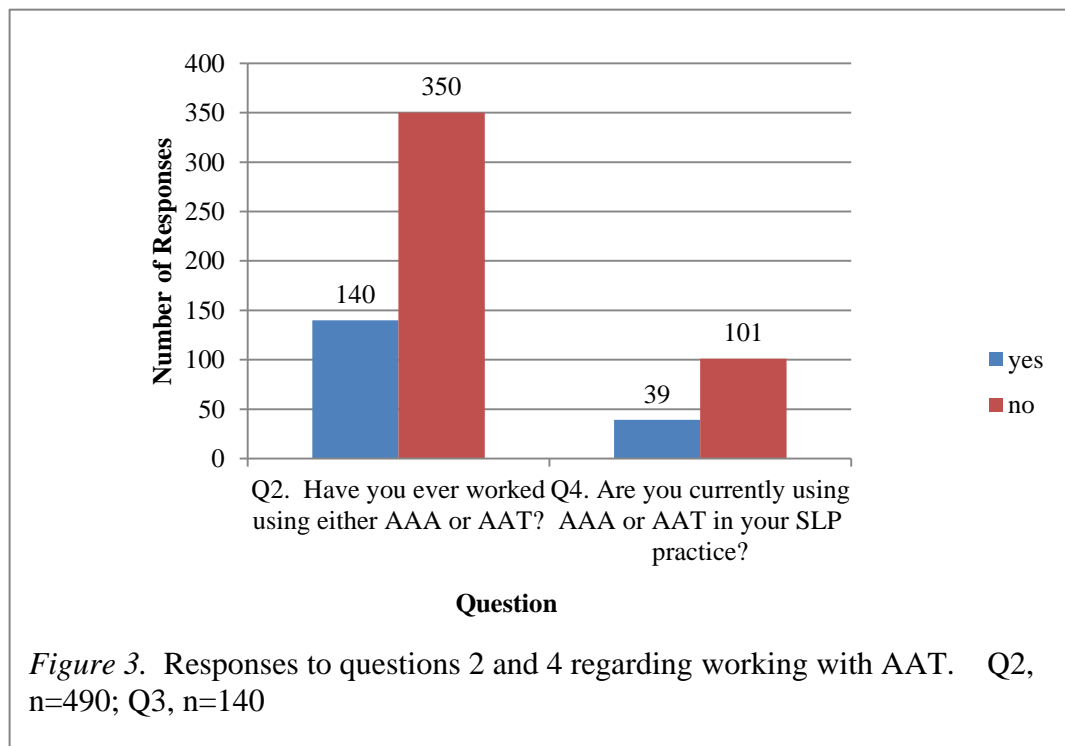
There was also no statistical significant relationship between the participants' age and having had experience with AAA/AAT, $\chi^2 (12, N=490) = 5.92, p = 0.92$. The relationship between the dependent variable, participants having had experience with AAA/AAT, and the independent variable, participants' years of practice, was not significant, $\chi^2 (21, N=490) = 2.87, p = 1$. Finally, there was no significant relationship between the number of years of practice the participants' had and the number of years that the participants' had used AAA or AAT, $\chi^2 (63, N=39) = 21.91, p = 1.00$. Chi-square tests using percentages were also run to determine if there was a significant relationship between the participants' location and participants having experience working with AAA/AAT; there were no statistically significant relationships.

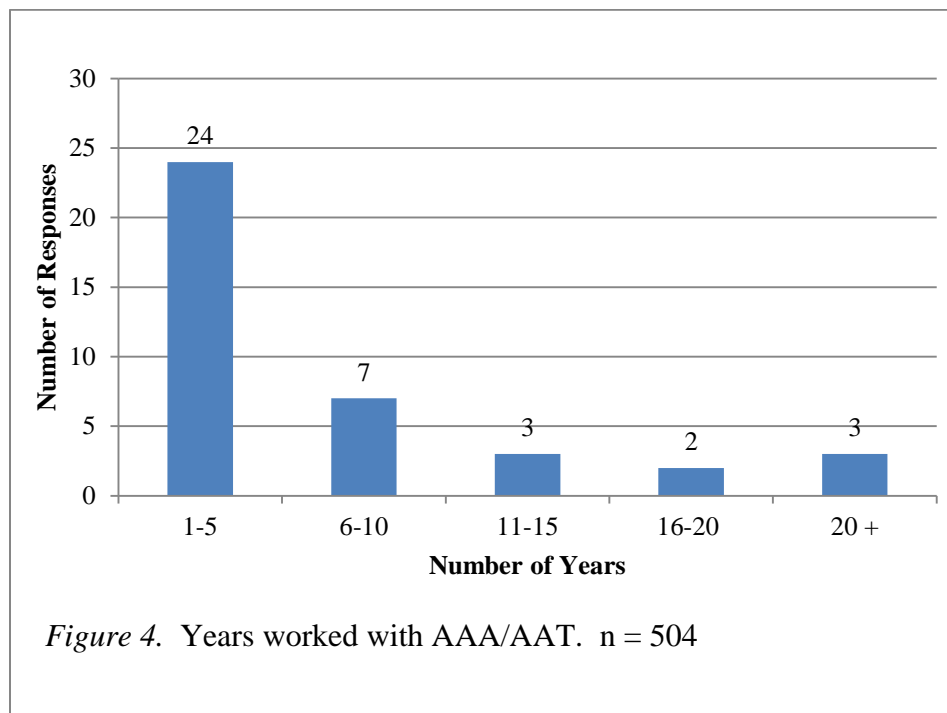
Table 3:

Responses to Question Regarding Working With AAT

| | Response | Number | % |
|---|------------------|--------|-----|
| 2. Have you ever worked as a SLP using either AAA or AAT? | Yes | 140 | 29% |
| | No | 350 | 71% |
| | Total | 490 | |
| 3. Are you currently using AAA or AAT in your SLP Practice? (Answered only by those who answered "yes" to question 2) | Yes | 39 | 28% |
| | No | 101 | 72% |
| | Total | 140 | |
| 4. For how many years have you used AAA or AAT? (Answered only by those who responded "yes" to question 2) | 1-5 years | 24 | 62% |
| | 6-10 years | 7 | 18% |
| | 11-15 years | 3 | 8% |
| | 16-20 years | 2 | 5% |
| | 20 years or more | 3 | 8% |
| | Total | 39 | |

Note. n=504 respondents. Mode highlighted in grey.





The 39 participants who indicated that they currently use either AAA or AAT were asked how many clients, on a weekly basis, were experiencing AAA or AAT. Table 4 and Figure 5 represent the recorded responses. The participants were asked to input their answers in a text box; each responses was read by the researcher and categorized into seven separate categories of ranges: 1-5 clients, 6-10, 11-15, 16-20, 21-25, 26 -30, and 30 or more. The responses are listed verbatim in Appendix E. Some participants indicated a range of clients that they see per week (ex: “20-30 contacts”); in these instances the average for the stated range limit was used to determine which category they were placed in. Twenty-three of the participants indicated that they use AAT with 1 – 5 clients on a weekly basis which was the mode. The mean and standard deviation of these responses were calculated using the average number of the responses

ANIMAL-ASSISTED THERAPY

that included ranges resulting in $\bar{x} = 8.00$, $SD = 9.36$, with the minimum value at .25 and the maximum value at 32.5.

Table 4

| <i>Number of Clients Seen Weekly Using AAA/AAT</i> | | | | | | | |
|--|-------|--------|---------|---------|---------|---------|------|
| Number of Clients: | 1 - 5 | 6 - 10 | 11 - 15 | 16 - 20 | 21 - 25 | 26 - 30 | 30 + |
| Responses: | 24 | 4 | 1 | 3 | 3 | 1 | 1 |
| Percentage: | 62% | 10% | 3% | 8% | 8% | 3% | 3% |

Note. n = 39. Mode highlighted in grey. $\bar{x} = 8.42$, $SD = 9.58$.

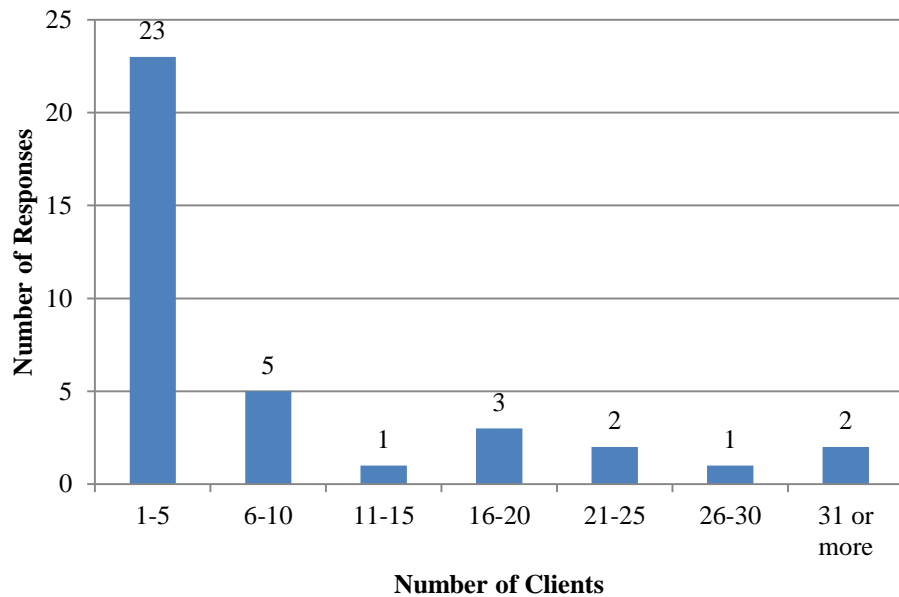


Figure 5. Number of clients per week SLP's treat using AAA/AAT. n = 39

Question 6 asked the same 140 participants who indicated they had used AAA/AAT to describe one or two ways that they use these methods within their practice. A total of 140 responses were recorded and the results for this question are presented in Table 5 and Figure 6. The responses were examined by two graduate students and by consensus were categorized into several different groups; however, upon further review it was determined that there were too many categories. One graduate student then reviewed the responses again and categorized them into 11 different groups. The responses (listed verbatim by category in Appendix F) were sorted into 11 different categories: social skills, increased verbalizations, emotional support, motor impairments, reinforcement/motivation, expressive language, receptive language, cognition, reading, articulation, voice/fluency, and sensory input. Some responses fitted into one or more categories, for example: “To help with motivation. Giving animals commands or requests or commenting about the animals.” That particular response would not only be categorized in reinforcement/motivation, but also expressive language. Most of the 140 participants with experience using AAA/AAT (35%) used the animals specifically for targeting expressive language by having the clients give commands to the animals. Few participants (2%) indicated that they use the animals for sensory needs. For example, one participant reported that they trained a pot-belly pig with coarse and bristly hair to feel within therapy that helped children with ASD with their sensory needs. In addition, one participant indicated that they used horses to increase the client’s core strength for speech production. Another respondent indicated that they would use a dog with children who were resistant to feeding; they had the children give the dog treats to desensitize them to the idea of eating orally. For the area of articulation, one participant responded that she

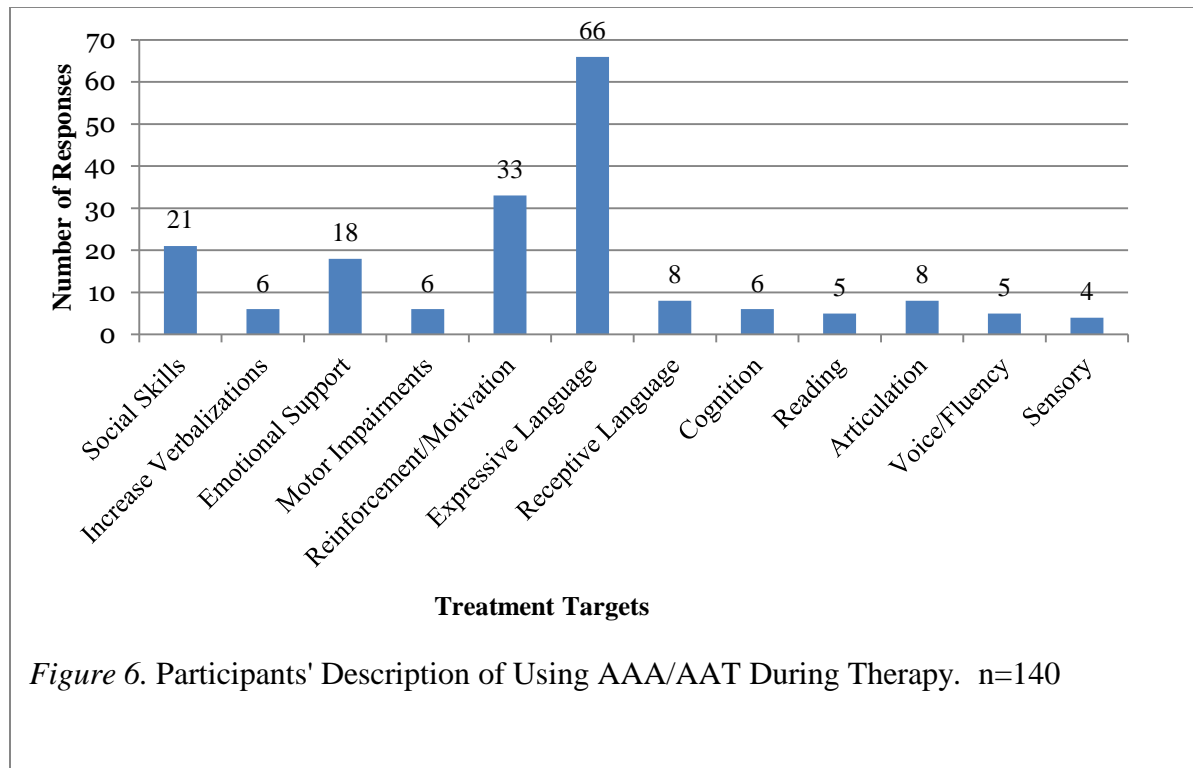
would put target words around the horses' body; once a child reached toward a word placed on the body; they had to produce it correctly before taking it off and interacting with the horse. Twenty of the 140 participants (14%) indicated that they specifically used AAA and 16 (11%) indicated that they used AAT.

Table 5

Participants' Description of Using AAA/AAT During Therapy

| Treatment Targets | Number of Responses | Percentages |
|--------------------------|---------------------|-------------|
| Social Skills | 21 | 15% |
| Increase Verbalizations | 6 | 4% |
| Emotional Support | 18 | 13% |
| Motor Impairments | 6 | 4% |
| Reinforcement/Motivation | 33 | 24% |
| Expressive Language | 66 | 47% |
| Receptive Language | 8 | 6% |
| Cognition | 6 | 4% |
| Reading | 5 | 4% |
| Articulation | 8 | 6% |
| Voice/Fluency | 5 | 4% |
| Sensory | 4 | 3% |

Note. n = 140. Mode highlighted in grey.



Animals Being Used and Considered for Use

For questions seven, eight, and nine, the 140 participants who indicated they had experience working with AAA/AAT were directed to answer the “a” version of these question while the 350 participants who indicated that they did not have experience working with AAA/AAT were directed to answer the “b” version of these questions. Participants who were directed to answer the “a” version of the questions had the opportunity to indicate populations they have worked with and would *consider* working with in the layout of one question; because of this format, there were some double answers when reviewing the results. Due to the format of questions seven, eight, and nine, responses were not forced and participants were able to skip the questions. Nonetheless, all of the participants who had experience with AAA/AAT, 140, answered

questions seven, eight, and nine. A total of 344 out of the 350 participants who indicated that they had no experience with AAA/AAT also answered questions seven, eight, and nine.

We asked the 140 participants who had experience working with AAA or AAT to indicate which animals that they have used with AAA/AAT and which animals they would consider using. The results of question 7 are presented in Table 6 and a graph representation is in Figure 7. Dogs were by far the most frequently selected animal that has been used in therapy as a total of 105 participants with AAA/AAT experience indicated that they have worked with them. The total number of participants who have actually used dogs in therapy ($n=105$) is nearly quadruple of the next most frequently selected animal, horses ($n=27$). The third most picked animal used in therapy was cats ($n=9$). When asked which animals respondents with AAA/AAT experience would *consider* working with, horses were the most picked ($n= 56$), while 48 would consider working with cats and 37 would consider working with the rodent category. Reptiles, farm animals, birds, rodents, and dolphins were not used by many of the participants with AAA/AAT experience; however, many indicated that they would consider working with most of the animals.

For those with no experience using AAA or AAT ($n=350$), a total of 335 participants indicated that they would consider working with dogs in AAT; the next most selected animal to be considered were horses ($n= 189$) and then cats ($n= 158$). A number of the participants with no experience in AAT indicated that they would consider using animals in the other, less frequently selected, categories as well.

ANIMAL-ASSISTED THERAPY

Cross tabulations using chi-square tests with percentages were also completed to compare if gender affected what types of animals were chosen. There were no statistically significant relationships between gender and types of animals.

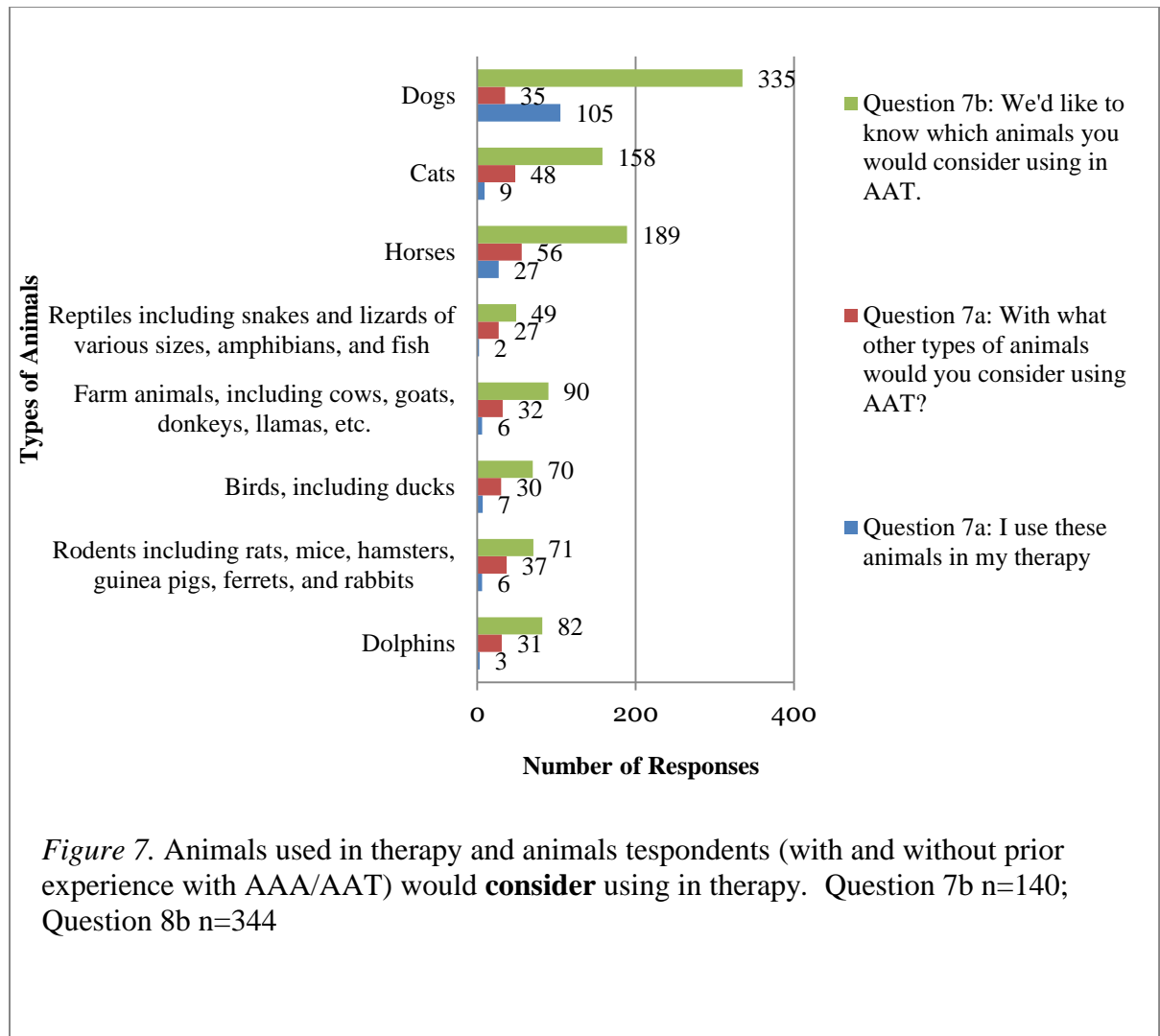
Table 6:

*Animals Used in Therapy and Animals Respondents (With and Without Prior Experience with AAA/AAT) Would **Consider** Using in Therapy*

| | Question 7a: I use these animals in my therapy | Question 7a: With what other types of animals would you consider using AAT? | Percentages* | Question 7b: We'd like to know which animals you would consider using in AAT | Percentages Of 344 |
|--|---|--|--------------|---|--------------------|
| Dogs | 105 | 35 | 92% | 335 | 97% |
| Cats | 9 | 48 | 41% | 158 | 46% |
| Horses | 27 | 56 | 59% | 189 | 55% |
| Reptiles including snakes and lizards of various sizes, amphibians, and fish | 2 | 27 | 21% | 49 | 14% |
| Farm animals, including cows, goats, donkeys, llamas, etc. | 6 | 32 | 27% | 90 | 26% |
| Birds, including ducks | 7 | 30 | 26% | 70 | 20% |
| Rodents including rats, mice, hamsters, guinea pigs, ferrets, and rabbits | 6 | 37 | 30% | 71 | 21% |
| Dolphins | 3 | 31 | 24% | 82 | 23% |

Note. Question 7a n = 140; Question 7b n = 344. Respondents could select more than one category of animals. Mode highlighted in grey.

*dogs percentage of 152; cats percentage of 140; horses percentage of 141; reptiles percentage of 140; farm animals percentage of 140; birds percentage of 141; rodents percentage of 141; dolphins percentage of 140.



Clients with Various Diagnoses

Question 8a asked respondents with AAA/AAT experience to indicate which client diagnoses have been associated with their past use of AAA/AAT and with which diagnoses would those same respondents *consider* using AAA/AAT; 8b also asked about consideration, but it was just for the SLPs who indicated that they had no experience

using AAA/AAT. A total of 140 participants, the total population directed to the ‘a’ portions of the questions, answered the question while 344 (98%) participants out of the 350 participants directed to answer the ‘b’ portion of the questions answered. The largest number of the participants who answered the ‘a’ portion of question eight indicated that they had used AAA/AAT with clients diagnosed with language impairments (n = 97, 87%) and autism spectrum disorder (n = 92, 87%). Hearing impairments were the disorder with the least number of clients involved in AAA/AAT.

The most common selected diagnosis that SLPs who had no experience with AAA/AAT (who answered Question 8b) *considered* using AAT with was autism spectrum disorder (n = 322, 94%). The next two most frequently picked diagnoses chosen among the participants with no experience of AAA/AAT were developmental cognitive delay (n = 297, 86%) and language impairment (n = 264, 77%). Traumatic brain injury was also another frequently selected choice for the SLPs that answered Question 8b. Only 13 of these participants indicated they would use AAT with clients who have voice and/or fluency disorders. Table 7 was converted into a graph (Figure 8) to demonstrate the most and least picked diagnoses related to questions 8a and 8b.

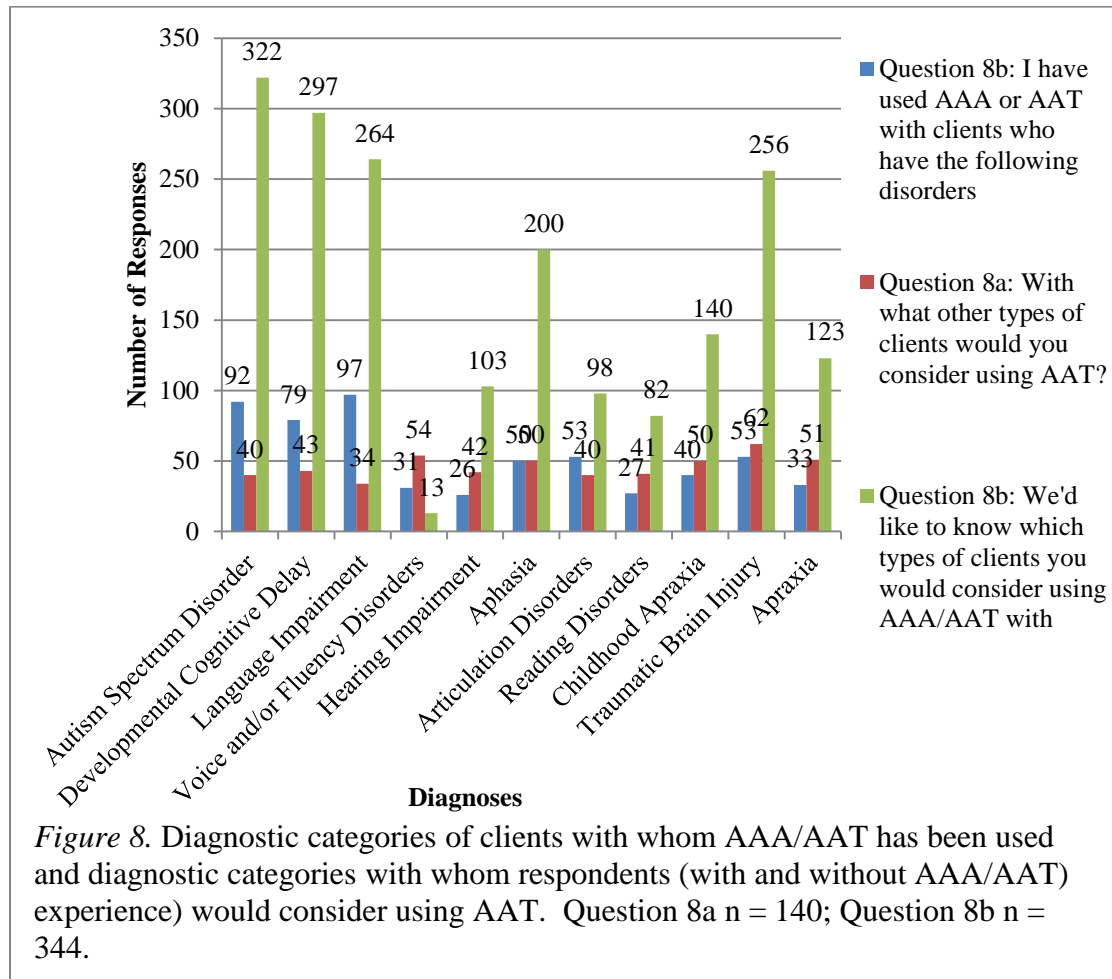
Table 7:

Diagnostic Categories of Clients with Whom AAA/AAT has been Used and Diagnostic Categories with Whom Respondents (with and without AAA/AAT experience) Would Consider Using AAT

| | Question 8a: I have used AAA or AAT with clients who have the following disorders | Question 8a: With what other types of clients would you consider using AAT? | Percentages* | Question 8b: We'd like to know which types of clients you would consider using AAA/AAT with | Percentages of 344 |
|--------------------------------|--|--|--------------|--|--------------------|
| Autism Spectrum Disorder (ASD) | 92 | 40 | 87% | 322 | 94% |
| Developmental Cognitive Delay | 79 | 43 | 82% | 297 | 86% |
| Language Impairment | 97 | 34 | 87% | 264 | 77% |
| Voice and/or Fluency Disorders | 31 | 54 | 60% | 13 | 3.8% |
| Hearing Impairment | 26 | 42 | 48% | 103 | 30% |
| Aphasia | 50 | 50 | 68% | 200 | 58% |
| Articulation Disorders | 53 | 40 | 66% | 98 | 28% |
| Reading Disorders | 27 | 41 | 49% | 82 | 24% |
| Childhood Apraxia | 40 | 50 | 63% | 140 | 41% |
| Traumatic Brain Injury | 53 | 62 | 79% | 256 | 74% |
| Apraxia | 33 | 51 | 59% | 126 | 36% |

Note. Question 8a n = 140; Question 8b n = 344. Respondents could select more than one category of diagnoses. Mode highlighted in grey.

*(ASD) percentage of 152; developmental cognitive delay percentage of 149; language impairment percentage of 151; voice and/or fluency disorders percentage of 141; hearing impairment percentage of 141; aphasia percentage of 148; articulation disorders percentage of 144; reading disorders percentage of 140; childhood apraxia percentage of 143; traumatic brain injury percentage of 146; apraxia percentage of 142.



Ages Ranges of Clients

Questions 9a and 9b focused on ages of clients with whom SLPs use or would consider using AAT. Results are presented in Table 8, and in Figure 9. Among the 140 participants that indicated they had experience working with AAA/AAT, the 6 -12 years populations was the most prevalent choice (n= 90). The age group of 3-5 year-olds was the next most chosen group (n= 79) for the 140 participants. The age group that was selected the least by the participants was the 0-2 population (n= 33). When asked which

ANIMAL-ASSISTED THERAPY

age groups the participants with experience working with AAA/AAT would *consider* using AAA/AAT, the most prevalent group selected was the 13-18 year age group (n=66). The 61 + year age group was the second most frequently selected group (n=64); below that was the 19-60 year age group. The younger age groups were evenly spread out, as 42 participants indicated that they would use AAA/AAT with the birth to 0-2 age group, 44 for the 3-5 age group, and 42 again for the 6 -12 age group.

Among the participants who did not have any experiences working with AAA/AAT, 313 indicated they would consider using AAA/AAT with 6 – 12 year-olds making it the most frequently selected age group. The second and third most selected choices were 3 – 5 year-olds (n = 295) and 13-18 year-olds (n = 293).

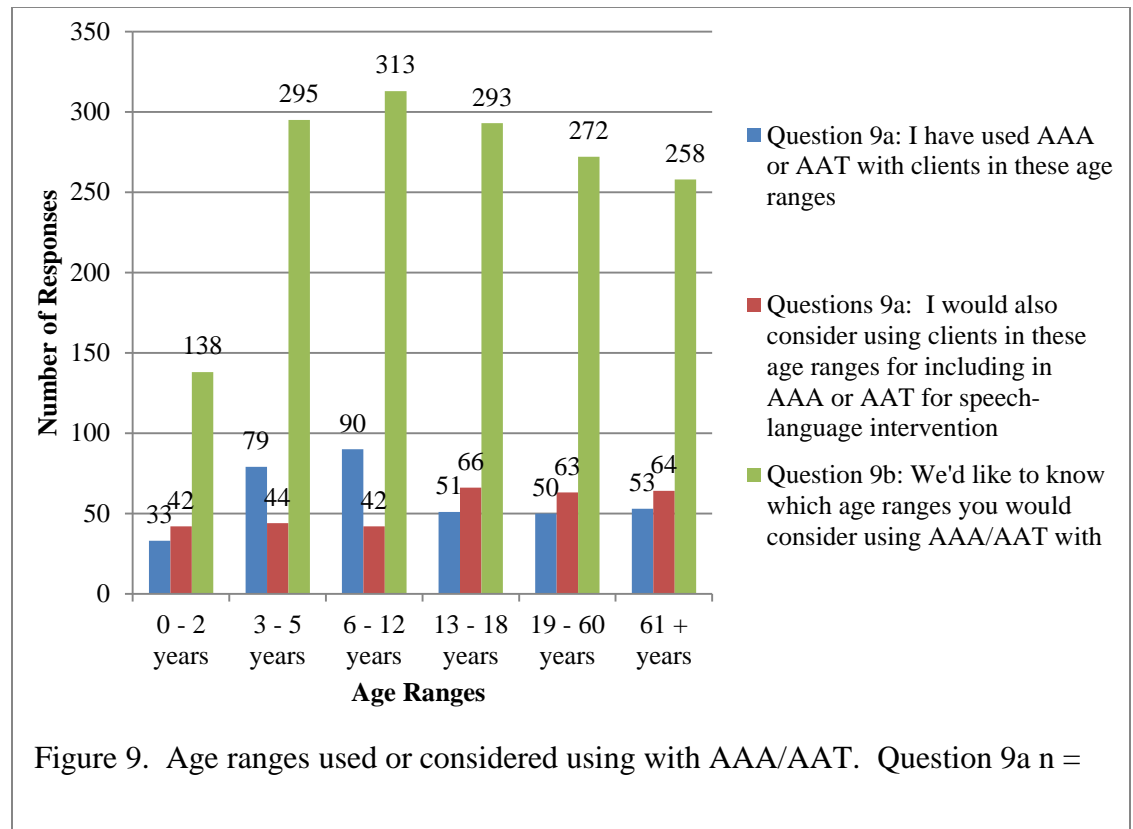
Table 8:

Age Ranges Used or Considered Using with AAA/AAT

| | Question 9a: I have used AAA or AAT with clients in these age ranges | Question 9a: I would also consider using clients in these age ranges for including in AAA or AAT for speech-language intervention | Percentages* | Question 9b: We'd like to know which age ranges you would consider using AAA/AAT with | Percentages Of 344 |
|---------------|---|--|--------------|--|--------------------|
| 0 – 2 years | 33 | 42 | 51% | 138 | 40% |
| 3 – 5 years | 79 | 44 | 81% | 295 | 86% |
| 6 – 12 years | 90 | 42 | 86% | 313 | 91% |
| 13 – 18 years | 51 | 66 | 81% | 293 | 85% |
| 19 – 60 years | 50 | 63 | 77% | 272 | 79% |
| 61 + years | 53 | 64 | 79% | 258 | 75% |

Note. 9a N = 140; 9b N = 344. Mode highlighted in grey.

*0-2 years percentage of 146; 3-5 years percentage of 151; 6-12 years percentage of 153; 13-18 years percentage of 143 19-60 years percentage of 146; 61 + years percentage of 149.



SLPs' Attitudes toward AAA and AAT

The participants' opinions regarding types of communication behaviors that may be positively impacted by an AAT approach were the focus of question ten, which was open-ended. A total of 490 responses were entered and then categorized to effectively view the results of the question. The question specifically asked for types of communication behaviors; however, upon reading the responses, the researcher categorized them by target treatments. This was done due to many responses that stated ideas other than communication behaviors such as emotional support and motivation. The 14 categories are: social skills (including the area of pragmatics), increased verbalizations of nonverbal clients, emotional support, motor impairment,

reinforcement/motivation/participation, expressive language, receptive language, cognition, reading, articulation, fluency/voice, sensory, generalization, and vocabulary.

Vocabulary could easily fit into the expressive language category; however, with the number of responses that specifically identified vocabulary, it was placed into its own separate category. Many of the responses listed more than one target such as, “Would be good for establishing joint attention, vocabulary building, and following directions.”

This response was categorized in communication skills, vocabulary, and receptive language. The results of the question are presented in Table 9 and Figure 10 and the raw data are presented in Appendix G. The most prominent communication behavior predicted to be positively impacted by the use of AAT was expressive language. Some respondents ($n = 36$; 13% of the expressive language responses) mentioned specifically having the clients give commands to the animals (most likely dogs and horses) as a means of increasing expressive language. “Social skills” was the second most frequent behavior mentioned; many participants indicated that the clients could practice having a conversation with the animals. Participants further indicated that a client’s anxiety could possibly be reduced around animals and negative behaviors would decrease as animals may promote a positive mood; these answers were categorized in the “emotional” category. Fluency and voice was a category that was comprised of 60 responses, mostly for fluency, as the animal was thought to possibly reduce any stress the client may have; however, many others suggested voice as a possible communication behavior as clients must produce a loud voice to call many of the animals and give them commands. Some of the categories do not fit under “communication behaviors,” but many respondents mentioned them when filling out the questions. For example, a behavior that was thought

ANIMAL-ASSISTED THERAPY

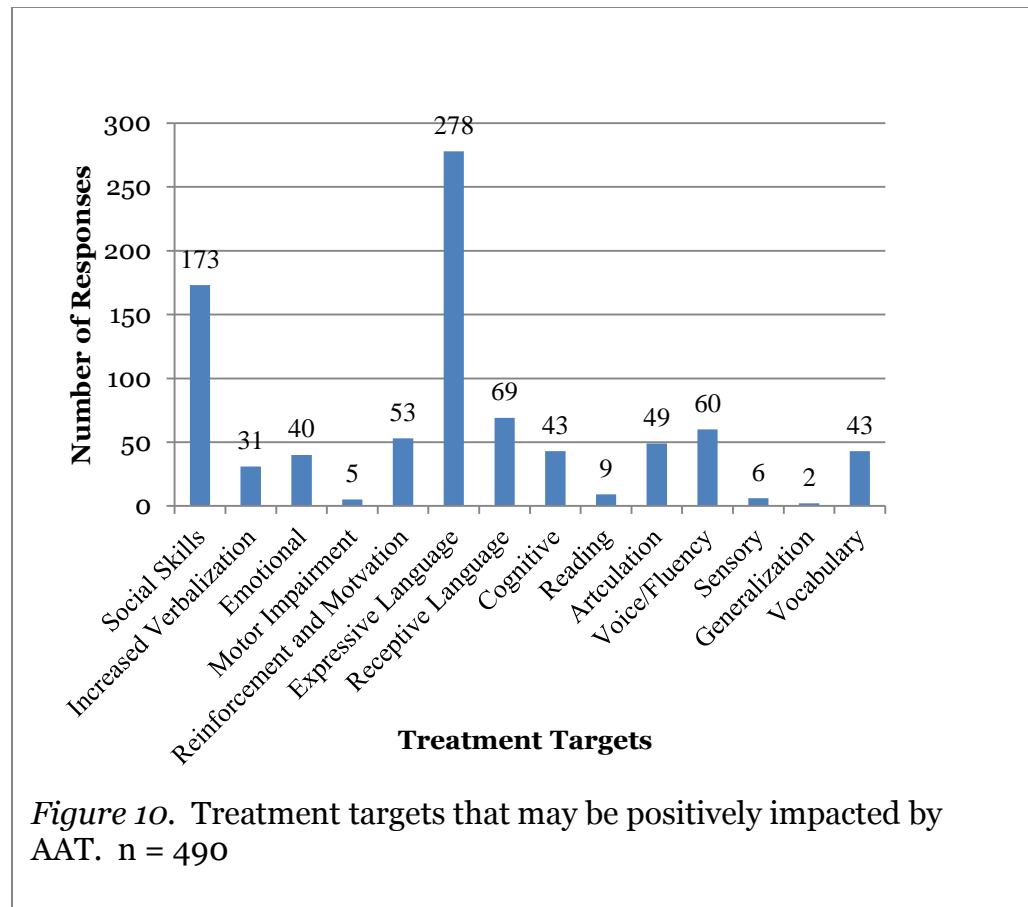
to improve with AAT was cognition. While that area does not specifically involve communication, it is an area that SLPs work in quite often, usually with the adult population. Cognition training can involve working with executive functioning skills, attention, and memory. Almost all of the participants who answered this question identified at least one area of communication that may benefit from AAT; only three specified that they did not think animals would help in any areas.

Table 9

Treatment Targets That May Be Positively Impacted by AAT

| Treatment Targets | Number of Responses | Percentages |
|--------------------------|---------------------|-------------|
| Social Skills | 173 | 35% |
| Increased Verbalization | 31 | 6% |
| Emotional | 40 | 8% |
| Motor Impairment | 5 | 1% |
| Reinforcement/Motivation | 53 | 11% |
| Expressive Language | 278 | 57% |
| Receptive Language | 69 | 14% |
| Cognitive | 43 | 9% |
| Reading | 9 | 2% |
| Articulation | 49 | 10% |
| Voice/Fluency | 60 | 12% |
| Sensory | 6 | 1.2% |
| Generalization | 2 | 0.04% |
| Vocabulary | 43 | 9% |

Note. n = 490



Question 11 (see Table 10 and Figure 11) asked participants to indicate how much they agreed, on a seven point Likert Scale, with the statement: AAT is an effective approach for speech-language pathology treatment. The answer with the greatest number of responses was “Agree” with a total of 140 (29%) responses. The second highest response was, “Neither Agree nor Disagree” (121; 25%) and the third was “Strongly Agree” (118; 24%). “Somewhat Disagree,” “Disagree,” and “Strongly Disagree” had five or fewer responses each.

To determine if there was a statistically significant relationship between whether or not participants had experience with AAA/AAT and their opinions as seen on the Likert Scales for question 11, the Pearson Correlation Coefficient was calculated. There

ANIMAL-ASSISTED THERAPY

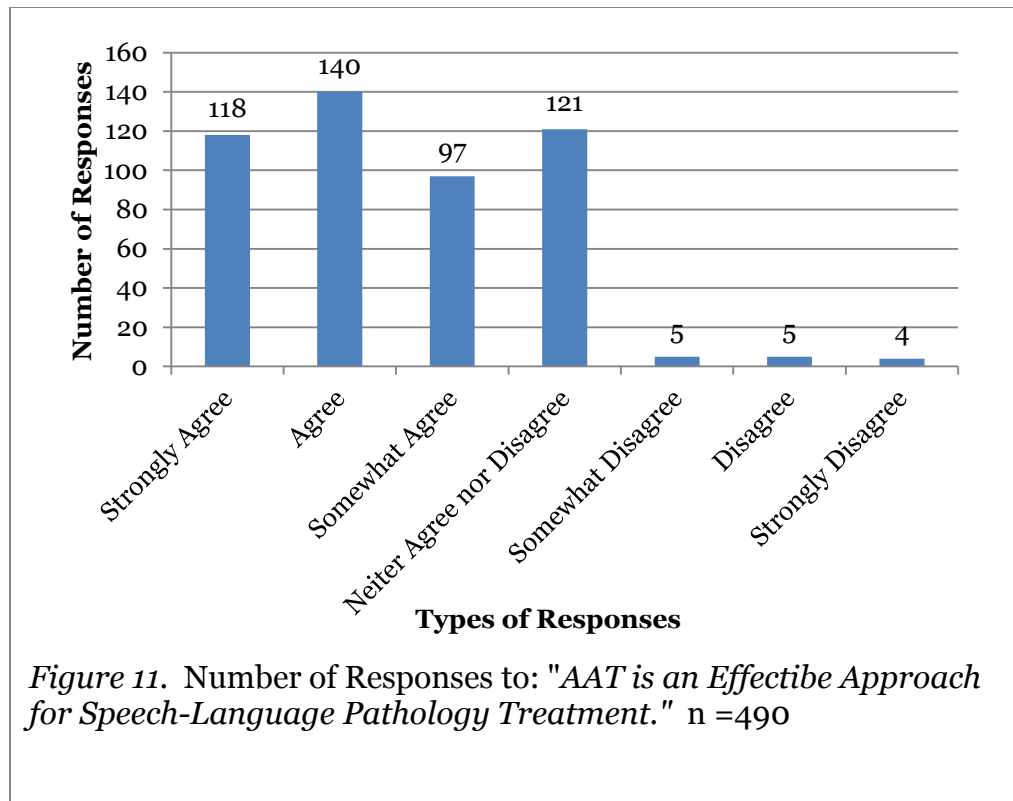
was no statistically significant relationship between if participants had experience working with AAA/AAT and their opinion on question 11 ($r = 0.04$, $p = 0.81$). There was also no statistically significant relationship between if the participants had experience working with AAA/AAT and their opinion on question 12 ($r = 0.15$, $p = 0.35$).

Table 10

Number of Responses to: “AAT is an Effective Approach for Speech-Language Pathology Treatment”

| | Strongly Agree | Agree | Somewhat Agree | Neither Agree nor Disagree | Somewhat Disagree | Disagree | Strongly Disagree |
|---------------------|----------------|-------|----------------|----------------------------|-------------------|----------|-------------------|
| Number of Responses | 118 | 140 | 97 | 121 | 5 | 5 | 4 |
| Percentages | 24% | 29% | 20% | 25% | 1% | 1% | 0.8% |

Note. $n = 490$. Mode highlighted in grey.



Question 12 asked participants to indicate how much they agreed on the same Likert Scale used in question 11, with the statement: AAT is a MORE effective approach for speech-language pathology treatment than AAA. "Neither Agree nor Disagree" received the highest number (172) of responses. The second highest response was "Agree," with 137 responses, and the third was, "Strongly Agree," with 93 responses. As with question 11, question 12's responses for, "Somewhat Disagree," "Disagree," and, "Strongly Disagree" had seven or fewer responses each. The responses for question 12 are on Table 11 and Figure 12.

Table 11

Number of Responses to: *AAT is a MORE Effective Approach for Speech-Language Pathology Treatment Than AAA*

| | Strongly Agree | Agree | Somewhat Agree | Neither Agree nor Disagree | Somewhat Disagree | Disagree | Strongly Disagree |
|---------------------|----------------|-------|----------------|----------------------------|-------------------|----------|-------------------|
| Number of Responses | 93 | 137 | 77 | 172 | 7 | 3 | 1 |
| Percentages | 19% | 28% | 16% | 35% | 1.4% | 0.6% | 0.2% |

Note. n = 490. Mode highlighted in grey.

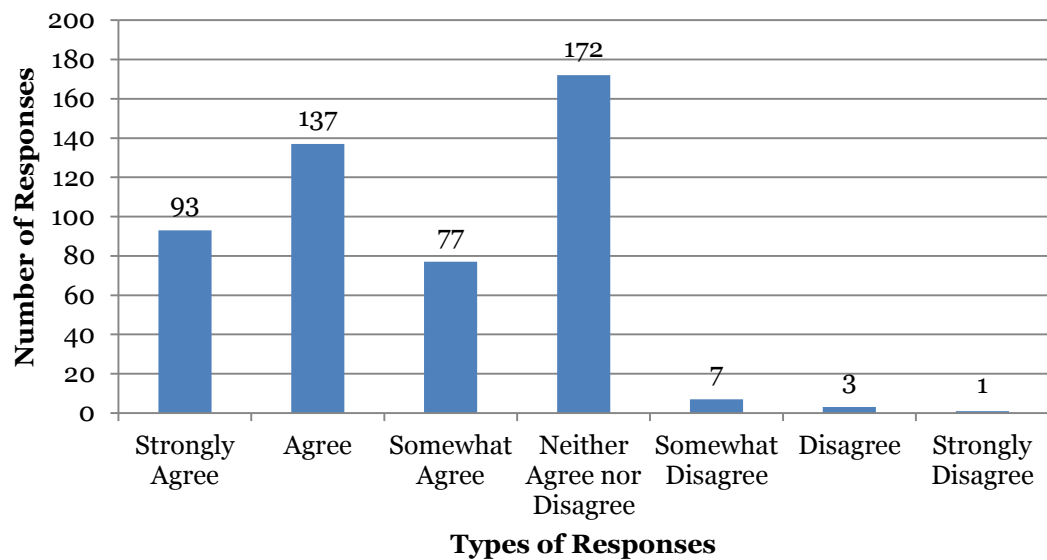


Figure 12. Number Responses to "AAT is a MORE Effective Approach for Speech-Language Pathology Treatment Than AAA." n = 490.

ANIMAL-ASSISTED THERAPY

Question 13 asked the participants if they would be interested in attending a workshop with CEUs on AAT. A total of 490 participants responded, 335 (68%) indicated that they would be willing to attend while 155 (32%) indicated that they would not be interested. A total of 115 out of the 140 participants who had experience working with AAA/AAT indicated that they would like to attend a workshop with CEUs.

Question 14 was a general question that asked participants if they had anything they would like to share with us regarding the use of either AAA or AAT. A total of 210 participants responded to the question; most responses indicated that they believed the use of animals in any field would benefit clients. A total of 16 indicated that due to the lack of research in this area, they do not use AAA or AAT within their practice. Four participants indicated that the survey was biased, as they were forced to pick specific answers for the questions regarding the types of animals that could be used, diagnoses of the clients, and age ranges, instead of having an answer, “none of the above.” One participant replied, “It’s a fad,” and some mentioned that they believed this to be an interesting topic; however, they had no intention of using animals within their practice. The raw data for this question is presented in Appendix H.

Chapter 5: Discussion

The use of AAT among the SLPs is not well documented or well-studied. Due to this lack of knowledge, the current research set out to answer the following:

- a) What is the prevalence of AAT within the speech/language pathology field?
- b) What are some of the attitudes towards AAT from practicing SLPs?
- c) What are some experiences of SLPs regarding AAT?

To aid in answering these questions, a survey was set up through the Qualtrics™ software and distributed to a random sample of 5,000 ASHA members. To display the results, the following will be discussed: demographics, benefits of AAT and AAA, types of animals used and considered for use, clients with various diagnoses, age ranges of clients, SLPs' attitudes toward AAA and AAT, and possible treatment targets. The prevalence of AAT will be discussed within each section.

Demographics

Most of the participants of the questionnaire were female, between the ages of 50-59 years old, practiced for 10-15 years, and were within the Western Region according to the United States census map. As mentioned in the methods section of the paper, sampling error occurs when only one element of a sample population is surveyed, but not all elements. Based on ASHA's *Counts for Year End 2013* report, it can be said that the random sample taken in the current research is fairly representative of ASHA's members in terms of gender, years of practice and place of residency; therefore, sampling error is not a large source of bias for the study. For example, 8% of the respondents were male compared to 3.7% of all SLPs being male (ASHA, 2013). If anything, there was a slight oversampling of males if these ratios are considered.

Coverage error refers to not allowing all potential participants of a study have an equal chance of being selected to participate. The list obtained of ASHA member's emails was a few years old and included not only SLPs, but ASHA members who were audiologists, special-education teachers, and professors. Because of this, coverage error may be slightly higher for SLPs, particularly those who joined ASHA most recently.

Nonresponse errors within survey studies occur when groups of participants do not respond to certain questions asked, such as males or females. Dillman (2000) defines a nonresponse error as, "The result of people who respond to a survey being different from sampled individuals who did not respond, in a way relevant to the study," (p. 11). No such patterns emerged in this study. All participants were forced to respond to every question within the survey except for questions 7a and b, 8a and b, 9a and b, and question 14. The 'a' portion of questions 7, 8, and 9, were answered by all participants; 344 respondents out of 350 answered the 'b' portion of question 7, 8, and 9.

Regarding the prevalence of AAT among the participants, the majority indicated that they had no experience working with AAA/AAT, which was expected. A total of 140 participants indicated that they had experience using AAA/AAT and, of those participants, only some were currently using AAA/AAT which confirms the hypothesis that the number of SLPs who use AAA/AAT is limited. This is further supported by the fact that even those SLPs who have experience in AAA/AAT only use it with 1-5 clients weekly. It is apparent that the use of AAA/AAT is limited throughout the field of SLP; however, it has been gaining some popularity in different fields such as physical and occupational therapy. It is most likely due to the rise of popularity of AAT in other health care fields and the recent increase in interdisciplinary service delivery that some

SLPs are now beginning to use it or AAA. These newer trends may also account for the data showing that most SLP respondents had only worked with it for 1-5 years.

Benefits of AAT and AAA

One of the reasons respondents were asked whether they had experience with AAA/AAT was because we anticipated that different viewpoints might emerge as a result. Of the participants who indicated that they have used AAA or AAT within their practice, many shared that they use it to target expressive language as well as social and conversational skills, such as turn taking and joint attention in therapy. In previously mentioned studies, this positive effect on social communication was also reported (Berry et al., 2013, Chitic et al., 2012). Other respondents indicated that they have used AAA/AAT for reinforcement and motivation, which are not target behaviors in SLP treatment, but are necessary components to the learning process. The various ways that participants indicated that they have used AAA/AAT within treatment demonstrates AAT may have both broad and focused benefits to clients.

Types of Animals Used in AAA/AAT

As predicted, most of the participants, with and without experience with these approaches, identified dogs as the animal that they would consider using with AAT; and, in fact, most participants who had experience with AAA/AAT indicated that they already use dogs within their practice. Horses and cats were the next most frequently selected animals among both groups of participants. It was expected that these animals would be the most prevalent as they are some of the most common pets (American Veterinary Medical Association, 2014). Dogs are easily trained and are a very popular pet within the U.S. (American Veterinary Medical Association, 2014). The use of horses in other types

of therapy has gained attention in popular media and research over the years (American Hippotherapy Association Practice Committee, 2000). It would make sense that participants identified them as possible therapy animals to use within the speech-language pathology field. Respondents could have chosen the cat as another popular animal to use within therapy possibly because most cats are tame, and they are also the second most popular pet to own within the U.S (American Veterinary Medical Association, 2014). Most of the animals actually used or that were considered were domesticated and could be trained, making them better candidates for AAA/AAT. The use of reptiles such as snake or lizard may be viewed as frightening to a client which could be why these animals were not chosen.

Clients with Various Diagnoses

In relation to clients' diagnoses, many participants who have had no experience working with animals indicated that they believed clients with ASD, developmental cognitive delays, language impairment, and aphasia would be appropriate for AAT. This result correlates with the question asking participants what types of communication behaviors they would possibly see positive improvement from when using AAT. Many believed that they would see improvement in the areas of expressive language and social skills, which are two areas of deficits among clients with ASD, language impairment, and clients with aphasia. These results also correlate with the question asking just the participants who had experience with AAA or AAT to indicate diagnoses that might fit well with AAA/AAT. Answers included language impairments, ASD, or developmental cognitive delays. These same participants indicated that they would consider using AAT with clients who have traumatic brain injuries, voice/fluency disorders, aphasia, and

childhood apraxia. Some of those diagnoses do not involve expressive language and social communication; perhaps those with experience saw firsthand what was beneficial to the clients and picked from what they observed while working with AAA/AAT. In summary, while AAT is not widely used overall, the participants indicated that it can be used with a wide range of clients with different diagnoses. It would be helpful in future studies to pinpoint in more detail the specific types of communication behaviors that might improve with AAT, regardless of diagnosis.

Age Ranges of Clients

Overall, the most frequently selected age range with whom AAA/AAT was already being used was the 6-12 years. Respondents without experience agreed by selecting this same age range most frequently as being the one with whom they would consider using AAA/AAT. The second most selected age range among both respondents with and without experience was the 3-5 year age range suggesting that experience with AAA/AAT possibly does not change a person's views of what age ranges would be appropriate for treatment using animals. It should be noted that all the age-ranges were selected among both experienced and non-experienced participants. As all age ranges were picked, it may be beneficial to focus on empirical studies of outcomes across age ranges to confirm respondents' opinions. Perhaps one could conduct a study using either AAA/AAT with two distinct age groups and using participants who all have the same diagnoses and treatment goal. They could conduct AAA or AAT on both age groups and observe which group of participants improved the most, or possibly even the fastest.

In regards to the results regarding animals, various diagnoses, and age ranges that were collected from the experienced participants, there is a possibility for measurement error, an error when data collected does not correctly answer the question that was asked. The question asked participants to indicate which animals, diagnoses, and age ranges they *had* worked with using AAA and/or AAT as well as which they would *consider* working with. It was assumed that if participants indicated that they had worked with dogs using AAA/AAT, they would not indicate that they would consider using them; however, when reviewing the data it was apparent that some respondents selected the same item (e.g. “dogs”) under “have used” and “would consider using.” This skewed data slightly because some, but not all, experienced participants did this. Clearer instructions stating that they must choose one or the other (“have used” or “would consider using”) might have resolved this issue.

SLPs’ Attitudes toward AAA and AAT

The responses for the two Likert-scale questions regarding attitudes towards AAT indicated a generally positive attitude towards AAT. Most participants “agreed” and “strongly agreed” that AAT was an effective approach for SLP treatment; very few participants indicated that they disagreed. As for AAT being a MORE effective approach for SLP treatment than AAA, most participants indicated that they neither agreed nor disagreed with that statement; however, the remainder of participants indicated agreement to some degree. It appears that the use of animals within the SLP field can be welcomed with positive attitudes; however, the use of AAT compared to AAA may not be as important, and many do not believe one is better than the other. This might relate to lack of understanding of the difference between these approaches, despite the definitions

provided in the questionnaire. Future well-controlled and randomized experimental research could be conducted comparing results of the use of AAA versus AAT to fully understand which type of treatment is more beneficial to the client.

Possible Treatment Targets

While the use of animals within SLP treatment wasn't very prevalent in this sample, many participants indicated that using animals within therapy could possibly promote many treatment targets when asked what communication behaviors they believed may be positively impacted by AAT. The most frequently selected target identified was the expressive language category. Many thought that clients could give commands to the animals (most likely dogs and horses) which would target expressive language and possibly voice. Others identified that communication skills could be targeted as well as articulation and fluency. All participants offered ideas as to what communication behaviors may be positively impacted by AAT such as increased vocabulary, receptive language, and articulation. Some participants mentioned ideas that were not specifically communication behaviors but other treatment targets such as reinforcement and motivation (previously mentioned), satisfying sensory needs, and emotional support. These results demonstrated the wide range of possible communication behaviors that might be positively impacted by this therapy approach. As previously discussed, there have been research studies demonstrating that animals have a positive effect on communication behaviors (Berry et al., 2013, Chitic et al., 2012) so one could expect to see this. Due to the large amount of participants believing that expressive language and social skills could be positively impacted from the use of AAT, one could speculate that clients with disorders that affect social communication, specifically

expressive language, would benefit from the use of AAT used in conjunction with AAT, such as clients with ASD and aphasia.

Conclusion

Chi-square tests were run to determine if there were significant relationships between independent and dependent variables within the data. There were no statistically significant relationships between participants' experience working with AAA/AAT and their gender, age, or how many years they had practiced. Chi-square tests were individually run between gender and the different types of animals participants have used and would consider using in AAA/AAT. There was no significant relationship between gender and any specific animal. Individual chi-square tests were also run to determine if there was a significant relationship between the participants' geographic location and whether they have used AAA/AAT; there was no statistically significant relationship between the two variables. There were also no statistically significant relationships between participants' experience working with AAA/AAT and their attitudes expressed on either Likert Scale regarding AAT being an effective form of SLP treatment, and AAT being a more effect form of SLP treatment than AAA. One could speculate that there were no statistically significant relationships due to the fact that those who chose to complete the questionnaire already had a particular interest in animals or AAA/AAT approaches. This would lead to more congruency among answers than not. Those who were not interested using animals within therapy and the healthcare field may not have taken the time to complete the questionnaire.

This study did have some additional limiting factors. Four respondents indicated that the survey was biased, as some of the question regarding the types of animals,

different diagnoses of the clients, and the age ranges of the clients, did not contain answers indicating "none of the above." This is true; there were no responses within the questionnaire indicating that no client would benefit from the use of AAT or AAA. The bias is that the researchers assumed that all participants would react positively to AAT. This would be categorized as measurement error. If there had been an answer indicating "none of the above," the data may have been quite different. Additionally, nonresponse error may have been a factor. If participants didn't believe that AAA or AAT benefited clients and couldn't find the answer they truly wanted to select, they could have exited the survey. This may explain why 53 participants didn't complete the survey after answering "yes" to the first or third questions. If the study should be replicated, it would benefit both the researchers and the participants to include a "none of the above" option on all pertinent questions. Finally, it may have been more beneficial to focus just on either AAA or AAT. This could lead to more straightforward answers on either of the therapies. It was apparent within answers to the open-ended question asking for additional comments that many respondents did not fully understand the differences of AAT and AAA. Future research should at least include more illustrative definitions.

Overall, this study demonstrated that the use of animals within therapy is occurring among a small number of SLPs and that the general trend among both those who do and those who do not have experience using animals in therapy view it in a more positive rather than negative light. Knowing this, the next steps would be to conduct more empirical research within this area of speech-language pathology examining which animals would be the most beneficial to clients using AAT, what clients with certain

ANIMAL-ASSISTED THERAPY

diagnoses would benefit the most from AAT, what age groups would AAT positively affect the most, and finally which type of therapy is more effective, AAA or AAT.

References

- American Hippotherapy Association Practice Committee (2000). American Hippotherapy Association. Retrieved from: <http://www.americanhippotherapyassociation.org/hippotherapy/present-use-of-hippotherapy/>
- American Red Cross (2013). Retrieved from: <http://www.redcross.org/pa/harrisburg/local-services/animal-assisted-therapy>
- American Speech-Language-Hearing Association (2004). Retrieved from: <http://www.asha.org/policy/TR2004-00001/>
- American Speech-Language-Hearing Association (2013). ASHA Counts for Year End 2013. Retrieved from: <http://www.asha.org/research/memberdata/member-counts/>
- American Veterinary Medical Association (2014). U.S. Pet Ownership Statistic. Retrieved from: <https://www.avma.org/KB/Resources/Statistics/Pages/Market-research-statistics-US-pet-ownership.aspx>
- Anderson, K., & Olson, M. R. (2006). The value of a dog in a classroom with severe emotional disorders. *Anthrozoos*, 19(1), 35-49. Retrieved from: <http://www.isaz.net/anthrozoos.html>
- Arkansas Children's Hospital (n.d.) Retrieved From: <http://www.archildrens.org/Supporters/Volunteer-Services/Other-Ways-to-Help/Animal-Assisted-Therapy.aspx>
- Bass, M. M., Duchowny, C. A., & Llabre, M. M. (2009). The effect of therapeutic horseback riding in social functioning in children with autism. *Journal of Autism*

and Developmental Disorders, 39(9), 1261-1267. doi:10.1007/s10803-009-0734-

3

Bassette, L. A., & Taber-Doughty, T. (2013). The effects of a dog reading visitation program on academic engagement behavior in three elementary students with emotional and behavioral disabilities: A single case design. *Child & Youth Care Forum*, 42(3), 239-256. doi:10.1007/s10566-013-9197-y

Behling, R. J., Haefner, J., & Stowe, M. (2011). Animal programs and animal assisted therapy in Illinois long-term care facilities twenty years later.

(1990-2010). *Academy of Health Care Management Journal*, 7(2), 109-117.

Retrieved from: <http://alliedacademies.org/Public/AffiliateAcademies.aspx>

Berget, B., Ekeberk, Ø., & Braastad, B. (2008). Attitudes of animal-assisted therapy with farm animals among health staff and farmers. *Journal of Psychiatric and Mental Health Nursing*, 15(7), 571-581. doi:10.1111/j.1365-2850.2008.01268.x

Berry, A., Borgi, M., Francia, N., Alleva, E., & Cirulli, F. (2013). Use of assistance and therapy dogs for children with autism spectrum disorders: A critical review of the current evidence. *The Journal of Alternative and Complementary Medicine*, 19(2), 73-80.

doi:<http://dx.doi.org.libpublic3.library.isu.edu/10.1089/acm.2011.0835>

Berry, A., Borgi, M., Terranova, L., Chiarotti, F., Alleva, E., & Cirulli, F. (2012). Developing effective animal-assisted intervention programs involving visiting dogs for institutionalized geriatric patients: A pilot study. *Psychogeriatrics*, 12(3), 143-150. doi:10.1111/j.1479-8301.2011.00393.x

- Black, A., Chur-Hansen, A., & Winefield, H. (2011). Australian psychologists' knowledge of and attitudes toward animal-assisted therapy. *Clinical Psychologist, 15*(2), 69-77. doi:10.1111/j.1742-9552.2011.00026.x
- Centre for Evidence Based Medicine (2013). Retrieved from:
<http://www.cebm.net/?o=1039>
- Chandler, C. (2001). Animal-assisted therapy in counseling and school settings. Retrieved from ERIC database. (ED459404)
- Chitic, V., Rusu, A. S., & Szamoskozi, S. (2012). The effects of animal assisted therapy on communication and social skills: A meta-analysis. *Transylvanian Journal of Psychology, 13*(1). Retrieved from <http://epsz.pszichologia.ubbcluj.ro>
- Cohen, J., & Richardson, J. (2012). Pit Bull Panic. *Journal Of Popular Culture, 36*(2), 285-317. doi: 10.1111/1540-5931.00007
- Dillman, D. (2000). *Mail and internet surveys: The tailored design method*. Toronto, Canada: John Wiley & Sons, Inc.
- Esteves, S. W., & Stokes, T. (2008). Social Effects of a Dog's Presence of Children with Disabilities. *Anthrozoos, 21*(1), 5-15. doi: 10.2752/089279308X274029
- Ferrese, L., Forester, B., Kowalski, R., & Wasilewski, L. (1998). Occupational therapist: Perspectives on using animal-assisted therapy with an elderly population. Unpublished masters project. Dallas: College Misericordia
- Friedmann, J., Katcher, A., Thomas, S., Lynch, J., & Messent, P. (1983) Social interaction and blood pressure: Influence of animal companions. *The Journal of Nervous and Mental Disease, 178*(8), 461-465.

- Friesen, L. (2010). Exploring animal-assisted programs with children in school and therapeutic context. *Early Childhood Education Journal*, 37(4), 261-267.
doi:10.1007/s10643-009-0349-5
- Jalongo, M. (2005). "What are all these dogs doing at school?" Using therapy dogs to promote children's reading practice. *Childhood Education*, 81(3), 152-159.
Retrieved from:
<http://www.springer.com/education+%26+language/learning+%26+instruction/journal/10643>
- Janura, M., Svoboda, Z., Dvorakova, T., Cabell, L., Elfmark, M., & Janurova, E. (2012). The variability of a horse's movement at walk in hippotherapy. / Varijabilnost Gibanja Konja U Hodu Tijekom Hipoterapijskog Jahanja. *Kinesiology*, 44(2), 148-154. Retrieved from:
http://hrcak.srce.hr/index.php?show=casopis&id_casopis=72&lang=en
- Levinson, B. (1971). Household pets in training schools serving delinquent children. *Psychological Reports*, 28(2), 475-481. Retrieved from:
<http://dx.doi.org.libpublic3.library.isu.edu/10.2466/pr0.1971.28.2.475>
- Limond, J., Bradshaw J., & Cormack, K. (1997). Behavior of children with learning disabilities interacting with a therapy dog. *Anthrozoos*, 10(2-3), 84-49. doi: 10.2752/089279397787001139
- Macauley, B. L., & Gutierrez, K. M. (2004). The effectiveness of hippotherapy for children with language-learning disabilities. *Communication Disorders Quarterly*, 25(4), 205-217. doi: 10.1177/15257401040250040501

Meline, T. (2010). *A research primer for communication studies and disorders* (p.9).

Boston, MA: Pearson Education, Inc.

Morreti, F., De Ronchi, D., Bernabei, V., Marchetti, L., Ferrari, B., Forlani, C., Negretti,

F., Sacchetti, C., & Atti, A. R. (2011). Pet therapy in elderly patients with mental illness. *Psychogeriatrics*, 11(2), 125-129. doi: 10.1111/j.1479-

8301.2010.00329.x

Mullet, S. (2008). A helping paw. *Rn*, 71(7), 39-44. Retrieved from:

<http://healthcaretraveler.modernmedicine.com/>

Nimer, J., & Lundahl, B. (2007). Animal-assisted therapy: A meta-analysis. *Anthrozoös*,

20(3), 225-238. doi:10.2752/089279307X224773

O'Callaghan, D. M., & Chandler, C. K. (2011). An exploratory study of animal-assisted

intervention utilized by mental health professionals. *Journal of Creativity in*

Mental Health, 6(2), 90-104. doi:10.1080/15401383.2011.579862

O'Haire, M. E., McKenzie, S. J., Beck, A. M., & Slaughter, V. (2013). Social behaviors

increase in children with autism in the presence of animals compared to toys.

PLoS ONE, 8(2), e57010 doi:10.1371/journal.pone.0057010

Pet Partners (2012) Retrieved from: <http://www.petpartners.org/page.aspx?pid=319>

Pet Rovers, Inc. (2013) Retrieved from: <http://patriotrovers.org/about-patriot-rovers/ptsd>

Prothmann, A., Bienert, M., Etrich, C. (2006). Dogs in child psychotherapy: Effects on

state of mind. *Anthrozoös*, 19(3), 265-277. Retrieved from:

<http://www.isaz.net/anthrozoos.html>

Reed, R., Ferrer, L., & Villegas, N. (2012). Natural healers: A review of animal-assisted

therapy and activities as complementary treatment for chronic conditions. *Revista*

- Latino-Americana De Enfermagem* 20(3), 612-618. Solomon, O. (2010). What a dog can do: Children with autism and therapy dogs in social interaction. *Ethos: Journal of the Society for Psychological Anthropology*, 38(1), 143-166. doi:10.1111/j.1548-1352.2009.01085.x.
- Snider, L., Korner-Bitensky, N., Kammann, C., Warner, S., & Saleh, M. (2007). Horseback riding as therapy for children with cerebral palsy: Is there evidence of its effectiveness? *Physical and Occupational Therapy in Pediatrics*, 27(2), 5-23. doi: 10.1300/J006v27n0202
- St. Cloud Hospital: CentraCare Health System (n.d.). Retrieved from: http://www.centracare.com/hospitals/sch/services/animal_assisted_therapy.html
- Thompson, J.R., Iacobucci, V., & Varney, R. (2012). Giddyup! Or whoa nelly! Making sense of benefit claims on websites of equine programs for children with disabilities. *Journal of Developmental and Physical Disabilities*, 24(4), 373-390. doi: 10.1007/s10882-012-9276-2
- Trotter, K., Chandler, C., Goodwin-Bond, D., & Casey, J. (2008) A comparative study of the efficacy of group equine assisted counseling with at-risk children and adolescents. *Journal of Creativity in Mental Health*, 3(3), 254-284. Retrieved from: <http://www.tandfonline.com/toc/wcmh20/current#.UwKiyIXEEXQ>
- Velde, B.P., Cipriani, J., & Fisher, G. (2005). Resident and therapist views of animal-assisted therapy: Implications for occupational therapy practice. *Australian Occupational Therapy Journal*, 52(1), 43-50. doi:10.1111/j.1440-1630.2004.00442.x

ANIMAL-ASSISTED THERAPY

Walsh, F. (2009) Human-animal bonds I: the relational significance of companion animals. *Family Process*, 48(4), 462-480. doi: 10.1111/j.1545-5300.2009.01296.x

Appendices

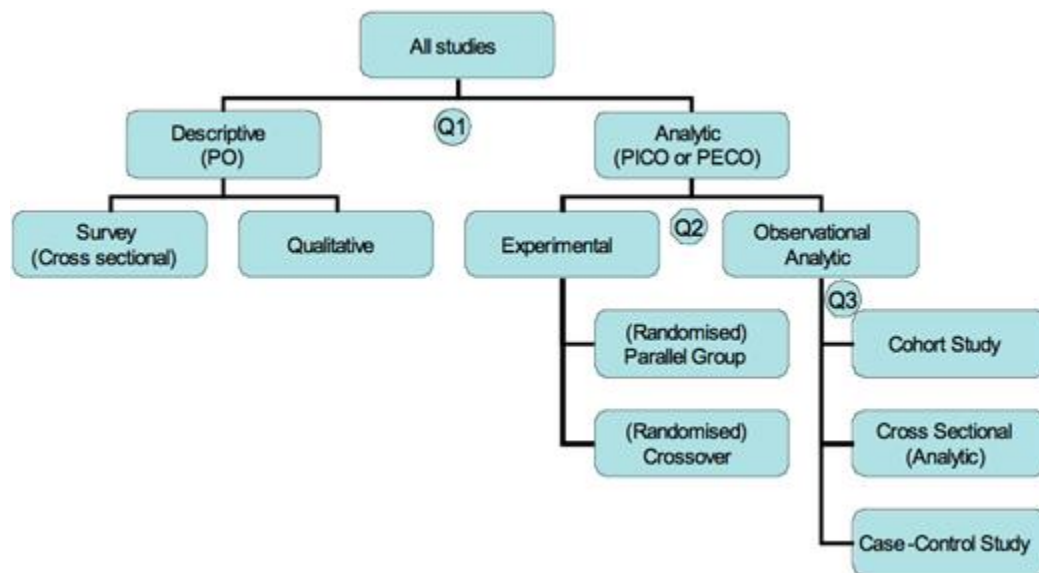
Appendix A

Levels of Evidence

| Level | Description |
|-------|---|
| Ia | Well-designed meta-analysis of >1 randomized controlled trial |
| Ib | Well-designed randomized controlled study |
| IIa | Well-designed controlled study without randomization |
| IIb | Well-designed quasi-experimental study |
| III | Well-designed non-experimental studies, i.e., correlational and case studies |
| IV | Expert committee report, consensus conference, clinical experience of respected authorities |

Note: ASHA (2004)

Study Design Tree



Note: CEBM (2013)

Appendix B

Table of Studies Presented in Literature Sorted by Levels of Evidence

| Levels of Evidence | Study's Author |
|---------------------------|---|
| Ia | |
| Ib | |
| IIa | Bass, M., Duchowny, C. A., & Llabre, M. M. (2009) |
| | Berry, A., Borgi, M., Terranova, L., Chiarotti, F., Alleva, E., & Cirulli, F. (2012) |
| | Chitic, V., Rusu, A. S., & Szamokozi, S. (2012) |
| | Morreti, F., De Ronchi, D., Bernabei, V., Marchetti, L., Ferrari, B., Forlani, C., Negretti, F., Sacchetti, C., & Atti, A. R. (2011). |
| IIb | Trotter, K., Chandler, C., Goodwin-Bond, D., & Casey, J. (2008) |
| III | Berget, B., Ekeberk, Ø., & Braastad, B. (2008) |
| | Nimer, J., & Lundahl, B. (2007) |
| IV | Bassette, L. A., & Taber-Dought, T. (2013) |
| | Berry, A., Borgi, M., Francia, N., Alleva, E., & Cirulli, F. (2013) |
| | Black, A., Chur-Hansen, A., & Szamoskozi, S. (2012) |
| | Chandler, C. (2001) |
| | Friesen, L. (2010) |
| | O'Callaghan, D. M., & Candler, C. K. (2011) |
| | O'Haire, M. E., Mckenzie, S. J., Beck, A. M., & Slaughter, V. (2013) |
| | Thompson, J.R., Iacobucci, V., & Varney, R. (2012). |
| | Velde, B.P., Cipriani, J., & Fisher, G. (2005) |

Table of Descriptive Studies Presented in Literature Sorted by CEBM's Design Tree

| Descriptive Studies | Study's Author |
|----------------------------|--|
| | Behling, R. J., Haefner, J., & Stowe, M. (2011). |

Appendix C

Questionnaire

Dear Participant:

My name is Alyse Watt and I am a graduate student in speech-language pathology at Idaho State University. I need your assistance. For my Master's thesis I am examining the prevalence, attitudes, and experiences of certified speech-language pathologists regarding the use of animal-assisted therapy (AAT) within our field. Because you are a certified speech-language pathologist with the American Speech-Language-Hearing Association, you have been randomly selected from an ASHA mailing list to participate in this research study.

Because we value your opinion, we are asking that you complete an electronic questionnaire by following the link at the end of this letter. The questionnaire should take no longer than ten minutes.

Please know that your participation in this study is entirely voluntary and there will be no compensation for responding; respondents are able to refuse to participate by not opening the questionnaire or by not answering the questions. Once you've completed the survey, your data will become anonymous -- the e-mail link will be deleted from my records. If you have not filled out the questionnaire, you will receive a reminder e-mail in one week. After the reminder is sent, your e-mail link will be deleted from my records.

It is important to understand the exact definition of **AAT** as it pertains to this specific study. AAT should not be confused with other types of informal techniques that use animals within therapy sessions. According to Pet Partners (2012), **the definition of AAT is:**

... a goal-directed intervention in which an animal that meets specific criteria is an integral part of the treatment process. AAT is directed and/or delivered by a health/human service professional with specialized expertise, and within the scope of practice of his/her profession. (n.p.)¹

The main idea from the definition of AAT is that it is a goal directed intervention and that the animal takes an integral part of therapy. Another type of therapy that uses animals is animal-assisted activities (AAA) and it should not be confused with AAT. Pet Partners (2012) **defines AAA as:**

...the casual "meet and greet" activities that involve pets visiting people. The same activity can be repeated with many people, unlike a therapy program that is tailored to a particular person or medical condition. (n.p.)¹

¹ Pet Partners (2012) Retrieved from: <http://www.petpartners.org/page.aspx?pid=319>

ANIMAL-ASSISTED THERAPY

AAA does not involve any treatment goals and there are basic spontaneous visits to clients where the trained facilitators of AAA do not take any detailed notes. To aid in the process of understanding the two distinct types of animal therapy, examples provide by Pet Partners (2012)¹ are given:

| Animal-Assisted Activities | Animal-Assisted Therapy |
|--|--|
| An individual brings her dog to an adult's long-term care facility to "play" with residents. Although the staff is involved in the visits, the staff has not set treatment goals for the interactions. Aside from signing in and out, no records are kept. | A woman recovering from a stroke has limited standing and walking tolerance. A physical therapist utilizes the presence of a dog to motivate the client by placing the dog on a raised table and asking the client to stand while stroking or brush the dog's back and head. To increase the client's ambulation skills, the therapist has the client walk the dog for short distances around the facility grounds. (The handler uses a double lead and walks alongside the dog and client.) |

If you choose to participate in this study, please answer the questions as honestly as possible and to the best of your ability. Your participation is MUCH appreciated! The data I collect may drive future research regarding speech-language pathology and the use of animal-assisted therapy.

Thank you for your willingness to assist me with my Master's thesis! Here is the link to the questionnaire: [link here]. Please note that by opening the survey, you are giving your consent to participate in the study.

Sincerely,

Alyse Watt

Department of Communication Sciences and Disorders Idaho State University
Idaho State University

1. Are you an ASHA certified, state licensed, and/or state certified speech-language pathologist (SLP)?
 - Yes– continue to question 2
 - No– end survey (see EXIT THANK YOU STATEMENT at end of this section)
2. Have you ever worked as a SLP using either AAA or AAT? (*Remember that AAA is defined as a casual meeting of clients and animals where no specific treatment goals are*

ANIMAL-ASSISTED THERAPY

addressed. AAT is defined as a goal-directed intervention in which an animal that meets specific criteria is an integral part of the treatment process.)

- Yes- continue to question 3
- No – continue to question 2a

2a. Would you be willing to answer a few more questions regarding animal-assisted therapy?

- Yes – continue to question 7b
- No - end survey (see EXIT THANKYOU STATEMENT at end of this section)

3. Are you currently using AAA or AAT in your SLP practice?

- Yes – continue to Question 4
- No – continue to Question 6

4. For how many years have you used AAA and/or AAT?

- Participants will be given an integer box to fill in their length of use. Continue to question 5.

5. With how many clients, on a weekly basis, do you use AAA or AAT? Please enter a number in the box

- Participants will be given a box to fill in their answer.

6. Describe 1 – 2 ways that you are using or have used AAA or AAT in your SLP practice

- Participants will be given a box to fill in their answer.

7. A. Researchers have used AAT with different types of animals. We'd like to know which animals you have used in your practice and any other types of animals you'd consider using. Please check the boxes below that apply.

| Animals | I use these animals in my therapy. | With what other types of animals would you consider using AAT? |
|--|------------------------------------|--|
| Dogs | | |
| Cats | | |
| Horses | | |
| Reptiles including snakes and lizards of various sizes, amphibians, and fish | | |
| Farm animals, including cows, goats, donkeys, llamas, etc. | | |
| Birds, including ducks | | |
| Rodents including rats, mice, hamsters, guinea pigs, ferrets and rabbits | | |
| Dolphins | | |

B. Researchers have used AAT with different types of animals. We'd like to know which animals you would consider using in AAT. Please check the boxes below that apply

ANIMAL-ASSISTED THERAPY

| | |
|--|--|
| Animals | With what types of animals would you consider using AAT? |
| Dogs | |
| Cats | |
| Horses | |
| Reptiles including snakes and lizards of various sizes, amphibians, and fish | |
| Farm animals, including cows, goats, donkeys, llamas, etc. | |
| Birds, including ducks | |
| Rodents including rats, mice, hamsters, guinea pigs, ferrets and rabbits | |
| Dolphins | |

8. A. Research studies on AAA/AAT have involved clients with varying types of communication disorders. We'd like to know which types of clients you have used AAA/AAT with and which other types you'd consider using AAA/AAT with. Please check the boxes below that apply.

| Diagnosis | I have used AAA or AAT with clients who have the following disorders | With what other types of clients would you consider using AAT ? |
|--------------------------------|--|---|
| Autism Spectrum Disorder | | |
| Developmental cognitive delay | | |
| Language Impairment | | |
| Voice and/or fluency disorders | | |
| Hearing Impairment | | |
| Aphasia | | |
| Articulation Disorders | | |
| Reading Disorders | | |
| Childhood Apraxia | | |
| Traumatic Brain Injury | | |
| Apraxia | | |

- B. Research studies on AAA/AAT have involved clients with varying types of communication disorders. We'd like to know which types of clients you would consider using AAA/AAT with. Please check the boxes below that apply.

| Diagnosis | With what types of clients would you consider using AAT ? |
|--------------------------------|---|
| Autism Spectrum Disorder | |
| Developmental cognitive delay | |
| Language Impairment | |
| Voice and/or fluency disorders | |
| Hearing Impairment | |

ANIMAL-ASSISTED THERAPY

| | |
|------------------------|--|
| Aphasia | |
| Articulation Disorders | |
| Reading Disorders | |
| Childhood Apraxia | |
| Traumatic Brain Injury | |
| Apraxia | |

9. A. Similarly, research studies on AAA/AAT have involved clients of varying ages. We'd like to know which age ranges you have included in AAA/AAT and which other ages you'd consider using AAA/AAT with. Please check the boxes that apply.

| Age Range | I have used AAA or AAT with clients in these age ranges. | I would also consider using clients in these age ranges for inclusion in AAA or AAT for speech/language intervention. |
|---------------|--|---|
| 0 – 2 years | | |
| 3 – 5 years | | |
| 6 – 12 years | | |
| 13 – 18 years | | |
| 18 – 60 years | | |
| 60 + years | | |

- B. Similarly, research studies on AAA/AAT have involved clients of varying ages. We'd like to know which age ranges you would consider using AAA/AAT with. Please check the boxes that apply.

| Age Range | I would consider using clients in these age ranges for inclusion in AAA or AAT for speech/language intervention. |
|---------------|--|
| 0 – 2 years | |
| 3 – 5 years | |
| 6 – 12 years | |
| 13 – 18 years | |
| 18 – 60 years | |
| 60 + years | |

10. In your opinion, what types of communication behaviors might be positively impacted by using an AAT-specific approach? (*Remember that AAT is defined as a goal-directed intervention in which an animal that meets specific criteria is an integral part of the treatment process.*) Please list 1-2 communication behaviors.

- Participants will be given a box to fill in their answer

11. Please indicate on the rate scale below how much you agree with this statement:

AAT is an effective approach for speech-language pathology treatment.

Select the number on the scale that matches your opinion:

| | | | | | | |
|----------|----------|----------|------------|----------|----------|----------|
| 1 | 2 | 3 | 4 | 5 | 6 | |
| 7 | | | | | | |
| Strongly | Agree | Agree | No Opinion | Disagree | Disagree | Strongly |
| Agree | | Somewhat | | | Somewhat | |
| Disagree | | | | | | |

12. Please indicate on the rating scale below how much you agree with this statement:

ANIMAL-ASSISTED THERAPY

AAT is a MORE effective approach for speech-language pathology treatment than AAA.

(Remember that AAT is defined as a goal-directed intervention in which an animal that meets specific criteria is an integral part of the treatment process. AAA is defined as a casual meeting of clients and animals where no specific treatment goals are addressed)
Select the number on the scale that matches your opinion

| | | | | | | |
|----------|----------|----------|------------|----------|----------|----------|
| 1 | 2 | 3 | 4 | 5 | 6 | |
| 7 | | | | | | |
| Strongly | Agree | Agree | No Opinion | Disagree | Disagree | Strongly |
| Agree | | Somewhat | | | Somewhat | |
| Disagree | | | | | | |

13. Would you be interested in attending a workshop with CEUs on AAT?

- Yes – continue to question 14
- No – continue to question 14

14. Is there anything else you'd like to share with us about AAT or AAA? Please enter your comments here.

- Participants will be given a box to fill in their answers

Now, just a few quick questions **about demographics**.

15. What is your gender?

- Male
- Female

16. What is your age?

| | |
|--------------------|--------------------|
| 20-29 years of age | 30-39 years of age |
| 40-49 years of age | 50-59 years of age |
| 60 Years | |

17. How many years have you been practicing as a SLP?

- Have participant fill in their length of experience from integer box.

18. Where do you live and practice?

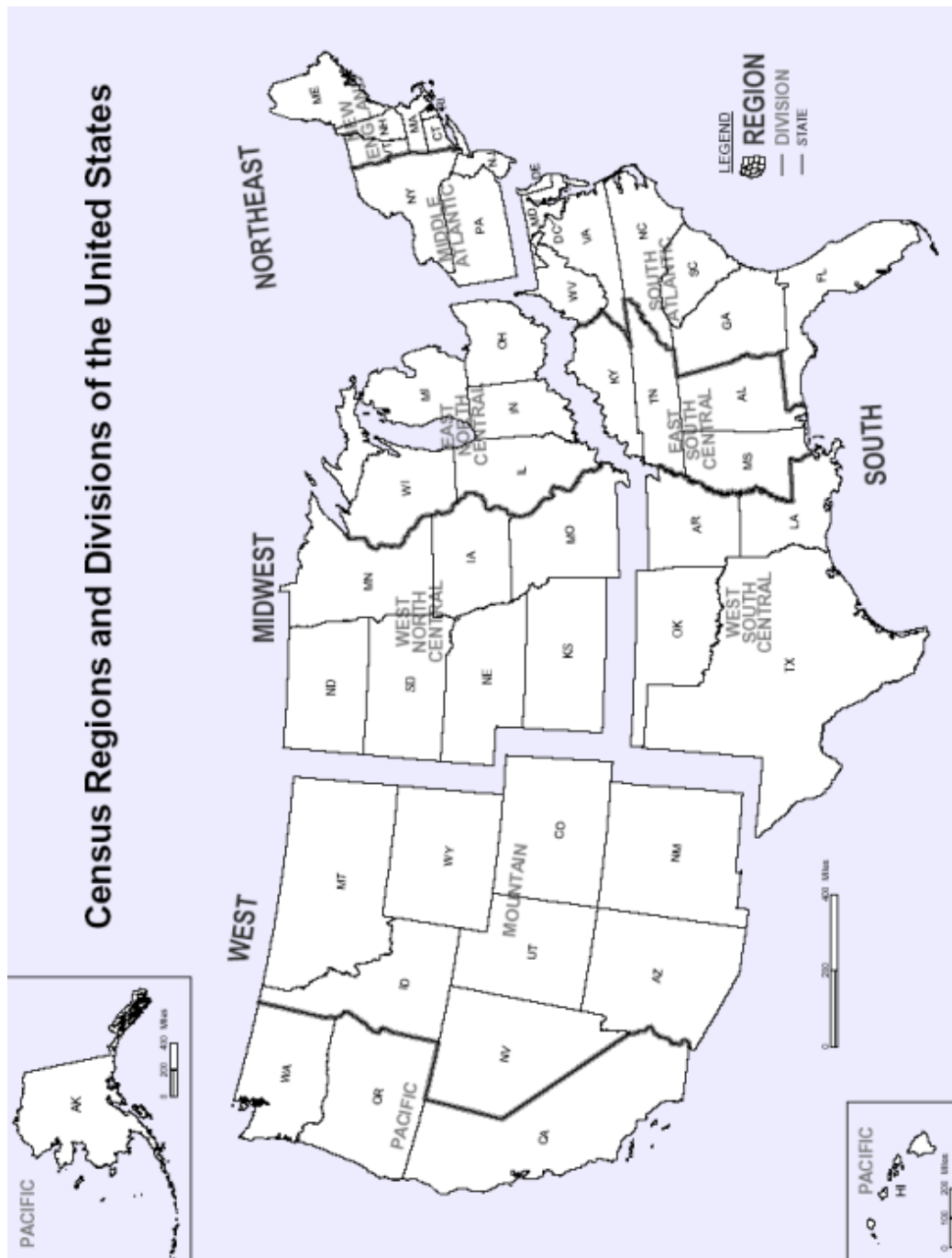
- A list of states will be provided for the participant to choose from.

(Go to EXIT THANK YOU STATEMENT)

EXIT THANK YOU STATEMENT: Thank you for answering the questions in this survey. Your opinion matters! If you have questions about the study, please contact me at: wattjacq@isu.edu.

Appendix D

Regions of the United States as presented by the United States Census



Appendix E

Responses to Question 6: With how many clients, on a weekly basis, do you use AAA or AAT? Please enter a number in the box.

Note. The responses shown were taken directly from the Qualtrics™ software and were left unchanged from their original condition in which the participants entered them onto the questionnaire.

ANIMAL-ASSISTED THERAPY

3-5

4

1 monthly

~3

One to two clients once a month

Anywhere from 0-65, depending on the targeted objectives.

1 (We have 26 clients and we have monthly sessions, so this question should be how many per month which would range from 16-26)

One or two

Varies between 1-5 because it is not appropriate for every client

Very few--the Director of the University of Southern Mississippi Speech-Language-Audiology sometimes brings her dogs to work to encourage clients to participate in clinical activities.

I use AAA with all clients as my dogs are in my office everyday. I use AAT regularly with 3 clients one time per week each.

24 per week during summer months

15

1-5

Average of 2 patients once a week

8-10

I use AAA with approximately 3 clients and AAT with 1 or 2 generally

25

1

5-10

Use from an AAT standpoint varies due to my, the handler, schedule. From an AAA standpoint, Boomer has 3-8 interactions a week, depending on the clinic schedule.

I use AAA with 25 clients weekly

20

under 5.

30 on average

0 only 2 months out of the year for a clinic program.

2

In a summer only program I have about 10 clients twice a week.

Twenty

20

On an as needed basis. One client currently.

Currently 1 client, once weekly.

At least 2

2

Mostly AAA, 2 x per month, 20-30 contacts per visit. Usually staff/employees at the hospital where I work. Some patients though I've only requested orders for one pt. for actual AAT.

2

3 currently

2

1-6

Appendix F

Responses to question 6: Describe 1 – 2 ways that you are using or have used AAA or AAT in your SLP practice.

Note. The responses shown were taken directly from the Qualtrics™ software and were left unchanged from their original condition in which the participants entered them onto the questionnaire.

ANIMAL-ASSISTED THERAPY

(In the past) with aphasic adults. Especially those who were afraid to attempt speech, and/or were depressed.

1- in a pet therapy group in collaboration with a recreation therapist, to work on assisting people with aphasia to generate meaningful productions of language (command the dog through words or gestures) and with people with TBI to work in multidisciplinary team goals such as memory or walking. / / 2- have had the dog present during speech therapy sessions with neurobehavioral patients to help calm the patient and support their mood so they could better participate in therapy. Seemed to help build rapport - they liked me more for having a dog

1- When I was working in the schools, a former student of mine brought her dog, Dodger, by about once a month for the children in the pre-school students with hearing loss, to interact with. To no surprise, even the children at the beginning of their program vocalized more with the animal and were more likely to use language to request permission to touch Dodger or offer him treats. The language expansion activity using language experience pages that talked about the experience was a great bridge between home and school. Many parents reported that the children pulled out the page to show them and could share about the experience. Many parents added it to the experience binder they kept at home so the children were able to share the experience again with grandparents and other family members when they visited. / 2- My Australian Shepherd, Jake, came to the office for socialization when he was a pup. I did not have an active caseload but many clients, both children and adults stopped by on a regular basis to talk to him and based on those interactions, he was invited to stroke group to interact with the client in a controlled setting. The side benefit of this was that many of our pediatric clients still come by to see if "Jake is in the house" and will initiate a conversation with me about his shenanigans at home. A secondary benefit of having Jake in my office, was that when students and faculty were feeling stressed, they would often stop by to visit with Jake and de-stress.

1) During a community-based conversation aphasia group program, members (persons with aphasia) brought in their dogs to share with their group members. / / 2) Persons at the acute stage of living with aphasia and their family members were encouraged to obtain a dog.

1) I have used the movement of a horse to stimulate trunk stability and improve respiratory support for speech. / 2) I have used the environment of horseback riding to encourage initiation and choice making for children with speech and language deficits.

1) Improve eye contact and turn taking skills with children with autism, / Child must get eye contact from dog before giving a command. Child must wait till dog completes the task before giving a reward. / 2) Teach past tense verbs by having dog do a variety of tricks or actions. The children must describe what the dog did with the correct verb tense. Also teach location concepts this way.

1) Teaching a child to use a switch by showing him/her how a therapy dog uses a switch to control her environment. / 2) Using a therapy dog to teach children about language concepts (ie: adjectives) to define and describe. / 3) Using a therapy dog to teach children specific pragmatic goals (ie: turn-taking, eye contact, response to verbal commands). / 4) using a therapy dog to show hearing impaired children the benefits of using sign language to communicate (for non-verbal clients).

1. pediatrics: Dogs used to get either spontaneous or rehearsed verbal utterances from children (when interacting with the dogs). / 2. Used with coma pts to look for tracking, any spontaneous responses (tactile, verbal etc) / 3. Used with adult neuro patients (stroke/verbal utterances; parkinsons / increased voice volume to interact with the dogs) / 4. You can use animals for almost any type of expressive speech / language goal with almost any population.

ANIMAL-ASSISTED THERAPY

1. Language stimulation with use of dog in birth to 3 population. / 2. Use of language stimulation with CVA patients with therapy dog visit. (produce 2 word utterance while interacting with the dog) /

1. To elicit language from a child giving requests to a dog (sit, eat, go). / / 2. To elicit early language in the form of "I want" or "more" (the animal was a great motivator)

A family brought their dog within the ST session of their nonverbal daughter to facilitate motivation to interact.

A friend brought in a very large rabbit for the children to pet and talk about. She explained how to approach the animal, and how important it was to be calm, quiet and move slowly. This was for two boys who were working on self regulation (with a diagnosis of autism).

A therapy dog and handler came weekly to the adult ICF/IDD facility I work at. At times, I would escort the dog and handler to various classrooms to interact with the individuals. This was AAA versus AAT.

A therapy dog was used for the kids to describe what he was doing, where items were in relation to him, "train" him to increase clear articulation.

AAA only to / 1. Help regulate a child who is disregulated /

AAA / Brought my Lab mix, Cindy, to sit in with stroke patients. While petting and rubbing her ears, one patient open up and attempted more tasks during the treatment session, and smiled more often. When it was time for the next treatment, this patient was anxious to interact even though Cindy was not there. I think Cindy opened up a common ground for communication between therapist and patient making therapy flow easier.

AAA in acute care and ltc settings for patient enjoyment/motivation, in our practice with young children to assist in eliciting increased responses with animal present

AAA- included rabbit in classroom language lesson and social language in gr 1.

AAA was used with my stroke patients to help provide language stimulation, where the patient would focus on saying commands to the dog that he would respond to.

AAA-follow directions regarding an animal at my client's home. Greet an animal, demonstrate "gentle" as opposed to "hard or rough", use animal as a reward for completing a direction or an activity.

AAA--my sweet, calm lab was brought into a special program at my school for students on the autism spectrum. She hung out in their room, and students interacted with her as they moved to and from the room throughout the day. Some students helped with taking her on walks and giving her water. One student in particular was deathly afraid of dogs, and his special education teacher kept working with him on getting closer and increasing his tolerance and understanding that she was not going to hurt him. He is no longer afraid of her, and his mom reports he has increased tolerance for other dogs as well! This has been huge for this family. Meg, my dog, no longer goes to work with me, but this student's family watches her every day now. They call her "Meg the wonder dog."

AAT was used in dolphin therapy when I lived in another state. It was successfully used with a child born without a corpus callosum and had resulting motor planning difficulties including oral apraxia. / / I have used my own dog (AAT) with children with the ASD. They would give him directions, interact, make changes when he didn't obey. They were more verbal and able to practice reciprocity easier with him. / My language learning disabled kids did dog science with him, collecting data, video taping and summarizing their findings. Great executive function activities. / Sadly, my wonder dog passed away two years ago.

ANIMAL-ASSISTED THERAPY

As a part of Aphasia Camp Northwest we have had therapy dogs as an activity for stroke survivors living with aphasia

As a way to increase interactions casually prior to therapy. As a reward.

As language prompts and conversational starters in addition to positive rewards

Assistance dog follows commands given by client, with commands containing target sounds of client. / / Assistance dog will play a game with clients as a reward for work completed, or will 'listen' to clients read while client works on target sounds, language skill, fluency, etc.

Autism therapy, speech therapy with children, executive functioning therapy, then others for either contingency or to interact with as motivation.

Boomer has been involved in a research study with 10 language impaired children who attend our structured class two days a week. He has been in therapy sessions with adults with aphasia, children with articulation, language, and fluency disorders. He is used as reinforcement to clients; they get to come and pet him for working hard in therapy. He has gone into our 18month-3 year old Toddler program for interaction and to teach children about animals; at times incorporated into the lessons.

bringing my puppy to meet a child who was practicing a phoneme in his name; I also frequently use photos of my animals doing different things to either elicit questions or practice verb phrases

Brought my own dog to the SNF where I worked b/c of the positive emotional impact it had on my patients and other residents during their recovery.

Child followed verbal instructions to place items that dog then retrieved

Client providing commands to therapy dog.

Comfort / / conversation /

Conversation starters / Emotional regulation / Interacts for neglected side of body /

Describe 1 - 2 ways that you are using or have used AAA or AAT in / your SLP practice.

Dog to motivate therapy

Dog to promote language and engagement with student on the autism spectrum

During summer camp programs we partnered with a local organization to bring dogs to sessions so that the children could interact with them.

Executive function skills / Memory / Syntax building

For a client with an AAC device, to call the dog. It was VERY motivating. I have taken a continuing ed course in AAT and would like to use it in my current practice.

for child to say one-word commands to dog, dog responding is reinforcement

For helping them make their wants/needs known. To keep anxiety down and to allow for independence.

For motivation and increased comfort levels

Had dogs come to group therapy sessions for boys diagnosed with ASD. Focused on reading animals body language.

Have students greet the animal at the door / / Have the students give the animal commands to carry out

Have used a dog and horse (different times) to encourage selective mute clients to communicate (successfully), have used horses to facilitate social communication changes in Aspergers clients. (Clients created videos of how to be safe around a horse. Compared their own difficulties in working in different environments with the difficulties horses have in adjusting to humans.)

Have used: Client will follow one-step directions and use clear speech when giving instructions.

Having a dog around to elicit language /

hippo therapy for a child with TBI and a child on the autism spectrum.

I have a private practice in a sunny, dog-friendly building in San Francisco with many other small businesses. I do not have a dog. I will invite one of my neighbors' dogs to come into my suite during therapy when one of my school age therapy clients asks for one. Dogs usually just hang out but the kids LOVE having them. The kids also enjoy putting out a water bowl for the dogs. Sometimes kids want to bring their family dog to speech, which is a great treat for both of them...I also run an adult aphasia group. One of my graduate student volunteers brings her dogs to group. The dogs just hang out, sometimes one of them sits on a lap or licks up the food that is spilled on the floor. Everyone loves having the dogs around. I do not use them in any structured way. They just make it AWESOME.

I am actually the supervisor of a pediatric hospital-based therapy practice in which an AAT group was conducted by a SLP and OT. I was NOT the actual SLP in the group, but I participated in decision making and staffing for the group. / / Additionally, for several years I was the program chair for a clinical symposium we held yearly, and one year we had the owner of the AAT company present and demonstrate with the audience for one of the sessions.

I assisted an elementary student with Angelman's Syndrome with horse therapy. I programmed and held an augmentative communication device that she used to tell the horse to go/giddle up, trot, gallop, faster, slower, whoa/stop, more/ride again, finished/stop, I want to brush the horse, I like it. etc. She absolutely loved it and used it for a few requests and comments. I helped her with this on 2 occasions until she was able to use it more independently with prompting from the horse trainer and parent.

I can't recall the exact name of the group, but they would often come to the hospital with their pet (always a dog in my experience) and anyone who wanted to visit with their pet was welcome to. I found it useful to help some of my more language delayed children by introducing/reinforcing receptive/expressive language concepts in a more salient fashion through this unique opportunity.

I formally participated in a multi-disciplinary, state-wide clinic for the assessment of children with developmental disabilities, to rule-in and or rule-out the presence of an autism spectrum disorder. The location of the clinic, within the VCU Healthcare System, had AAA. Routine, during the clinical observation time (60-80 minute block of time, during which parents were interviewed with the ADI, and SLP and OT provided non-standardized clinical observations related to play, development, ideation, motor planning, communication, regulation, etc., the AAA trainer and dog would come for a brief visit.

I had a therapy dog that worked with me with preschool children. The kids were excited and much more verbal when she came with me. The dog also came with me to SNF's and residents loved holding her and having her take wheelchair rides on laps. She made everyone laugh and feel relaxed.

I have a registered therapy dog thru TDI, Therapy Dogs International and we volunteer for AAA type visits, / Yet I also use my dog in AAT for Adult CVA, cerebral palsy and other neurological pt care goals

I have a trained therapy dog. Kids with autism learn how to greet her, give her commands, either verbal or signed, and we also talk about what she is wearing and why (Suzy wears clothes every day; she is a teacup Yorkie). They also can earn playtime with her if they do well on their work; she retrieves balls and toys that are tossed.

I have asked one of our volunteers and animal volunteers at the hospital where I work to come into a session and help cheer up a patient and see if she would participate more if Sophie (the

dog) were there.

I have brought my puppy to therapy for some of the residents to play with before/after skilled intervention. Would love to find out more information on AAT

I have had clients bring in a patient's cat or dog as a motivator for spontaneous language output, but from an AAA standpoint as this was not a part of routine therapy or a directed goal.

I have had my dog(s) at work a few times. I let them run around and meet the clients in the office that day.

I have had SLPs who use AAT and AAA talk in a school-age language class I teach. The SLP brings her dogs. This may not be what you want for your study, but I think it is important to help pre-professionals be aware of this approach to treatment.

I have not used either in my practice. However, while I was completing my graduate studies, each student in our program was required to participate in AAT activities with a local partner in our community using horses as the therapeutic partner. I'm sorry, I can't remember the name at this time.

I have treated clients while they were either riding a horse, or engaging in care tasks such as brushing and feeding the horse.

I have used a dog and a horse to engage children in therapy activities. For example, i have taped pictures of words with target sounds on a horse and the child had to pick a word and say it using the target sound. I have used a dog by hiding pictures with pieces of dog food and when the dog found the food/picture, the child said the word. I have also had children verbally interact with the dog and give her commands, such as "sit". Children were told that the dog might not understand their word if they didn't use their correct /s/sound.

I have used AAA by calling dogs on call at our Hospital and requesting Hospital and requesting the desert a particular client, encourage the client to talk to and play with the dog. I have never used this as a formal or goal-directed therapy technique, more to cheer people up and provide variety

I have used AAA to encourage communication with children with limited verbal abilities as well as a method to encourage practice for children with articulation disorders.

I have used AAA to encourage communication with children with speech delays, autism, down syndrome, etc.

I have used AAT for nonverbal & selective mute patients that have heightened anxieties. / / I have used AAA for children with autism and related spectrum disorders.

I have used AAT with developmentally delayed children ages 4-7 on goals such a following one step directions, naming objects and pictures, practicing basic communicative interactions via AAC and sequencing. I had a trained pot belly pig and she was particularly attractive to the autistic children because she didn't huff/puff/jump/bark etc like a dog would. Her hair was also very bristly and felt neat.

I have used AAT within the hospital setting and in home care, as a motivational aide, and/ or as a direct communication partner with children..

I have used it to: / 1. increase general strength and coordination, as well as increased strength and coordination of specific muscles / 2. develop tolerance for sensory processing / 3. provide opportunities for an experience that will later be 'retold' verbally or in writing

ANIMAL-ASSISTED THERAPY

I have used my cat who was hit by a car as a kitten (TBI & neurological symptoms) and my cat with Cerebellar Hypoplasia (CH; like spastic CP in humans) in animal-assisted activities in the therapy room. The head-injured cat is very outgoing with strangers and extremely gentle with and tolerant of young children. My cat with CH was especially patient with children, tolerating them sticking fingers in his ears, pulling his tail, etc. The children tend to communicate and/or verbalize more when the cats were in the therapy room. More verbal children tend to ask more questions because the cats don't move like neurologically-intact animals and are generally more outgoing than most typical housecats.

I have used specially trained horses to encourage children to meet expressive speech and language goals by having the horses respond to voice commands given by the child and reinforced by the handler. / / I have also used specially trained dogs to encourage children to increase their verbal language by having the dogs respond to voice commands given by the children and reinforced by the handler.

I have introduced my pet to a patient. / I have also encouraged my patient to give her dog a command.

I provide push in services in a classroom with 10-15 cognitively disabled 14-21 year old students with a range of disorders (Down's Syndrome, Autism, Cerebral Palsy, etc.). Once a week, the therapy dogs come to visit for about a half hour to hour. Students read books to the dogs, cuddle with the dogs, and talk to the dogs. / / Sometimes, I take pictures and have students use the pictures later in therapy to describe the dogs and write or tell about their experiences.

I purposely did tx in my home to allow me to use real life situations to facilitate tx. My dog was often an integral part of speech practice. Practicing prepositions "on the dog! next to the dog! under the dog over the dog". Also initiating one word phrases in the form of commands would increase participation dramatically.

I run a clinical program 2 times a year with horses, iPads and children who are non-verbal or low verbal

I teach young children (ages 2 -12) with communication delays, ADD, ADHD, ASD and challenging behaviors and have found that the incorporation of pets (two cats and a dog) to be beneficial is helping many children learn to relate in a prosocial way with the animals and caring for the animals. We have worked on many concepts both linguistic and social-emotional.

I use AAA as a motivator and to elicit spontaneous language. I also use it to help generalize and naturalize skills and to pull automatic speech from patients with aphasia. I use AAT to address attention and sensory issues interfering with cognitive processes. I also use AAT for expressive language goals such as using props and "outfits" for the dog and discussing what might happen in each outfit, etc. building language around the dog. The client gets to choose their favorite outfit and dress her at the end.

I use AAA in the following ways: 1) floor play with balls to encourage motor imitation, language use / 2) brushing/combing therapy dogs as a reward for finishing task activities with expected behaviors / 3) playing 'catch' with tennis balls when learning to take turns / 4) including animal 'singing' during oral motor activities / 5) using therapy dogs for greetings and departures (client says "Hi Louis" and "Bye Louis")

I use animal facilitated therapy for targeting expressive language, voice/speech and attention (often left neglect).

I use both to provide therapeutic intervention to patients with neurological deficits that make excellent progress with these animals present during their sessions, according to strict data collection.

ANIMAL-ASSISTED THERAPY

I use horses and sometimes other farm animals to increase core strength for speech production, care of animals for comprehension skills and following directions, and animal interactions for increasing the use of language.

I use horses in a pediatric hippotherapy program to provide speech language services targeting clear goals and objectives. Currently I use the horse much as a I would any other therapeutic tool such as a ball or swing or game: a means to elicit or enhance increasing levels of speech language acquisition. Incorporating safety practices put forth by the American Hippotherapy Association (I am a level 1 therapist in AHA) I either have children on or off the horses, often going to different stations with language or specific articulation activities for structured practice. I have also started a peer group of high functioning ASD children using the horses as a supplemental activity within my social teaching curriculae, which targets functional social development and turn taking skills. I am finding some interesting use of the horses for fluency therapy, as the rhythm and pacing of the horses motion seems to support (merely based on my observation) more fluent structured speech production when paired with fluency strategy teaching and practice opportunity.

I used AAT when I worked in an outpatient rehab hospital about 10 years ago with children and adults...LOVED IT!! The dogs were great at facilitating language for all ages and diagnosis (articulation, stuttering, CVA, TBI, wordfinding, memory, etc). We would hide object (stimulus) all around the room and have the patient direct the dog where to go. It was lots of fun for all and we got lots of language out of everyone!

I used AAT, based on your definition, with the nonverbal three-year-old. We use the dog to name its body parts head tail back nose eyes etc. it was incredibly effective! A child then began to name his own body parts.

I used to have a cat where I saw clients. My clients loved my cat. I felt that my cat in some way knew which clients to be close to--often depressed people, and which ones to avoid.

I work in a residential rehab facility. When pets visit, I invite them into our sessions because I see it have a very positive impact on my clients (as long as they are animal lovers). It generally improves mood and participation.

I work in a SNF, and have brought in my cats to visit with residents. It was never a billable therapy session, and many of the residents who were handling my cats were not on my caseload. But I found it to be a very positive experience for all involved, and many residents still ask when I'm bringing them in again.

In collaboration with Physical Therapists and Occupational Therapists, I worked in a HippoTherapy program for a year. I used the horses and the activities surrounding horse care to increase children's vocabulary, language comprehension, and language expression skills in one hour session for two full semesters.

In the early part of my career, I created the only AAT program in the state of Arizona that was approved by the State Health Board. I was very involved at that point, and we used animals to facilitate communicate communication with adults who had neurogenic disorders. We used both community-trained animals and the patient's own pets, depending on the animal's ability to behave.

Increase participation in therapeutic activities / Directed treatment for cognitive retraining and expressive language

I've used animals to help motivate some of my preschoolers and help coax language out of them. language stim

ANIMAL-ASSISTED THERAPY

Meet and greet /

Motivation to participate. Reward for participation.

My patients have participated in hippotherapy.

n/a

not using jAAA or ASAT at this time / /

Our therapy department has a therapy dog whom provides AAA to clients in all 3 disciplines. She has worked very well with 2 patients during their end of life. The PT has used her with patients who own dogs and have to practice walking a dog on a leash.

reinforcement for elicited behaviors.

See: <http://www.asha.org/Publications/leader/2005/050927/f050927c.htm>

Students with reading goals read to a therapy dog

Technique to increase communication includes use of a specifically chosen horse/pony to facilitate vocalizations while in direct contact with horse/pony with SLP present, as well as other trained staff.

The Director's dogs are introduced to some clients to encourage them to participate in treatment sessions.

The increase language with children with autism and to calm anxiety in clients who stutter
therapy dog to greet and calm clients

Therapy dog used for greetings, motivation and calming for kids with Autism. / / Used in therapy as a communication partner for early intervention.

Therapy with kids on the spectrum.. School therapy.

This is very limited, but a retired SLP in the community who had a trained therapy dog came to an aphasia group session for sort of a meet and greet. It definitely wasn't AAT. There were no formal goals. She volunteered, and I was interested in seeing how the clients would react, and it very favorable. It was a few years ago, and I can't remember details. (I have 2 aphasia groups and they visited only one of the groups. Prior to the visit, I asked the clients in each group if they would be interested in the visit. Almost everyone responded favorably, but one person was not receptive at all, but it was the other group that the SLP was able to visit anyway.

To help ease anxiety in children and also as a reward system. I had an office cat for 20 years and the kids loved it!

To help with motivation. Giving animals commands or requests or commenting about the animals

To motivate client for using language and following directions

Use dogs to help facilitate basic communication through understanding animal body parts, turn taking (throwing the ball etc. to which the dog retrieves and the child throws again), "reading" to the dog, or having a tea party that is child directed.

Used AAA to increase participation of clients in a group setting

Used AAT to increase communication/expressive language in a non-verbal child. Child increases phrases up to 4 words after 2 weeks of therapy conducted 3 days per week.

Used animals as motivators, to get patients talking, specifically to the dogs, especially when speech was halting or stuttering was involved.

used my therapy dog to assist children with ASD to initiate/reciprocate and verbalize while dog is present.

Used to increase verbal interactions of a child through play with animals. To support social interactions, decrease aggressive behaviors, build confidence.

ANIMAL-ASSISTED THERAPY

Using dogs and simple commands for aphasic patients to produce target words.

Verbalizing instructions; reading to an animal

Visiting patients at a rehabilitation facility, encouraging interest and communication via meet and greet.

Volunteers from Therapy Dogs, Inc. have visited our facility for client encounters. This has later initiated other activities eliciting language related to the dogs.

We had a certified therapist and reading dog that came in to see our severe resource students weekly in the elementary school I worked at previously.

We have a dog and a rabbit in the clinic for primarily AAA however we do have some specific related goals for a few of our clients. For example, the pet rabbit and related rabbit care is used by the OT to address some specific goals e.g. motor planning, sequencing and self care skills. The dog is used to help elicit speech for some of our almost nonverbal children- they will have to tell him or gesture commands to get him to perform an activity or trick. Mostly the animals are used as a reward for children and are not used extensively during the sessions.

We have a facility dog I have used the dog to help an apraxia patient pet the dog and elicit spontaneous vocalizing sounds and words and also to touch body parts on the dog, and to give the dog commands.

We have a therapy dog that comes on occasion to aphasia group sessions and some individual sessions with brain injured adults.

We have a therapy dog that primarily works with occupational therapy. I point out the dog to shy or hesitant children (AAA) as an ice breaker. I have used the dog with very feeding resistant children by having them give the dog treats to desensitize them to the idea of eating orally. I have used the dog to motivate children to identify body parts ("pet his ears")

We have therapy dogs that come into our facility all the time. When doing therapy sessions, sometimes I have the therapy dogs come in to elicit stimulation or to help with possible depression. No direct goals have been used.

We use horses to help motivate children to complete tasks and follow directions. Program is not a certified hippo therapy program. It was similar

We work with special needs children many with sensory issues and several with fear of animals. We introduce animals (turtles, guinea pigs, iguanas, dogs, horses and so forth) during therapy to help with sensory/animal issues and to promote increased participation during therapy. We use the animals in working during our story time (such as "The Big Red Barn"), learning places (where an animal might live and why) and many more ... monthly activities. Just to note: I have worked with all age populations. When working in Rehab we had periodic volunteers who would bring animals to our support group. When I worked with Early Childhood Intervention (0-3 population) we utilized the animals in the home. Often the children we saw had minimal "toys" so we utilized everything at hand. In the schools this was not used unless the entire school had an activity involving animals. When I worked in the nursing homes, this was one of the most beneficial treatments utilized for improving social, physical and communication skills.

ANIMAL-ASSISTED THERAPY

When I was working in The Essential Early Education Program for children ages 3 years to kindergarten (5+yrs) at a local school system, I had a student who had cerebral palsy. Although he vocalized readily he had few recognizable words. The OT who worked for our program in the school was also a certified hippotherapy provider. Our program paid for weekly lessons at an indoor track where two other children also were receiving horseback therapy. This was about 8 or 9 years ago as this child is now in middle school. He had language goals to signal for the horse to go and stop. The OT wanted the children to use the words "walk on" to go. I think but can't really remember what they said for stop. Anyway, our student easily said "walk on" to signal for his horse to walk. His other therapy goals included balance, trunk strength, motor planning. It was terrific, very meaningful, effective and fun.

With hospital based rehab patients: command execution or use of voice to call the dog

With some of my clients with autism, my therapy dog helps them to want to communicate verbally. She is used as a reward or clients can practice words with her. She "plays" games with clients. I used her in a variety of ways depending on the client and the needs.

Work with a social worker who brings her therapy-trained dog to pediatric clinic. While waiting for testing, the children can play with the dog and if a child is nervous about testing the dog can come into the testing room.

Worked on the use of prepositions by having the client give a dog commands to go in his crate, sit next to his crate, sit behind his crate, or sit above his crate.

Worked with children with autism and Down's Syndrome in conjunction with SeaWorld. Basically, it was a behind-the-scenes educational program for the children to learn about and interact with the marine life.

Working with a child (7yrs old), I brought my small and docile dog to therapy with us in an attempt to engage him in appropriate communication. My dog gave us a tangible topic to discuss. We also went for walks, allowing the boy to engage in real time communication with other children and adults while on the walk and once in the nearby park.

Working with individuals with aphasia and TBI: Verbal Expressive tasks, commands to animal (dog).

Appendix G:

Responses to question 10: In your opinion, what types of communication behaviors might be positively impacted by using an AAT-specific approach? (*Remember that AAT is defined as a goal-directed intervention in which an animal that meets specific criteria is an integral part of the treatment process.*) Please list 1-2 communication behaviors.

Note. The responses shown were taken directly from the Qualtrics™ software and were left unchanged from their original condition in which the participants entered them onto the questionnaire.

ANIMAL-ASSISTED THERAPY

Verbal language / Following directions

Initiations and reciprocations / increasing utterance length and type

Vocabulary building / Syntactical structure drills

1. selective mutism / 2. pragmatics

Language production/initiation / pragmatic/social language

Stroke patients with aphasia. Apraxia, etc / Pragmatics/sequencing / All would be appropriate if used ethically

Mostly focused on eliciting behaviors in a more consistent manner. Developing more initiation of a communication skill.

Social interaction / Language comprehension

Initiating interactions / Requesting continuation of desired activity

Initiations / Narrative

Overall spontaneous vocalizations.

Not sure. Never used it or considered it before your questionnaire.

1. increase use of single words and short phrases to request objects or changes in activity / 2. maintain focus on structured speech and language activities for increasing lengths of time specified in goal objectives / 3. increase willingness to demonstrate receptive vocabulary and language abilities as measured by probes and periodic formal testing / 4. increase willingness/ability to follow verbal directions as measured by informal observation and periodic formal assessments

Increased eye contact / Increased directed language

Cognitive-communication, social communication, verbal expression (language and speech), auditory comprehension

Language development for children, ASD, TBI: use for speech/language development ("nice dog", bow-wow, grrrr, etc), sequencing (to walk a dog, first we put on the collar, then the leash, then we go outside, if it poops, we have to clean it up, etc), turn-taking (you pet the dog, then I'll scratch his ears, then you can make him sit, then I'll make him roll over), problem-solving (what would you do if your dog started throwing up? What would you do if it cut its paw? What would you do if you thought it drank poison?)

Expressive language and articulation

Increased verbal communication / Eye contact / Socialization / Empathy

Speaking clearly/loudly so that the animal would be able to "understand" the command.

Interaction / Pragmatics

Motivation to follow a directive or sequence / Instruction in verbs usage / Social communication-positive self imaging / Narrative development /

cognitive-linguistic

Decreasing stuttering by practicing speaking to animals / Increasing carryover with aphasia by practicing with animals

As long as the client isn't frightened by or allergic to the animal, use of an animal is appropriate for any communication situation from babbling to dementia. The only thing that would potentially vary from patient to patient is the amount of the use of the selected animal.

/ Conversational turn taking / Initiating a conversation / Using greetings/closings / Eye contact / Joint attention /

No idea

Vocal initiation / Expanding expressive language

ANIMAL-ASSISTED THERAPY

As indicated on previous questions, I do not have experience using animals in treatment. This is only an opinion on the spur of the moment. Expressive language - talking to an animal to express feelings or tell a story.

Fluency disorders, including cluttering and stuttering, childhood apraxia of speech, speech sound production disorders, language impairment.

This was not a part of the practice I described. / / If I was at a facility that could support AAT, the AAT could be used to support a variety of goals related to joint attention, non-verbal communication, inference, planning and sequencing, telling how, following directions, etc.

Animals might be good in helping a client to regulate executive functions like attention, motivation, and emotional regulation to focus language therapy. The care of the animal might provide topics for language interventions as well. Animals might also be good for helping clients, particularly diagnoses like ASD or TBI, to be aware of things outside of themselves.

It may provide motivation to speak if client is non-verbal

Speech and language initiation / Fluency

initiation and interaction skills, thinking of the ASD population / ambulation and fine/gross motor skills, thinking of the orthopedically impaired and stroke population

increased language communication / pragmatic empathy

I am unfamiliar with AAT; however, it seems that any communication behaviors involving motivating someone to talk might be a category. Since adults and children often use "infant directed speech" with animals it might encourage spontaneous verbalizations.

Vocabulary, Syntax intervention / Pragmatics / Speech articulation if the target sounds could be integrated into the interactions

Interaction with the therapist; language

Increase MLU or verbal output, teach new vocabulary

Producing increased expressive language output, including increased utterance length and novel, context specific vocabulary.

Dealing with anxiety (stuttering), severe language impairment (feelings of isolation or not belonging), aged patients

Selective mutism / Developmental language delays

Initiation of verbal utterance / / Formulating and expressing utterances

Increase in language skills including overall use due to increase motivation. Increase attending and social skills

Learning to give commands / Learning to make requests / Learning to comment / Learning to use the communicative function of calling

Improved social interaction/pragmatic language benefit / / Improved language function

None.

Verbal Expression: increasing volume, giving directions, describing the dog (4 short legs, 2 brown eyes)

nonverbal- eye gaze, attention, turn-taking, joint attention / / verbal exchanges - synthesis/decoding exchange of language. ie. give a command to the animal that it follows through on. /

Practicing giving dogs commands. Using an animal to practice social skills. Teaching a parrot to talk for artic/dysarthria.

pragmatic language / functional communication

ANIMAL-ASSISTED THERAPY

Promoting Verbal Expression including frequency of production, vocabulary/word retrieval and expansion of utterance. / Improving Cognitive Skills including sustained attention to task, divided attention, initiation and task transition.

pragmatics / language /

Language development / Speech development

Since I work mostly with clients with voice and breathing disorders who have ALLERGIES I would not use any animals. You should have had NO ANIMALS as a choice

Would be good for establishing joint attention, vocabulary building, and following directions.

Increase requesting

Initiation and engagement of speech production . Phrase level of communication for basic commands to increase speech production.

Eliciting meaningful vocalizations from nonverbal clients / / Increasing confidence in communicative exchanges and/or on reading

Cause/ effect communication

I do not believe that this is an appropriate method for treating individuals with communication disorders as there is little to no research that indicates it is effective.

Joint attention, seeking help from other people, basically linguistic precursors

Improving social skills, attention/concentration, sensory integration issues

1.non-verbal interaction / 2. Expressive language, whether oral/vocal, signed, or augmentative

Giving one-to-two word commands to an animal to work on language production following stroke. / / Working on executive functioning following brain injury by performing daily care activities for an animal.

Reciprocal "communication", executive function-planning, flexibility of thought, attention, memory

Spontaneous communication and joint attention, motivation to participate in therapy activities that might seem rote or challenging for student, relaxation and confidence building

Requesting, commenting, joint attention

shyness and/or selective mutism, ASD, late talkers, language delays or disorders.

I am not certain. I have never considered using animals but I do believe for young children it can help with language skills.

increased verbal output

language stimulation techniques / use of spontaneous social communication / pragmatics /

I see AAT as a motivational context for communication behaviors. As such, I don't see many limits to the types of behavioral (communication) goals that can be developed.

Oh gosh. I cannot narrow this down to one or two areas. I think all areas of communication development, any speech or language goal, could be positively impacted by AAT. I could work the animal into anything, and I think it would be very positive. I think one very strong area that is the most challenging for me to get past for some of my most hard to reach students is motivation. An animal is there, caring and not judging, and I think adding AAT would help in many cases. It is difficult to make progress with students who are not motivated to do so.

Conceptual vocabulary category skills; Expressive/receptive verb skills;

Fluency-speaking to animal May not be as intimidating as a person / Language- early language acquisition, any language acquisition / Artic- carryover outside of regular therapy session using spontaneous verbalizations / use of descriptive language

Aphasia fluency

ANIMAL-ASSISTED THERAPY

Motivation

ASD: emotions and perspective of others

attending, vocabulary expansion

1- increased motivation to attempt expressive speech, in clients frustrated by aphasia, language delay, or stuttering / / 2. enriched language (description of animal and its behaviors)

1. increased communication attempts - more frequent vocalizations / 2. improved rhythmicity of speech / 3. better trunk control and breath support for speech /

purpose or motivation to communicate / use of spoken words, signs, or gestures / voice loudness / language comprehension / sentence formulation, oral grammar, increased MLU

speech.....eliciting fluent speaking behaviors that may otherwise be impeded by neurologic impairments such as TBI, aphasia, ASD, etc. (& including motor impairments such as in dysfluency or apraxia) Just like a person who stutters may have success singing, or a person with aphasia may be able to fill in word pairs (ie: salt & ____) I would anticipate the use of animals may elicit such instances of speech. I would not expect it to improve articulation or dysarthria (except maybe for client motivation & attention purposes)

Increase in verbal production

Language

communicative intent, socialization, problem solving

Running away

I have never done this and am not familiar with the literature, so I can't say.

Any language related diagnosis. / Autism

Pragmatic / Aphasia

Improved verbal communication might be positively impacted as well as pragmatic language-turn taking skills; improving language skills- follow directions, improving ability to show how to take care of an animal- daily living skills. /

Desire to communicate / Overcoming communication inhibition

Turn taking, increased verbalization, increased facial expression, expansion of emotional expression and so forth.

utterance formulation (syntax) / narrative generation /

My 87 year old mother resides in a dementia care facility where volunteers bring in pets, mostly dogs. I have been able to watch the residents (40-90 years of age with severe dementia) interact with the dogs and the impact upon the residents is almost always positive. Usually there is more speaking observed in this activity and the residents will calm down and seem more focused.

Articulation- practicing commands containing target sounds / / Fluency- practicing using fluent speech with assistance animal before practicing with humans

Form, Content and Use. Technology has its place. AAT has the added bonus of helping our interact within their environment, families included!

to request spontaneously and to increase making eye contact

Functional.pragmatic social interactions

Naming / / Conversation patterns / / Commands

Initiation of communicative interaction / turn-taking

Using language to direct the animal. / Using language to talk about or to the animal.

I have noted used specific goals, but could imagine using to help my children with expressive language issues and/or CAS to encourage use of power words (e.g., come, go, no)

1. Individual with autism-petting the animal would be a good sensory experience. / 2. Child only using gestures, though able to speak, just is rarely doing so.

Receptive skills / Sequencing /

Autism spectrum verbal response /

Social communication skills (e.g. Greetings, introductions, giving directions); expressive language skills (e.g. Explaining to someone about the animal)

Artist and developmental disabilities

autism speech characteristic / aphasia - difficulties producing speech

Verbal sequencing / Linguistic memory

Initiation of verbal communication & use of non-verbal communication, / Attention & executive-processing

Patient could use choice board to determine trick and subsequent treat

Language Development by encouraging participants to communicate with the animals.

Selective mutism- which I've had success with in the past using animals / Those with non functional communication and limited communication

words and phrases /

selective mutism, verbal apraxia

Vocabulary, receptive and expressive language, pragmatics / / Vocabulary through descriptors /

Receptive and expressive through increasing length of utterance and use of correct sentence structure / pragmatics and receptive through following instructions and learning appropriate social skills and consideration of the thoughts and feelings of others (including animals)

Speech or language delay and working on social language

Receptive and expressive language and pragmatics.

Fluency / Mutism

Calling out commands (intelligibility and intonation) /

Communication directly with the trained animal, including gestures, words and sentences. /

Turn-taking and attention in a small group setting.

I am in private practice and the office environment is very unnatural for conversation. Using my dogs I am able to address generalization goals for speech/language/articulation to a more natural context. There is also a large amount of receptive language and sequencing/following directions as the client needs to understand and follow rules for how to treat the dog and behave when she is involved in the session.

I only work with adults, so receptive/expressive aphasia, TBI cognitive rehab

Spontaneous speech / Naming activities /

Describing/comparing the feel of animals and the actions of animals - Language development. /

Using animals as a practice audience/communication partner for clients with dysfluency or selective mutism.

anti-social / uncommunicative

Social-pragmatic skills

1. Child will initiate a word or sign to tell the horse to "go." / 2. Child will follow a one step direction (brush the horse's neck, back, etc).

1) attention / 2) readiness to learn

Great motivation for learning vocabulary, using expressive language, and following directions (how to handle the animal.) Specific to riding a horse, positively engages the rib cage and core muscles for better head/neck positioning, freeing the back of the tongue and improving speech

ANIMAL-ASSISTED THERAPY

articulation and intelligibility.

1. Having client give the animal a command with gesture or word/phrase to get the pet to do something. The therapist can help cue the pet to respond to it. / 2. Let the client decide and request what to feed the pet (and what is appropriate) then they can help feed it. / 3. When feeding the pet the client can follow a visual schedule of what to do first with steps to help them organize the task and break it down.

Improved willingness to participate. Reduced self-consciousness.

1. Calming: I currently work with a boy who is very 'up-tight' about practicing saying the /r/ phoneme. I have written a social story with him which he reads before we practice: relaxing, staying positive, etc. are objectives for him. If he could be distracted by grooming an animal or practicing with an animal---these methods could help him achieve his speech goal.

tone of voice, inflection, gestures, Arctic., naming, use of nouns/ etc., one word commands with intended result (cause /effect).

Learning to socialize in a different environment, Increasing more varied use of language(i.e. protesting, commenting, etc.)

Automatic responses / Increase attention and participation / Decrease depression which can reduce participation and increase responses

Autism, brain injury, aphasia

1. Increase use of spontaneous utterances by children who are otherwise reticent to speak to adults

expressive language

functional language (pragmatic skills) / apraxia /

?

Articulation and childhood apraxia

Stuttering, delayed language development

Eye Contact / Expressive Language

Increased verbal/expressive output. / Increased attention and initiation of interactions.

1. Initiating. / 2. Reciprocal behaviors.

requesting / directing another person/animal

Auditory comprehension, expressive language (especially helpful with training AAC), cognitive linguistic skills such as sequencing, problem solving etc

Selective Mutism; Autism; Apraxia; Dysfluency; Mixed Language Impairment; Articulation Disorder; Cognitive Disorder

initiation / responding to animal's initiation

Stuttering when excited... Many children don't have pets and when they see an animal they get very excited and began to stutter. The animal could be used as a stimulus for the stutter too then teach management techniques for stutter / / It can be used to teach body parts and adjectives (examples pointy ears, short tail, Long nose) to children

initiations / reduction in glottal attacks / communicative intent

1) Enhancing turn-taking, when the patient is interacting with or about the animal / / 2)

Improved motivation to converse, (about various aspects of the animal - texture, color, size, etc.)
motivation for participation

Vocabulary building, phrase and sentence length, written language, discourse, there are nearly countless goals

ANIMAL-ASSISTED THERAPY

1. Interactions with animals may prompt spontaneous utterances from patients as it may revert them back to a time associated with a loved pet of their own. / 2. Many children, especially inner city children, would acquire vocabulary / 3. cognitive functioning such as cause-effect (moving too fast will scare the horse), positive v negative reactions the animals may have to the clients physical actions (edible reinforcement will encourage the dog to shake hands again).

1) initiation of and sustaining communication / 2) naming

Spontaneous speech, attention, language development, sequencing, memory, problem solving

Joint attention /

1. Improved fluency / 2. Increased expressive language / 3. Increase expressive vocabulary
any goal could be worked on

Language delay / apraxia of speech / autism / dysfluency /

Indicating wants and needs; Following directions

Word finding, articulation

Expressive lang, with aphasia & social lang with ASD

Receptive and expressive language for vocabulary, giving and following verbal directions, fluency/rate of speech by reading to animal, positive behavior changes due to calming and individuals, joint attention and social reciprocity in animal play, increasing input from multiple senses when riding an animal. Just to name a few. Lots of possibilities.

Increased utterances, increased MLU, following directions, conceptual knowledge, phrasing, memory/recall, vocabulary growth.

1 - Fluency (i.e. - pacing while petting an animal) / / 2 - Word finding

Providing directions / / Verbalizing feelings

Following directions, using words gesture to request

Word finding, language acquisition,

Expressive language deficits, attention impairment in TBI

Increasing MLU / Articulation/Intelligibility / Narrative/story telling

Improved eye face and body orientation / Increased initiations

Expressive, social pragmatic, following directions

Expressive language including semantics and syntax

May influence more spontaneous language use. Provides comforting setting to practice skills. Calming for sensory seeking behaviors.

Increasing verbal output such as helping the child to understand the power of words. Improving speech intelligibility so that my dog will follow their commands

Stimulating language in a reticent speaker -- "Tell the dog where to go." / Descriptive language skills -- "What is the dog doing?"

Increased desire to communicate- especially with younger population / Basic social/pragmatic skills

Requesting and protesting / Initiating communication

different communicative intents e.g., giving directions, commenting, protesting

Initiation / / Fluency

Motivation to speak because of the nonjudgmental role of the AAT

Articulation, language.

Limited verbalizations in Language Delay.

This is a completely new area to me. I do not have any knowledge within this area.

Vocabulary and sequencing skills.

ANIMAL-ASSISTED THERAPY

I have heard that children are more motivated to read to a dog. I think it might be helpful for articulation if the client gave specific commands to the dog and if they production was accurate, the handler would give a hand signal to the animal, rewarding the client for the accurate production.

pragmatics, receptive/expressive language

Autism and fluency disorders

language delay, social/pragmatic language disorder

Increasing intelligibility - /k/ for come, for example; reading to a dog for motivation; increasing overall communication with a non-threatening partner (animal); recollection of memories for a person with aphasia if they have previous fond memories of pets; etc...

Asking a dog to sit / Demonstrating impulse control by petting the back of the dog and not the face / Describing the appearance of a dog or the feeling of its fur

Stuttering / Facilitated communication with reduced secondary behaviors (ie flapping of hands) in child with ASD

social emotional

social language / expressive language

pragmatic language / cognitive-communication

1 - Have the patient use the correct sounds in producing the animal's name / 2 - Have the patient greet the animal appropriately using Hi at the door

Spontaneous use of expressive language (requesting, commenting, questioning); a wider range of emotions and body language; willingness to work on specific articulation goals; receptive language (following directions, sequencing skills); relaxation and breathing for fluency.

1. Increasing expressive language use, including using fully formed questions and/or making requests / 2. Vocabulary, especially in relation to my own special needs animals

Initiating and turn taking interactions with another / Vocabulary development /

Initiation and practicing of communication acts in a less stressful environment

Autism / Cognitive issues

pragmatic language skills

Spontaneous speech, expressive language, receptive language

Since I work with kids with autism, I could see using ATT to encourage my students to request time with the dog, ask questions, and interact more with me.

Joint attention / Expressive language

I have seen animals used in therapy for goal attainment by my allied health therapy peers, e.g. OT and PT, but have not personally seen AAT used by SLPs. I work specifically in the adult neurogenics population; seems to be more natural applications with some of the other disorder areas, e.g. social communication in children and adolescents on the autism spectrum.

Initiating appropriate behaviors and language, topic for language interactions-receptive, expressive, and written language.

communicative intent, reciprocal communication, expressive communication, and motor sequencing.

Improved level of alertness, increased participation, word finding

social / pragmatic devices - / literacy

Autism. Behavior. Apraxia

increase in expressive language /

ANIMAL-ASSISTED THERAPY

Elicitation of words and phrases to "tell", to "show" (as in saying "look! this is a____!" or "look at this!", to make comments, to request or give a command (as in "Come here" or "bring me the ball" or "go get the ball"), to elicit question forms such as "what are you doing?" "where is the____?" possibly to elicit conversational turns at a level of vocalization, single word, or phrase, possibly to elicit eye contact with a cat or dog. To elicit descriptive words such as "pretty, soft, small, big, color words. To elicit action words such as "brush, wash, dry, hug, pet, kiss, listen, watch, purr, meow, bark, growl, hiss, run, sleep, climb, scratch..." /

Increasing the amount of language and the time a child will attend and talk (language). / Increase number of initiations (language).

Communication behaviors that can be positively impacted: / 1. Use of new vocabulary in a meaningful context / 2. Use of accurately articulated words in activities of daily living / 3. Comprehension of and memory for multi-step direction following / 4. Language processing for story retell, verbally or in writing

People with aphasia often speak more with animals than with people in part due to the decreased demand to participate/communicate

Increased verbalization in the non-verbal individual / Increased sequencing/following directions
-Increasing motivation to communicate for children with ASD / -reducing anxiety for children with ASD / -developing conversational skills for children with ASD / /

Using voice commands addressed to the animal. / Using physical interaction with the animal to improve physical mobility of the patient's arms and legs.

Initiation of verbalization for an individual with apraxia as the animal could respond and follow commands but it takes the "communication pressure" off the individual. / Increased vocal intensity as the individual would need to speak loud enough for the animal to respond to commands.

Descriptive language, listing attributes

motivation for communicating increasing / confidence in communication

Reading out loud to a dog. This would be a low-stress way for a child to practice reading fluency. / / A child uses language to give a trained dog commands (ie. sit, shake, etc) / /

Utilizing age appropriate syntax and structure when providing 2-3 sentences including descriptive features about the animal. / / Improving direct communication and reciprocal interaction with peer/adult regarding animal

There is not a disorder that I wouldn't use AAT. I used Boomer with a client who was working on /s/; she had a lisp. I showed her Boomer's teeth and how he kept his tongue behind his teeth. I have found that Boomer provides a calming effect to children who have difficulty with attending and are active.

Vocabulary expansion, motivation for communication

Initiation / Retelling

teaching interaction or turn taking skills / / Giving directions

To increase language and language use. Cognitive goals. Use of an AAC device.

Initiation of communication. / Heightened interest in communication.

1) many types of social interactions; conversations with the animal; commands/directions for the animal to complete / 2) retrieving different therapy materials when directed to by the client using the name of the object..good for aphasia practice and common noun labeling for cognitive/language impaired

mlu, intelligibility

ANIMAL-ASSISTED THERAPY

Pragmatic disorders / Language delays

Pet will be used to assist patient / / As a reward / As a way to keep patient motivated calm on task / Patient will give 1 step directions/commands to dog / Patient will walk iguana resulting in opportunities to greet people in community / /

Following direction / Social skills

Increased language output. / Articulation.

Initiating interaction / Requesting objects (e.g., a brush to groom the animal) / Requesting actions (e.g., can I walk the dog?)

Many communication behaviors may be increased with the use of animals; especially initiating, requesting, commenting, retelling, reading to or with etc.

1. Aphasia-motivating clients to speak by having dog obey one-word commands like "sit," and "stay."

Problem solving / Non-verbal receptive skills / Fluency / Scheduling/self regulation
syntax, social communication

Eliciting language or triggering memory. Increasing attending behaviors. Behavioral support for developing pragmatic skills and executive functions.

pragmatic behaviors, social skills, language skills

Socially appropriate language / Following directions without prompting

Expressive and receptive language, including pragmatics / Articulation / Auditory skills / fluency

Smooth easy speech / Vocabulary development / Accurate articulation /

AAT may reduce anxiety regarding therapy

Following directions in terms of animal care, discussing animal characteristics and relating experience with animal to others

pragmatics / problem solving / vocabulary/mlu

Individuals who appear to have difficulty interacting with people

Expressive speech & language, pragmatic language

expressive language

Expressive language, Articulation

initiation, expressive language

verbal output / communicative confidence

I would expect increased eye contact, increased attention, less anxious behaviors, better communicative intent.

1. Expressive language (request/comment/vocabulary) / / 2. Expressive language (combining words)

I think animal assisted therapy is relevant for all

Taking turns talking to an animal and other people. / Engaging in play activities with an animal and people.

joint attention / initiation /

Enhance motivation to perform a task and/or communicate / / Empower the individual to be responsible for an animal

Requesting objects, requesting actions, differentiated vocalizations, initiating, turn-taking, increasing intensity of speech

Spontaneous language production / Articulation skills /

Spontaneous language. / Memory and cognition.

Initiation of communication / Turn Taking

ANIMAL-ASSISTED THERAPY

Animals are engaging and calming

appropriate social skills / fluent speech

Giving the dog commands to follow; describing what the dog is doing

Giving commands (to work on MLU or related language goals) / Describing attributes or actions

Spontaneous talking. Calming autistic children

Autism TraumTic brain injury Aphasia

Social communication - reciprocal conversation, taking someone else's perspective, sharing an imagination /

Expressive language--improving MLU by producing appropriate modifiers. / / Describing what the animal is doing. / /

Increased verbalization / Increased social/pragmatic language function / Motivation to communication (i.e. increased communication intent) / Language/Cognitive therapy (e.g. direction following, command following, memory/recall)

1. Increase frequency and complexity of utterances. / / 2. Create a relaxed state conducive to improved speech, language, voice or fluency output. /

The impact of language over an environment.

Increased verbal output. / / With non-verba studentsl, more attentive and better joint attention.

1. Having an animal "listen" to a child as they use target sounds or language structures. / 2.

Encouraging a client to use their fluency-enhancing techniques while speaking to an animal.

increased language skills to express / decreased negative physical behaviors

Fluency / Literacy / Children have been asked to read to dogs. / People have been asked to practice fluent speech with dogs and other animals.

expressive language for autism spectrum disorders, fluency and developmental language delay. / / any disability in which carryover/generalization of expressive language is desired.

definitely the attention span to task and motivation to communicate would be increased

Vocabulary

Spontaneous speech attempts / Eye contact / shared interests

Voice patients: using a loud intelligible voice to call the dog. using intelligible speech to say commands to the dog.

Articulation, voice, fluency, expressive language

Eye contact / / Directions to give animal, or comprehend directions given by therapist. / /

Posture and respiration

Following multiple step directions w basic concepts, joint attention and establishing conditioned response

For those who enjoy animals, or most any child without negative experience with animals, they certainly would assist in levels of comfort, eliciting responses, or attempts at communication when otherwise may be intimidating.

I think it would help as a reinforcer for communicative behaviors such as inititating and responding by either word or sign. I have also heard that children will often verbalize with animals when they don't do so with peers or adults.

withholding speech

Pragmatics / Following simple directions

ANIMAL-ASSISTED THERAPY

Any difficulty with communication that would benefit from relaxation in order to facilitate functional language or expression, such as autism or trauma causing lack of verbalization. / Any difficulty with communication that would benefit from motivation brought by the love and compassion for animals, such as aphasia or a client not responding to or burnt out with traditional treatment.

Joint attention due to the calming effect of the animal

Task initiation, task maintenance

In pre-language development, engagement and intentionality could be targeted. With a child with vocal nodules practicing calling a cat or dog using easy onset voice could be targeted. In early developing language and speech a horse would be an opportunity to share meaning around brushing and feeding.

improving expressive language output, the presence of an animal may heighten a child's motivation to speak about the animal, toward the animal, etc. / / narrative retell, given the exciting nature of the experience it would be a good way for the client to have something to retell the experience.

Initiating requests. / Getting someones attention. / Requesting an item /

pragmatics, expressive language

1. Initiation of interactions / 2. Expressive Language Delay

taking another's perspective and taking risks with communication

A desire to communicate. Increase eye contact and social skills.

I really don't know. I don't have much experience with animals, but if I truly thought AAT would help. I might try it. I wouldlike to see efficacy research on it. I only treat Adults which is why I chose that age range, but I could certainly see how it might be interesting with children.

Adult aphasia/apraxia to elicit automatic verbalizations used prior to their cerebral event. / To encourage and expand communication in cognitively delayed individuals. / To encourage verbal & social interactions with individuals on the autism spectrum.

Interaction, fluency, initiation, expressive language, articulation

Could help and give client confidence

giving directions, increasing volume, sequencing, trouble shooting, visual patterns, stress release for fluency

Vocal production. / Improved expressive language.

reciprocol interaction. / following a sequence/ routine

Social interaction / Receptive/expressive language

Pragmatics MLU, reinforcement schedules

Many patients could benefit from this type of therapy whether it be pediatrics or the adult population. It would be beneficial for a variety of patients that may have autism or CVA.

Encouraging patient to use words to request animal. / Follow directions regarding animal.

increased initiation of expression / increased speech fluency

Word retrieval and narrative skills.

Attention; direction following; naming body parts; automatics while brushing dogs coat

Don't know

Following directions / / Increasing expressive utterance length

Language acquisition / Behavior modification /

Language delay / Articulation disorders / Apasia

For language, one could teach descriptive words such as soft, long, short, big, little. / /

ANIMAL-ASSISTED THERAPY

1) Using vocal commands or signs in order to interact with animals for specific behaviors. / 2) increased pragmatic functions (ie: eye contact, taking turns) / 3) increasing an individual's ability to use an AAC device or environmental control device. /

Hjg

1. Expressive language / 2. Aphasia

motivation, functional purpose

1. requesting / 2. describing

Verbal expression, attention /

Vocabulary and grammar/syntax could be affected as the student learns about the animal and it's care, etc, then uses language to participate in activities with the animals.

Turn taking / Requesting

Greeting an animal appropriately and consistently / Following directions to properly care for an animal / Training an animal using approved techniques and then writing or speaking about it

Initiation/turn-taking (physical) / expressive language - gestures and/or words

1. Turn taking with the animal / 2. Understanding basic commands that they give to the animals

Requesting. Commenting

naming / making requests

Interest in social communication with the animal / Shaping speech and language goals for carryover /

Verbal expression, auditory comprehension, increased motivation to complete any tasks

Reciprocity / Increasing verbal practice: articulation, voice, prosody / Engagement / Problem solving

1. Giving commands / 2. Making descriptions / 3. Labeling / 4. Conversational skills / 5.

Greetings / Social Introductions

No response

Not sure

1- expressive language - describing , increasing mlu / 2- receptive language- Following directions

Social/Pragmatics Skills /

develop skills in clients who demonstrate a paucity of language / /

1) Expressive and Receptive Language Development / 2) Articulation and Phonological Development / 3) Social Communication Development / / This is a confusing question. I don't differentiate an AAT specific approach from my regular, non AAT approach to therapy. I use all of the same professional skills and target the same types of goals and objectives. The animal is only a means to an end for the therapeutic target. I work on all of the same communication behaviors in both of my therapeutic approaches. I think what I'm saying is "all communication behaviors might be positively impacted" just as if I was approaching therapy without an animal.

Mlu

Expressive language disorders / Stuttering

Mentioned previously

Pragmatics and Expressive language

I don't know.

General language stimulation /

ANIMAL-ASSISTED THERAPY

1. Learning to greet someone. Suzy gets upset if the kids don't acknowledge her when they come into the therapy room. She also expects them to say goodbye as they leave. She will bark if ignored. She gives kisses when they acknowledge her. Kids learn quickly to do this. Then we generalize to other people. / 2. Very shy little kids who don't want to talk or non-compliant to test- I tell them to talk just to Suzy; they realize she is not judgmental and will often comply so I can complete the task.

Increased MLU, increased variety of communicative functions

Initiation of verbal/vocal speech communication / Increased use of expressive language skills (vocabulary, sentence structure)

1. Calming student / 2. Turn taking

Motivation

Greeting / Making a comment / Making a request / Negation

Nonverbal aphasic

1. speech production / 2. turn taking

Attention and focusing / / Appropriate response, i.e., sound production.

Social communication / Language disorders

All communication behaviors could be positively impacted by AAT if the client has a desire to be with the animal. One wouldn't choose to use an animal in therapy except that it was requested by a client (or caregiver/parent). The therapist has to be knowledgeable of the animals' abilities and the clients' disorders, and match them in some way to create the optimum therapeutic environment.

Initiating social communication/interaction /

Increased verbalizations including specific words / Sequencing

ASD / CI

Spontaneous utterances/phrases. / Fluency of utterances. / Motivation of the client. /

Requesting information / Responding to needs/wants of another

Functional communication providing commands for the animals to follow / Providing soothing comfort to patients experiencing anxiety or end of life loss

I'm a seasoned Speech Pathologist "(Speech Language Pathologist" is an abhorrent aberration of the language we purport to be experts in). Some would say "old". I have provided direct treatment services as an independently functioning, certified speech pathologist, for 42 years. I have never used any animal assisted treatment approaches and don't intend to. That having been said, I can appreciate the possibility that such creature interaction may persuade responsiveness in some patients.

I don't think using animals of any kind is appropriate.

Autism spectrum in working toward social behavioral communication goals / / Fluency goals in social emotional and self actualization goals focusing on personal understanding of the communication process as a personal responsibility not affected by listener reaction. I love this idea!

Calming affect. AS the animal is calm the client seems to emulate that behavior. I have used animals within a high school setting to alert students to pay attention and to navigate to their next class.

To increase fluency in students/clients that exhibit stuttering characteristics

Initiation / Repetition

AAT may help with socialization and pragmatics. May also benefit those with sensory disorders.

ANIMAL-ASSISTED THERAPY

cause and effect. eye contact, body awareness, social communication, non-verbal interactions and nonverbal language. / turn taking. expressive language, mlu.

1. Positive environment / 2. Attentional focus

Pragmatic language skills / Articulation/phonological processing skills

Commenting / Requesting

Don't know. I am allergic to many animals (cats, dogs, birds, etc) and I am not fond of many others especially the reptilian kind so honestly I wouldn't consider it. I get AAA part of it and its positive use for those that are fond of animals and how it can enrich someone's daily life or recovery, just not familiar with the AAT part unless you are training for a particular life skill.

I could easily tie working with an animal in to therapy to work on following directions, following a sequence of events, conversation skills (some will speak to an animal more readily than another person), articulation in that commands would need to be given clearly for the animal to respond as the client desired, and the client could work on voice in regards to speaking loud enough to be heard by the animal at different distances or to speak quietly enough to not startle the animal.

Improve fluency by talking to an animal / Understanding and Following directions

Increased verbalization / Joint attention

I don't feel I have sufficient experience in the area to comment.

Making requests either verbally or nonverbally (e.g., requests to pet, feed, walk, ride animal, etc) / Produce gestural or verbal commands to the animal (e.g., come, sit, etc) / /

n/a

Gesture a command to the pet to sit. / Verbally tell the pet to sit

Eye contact / Joint attention / words

Initiation and and requests(pragmatic language skills), body language, facial expressions, and tone of voice.

social language, expressive language

1. Using more expressive and socially involved language / 2. Improving memory and listening skills

Theory of Mind/perspective taking /

Basic communication functions (e.g, requests, protests)

To work on self regulation, staying connected, awareness of self and others, and to expand language for describing, asking questions, and exploring emotions.

Spontaneous utterances and conversation / / Problem-solving activities

Initiating verbal and gestural interactions / Responding to the behaviors of the animal.

Reduction in anxiety while speaking: ex. Fluency enhancing / Joint attention & social interaction / /

Initiating / Turn-taking

Increased utterances, increased conversation turns on topic, asking and answering wh questions

Autism, language, cognitive and developmental delays, fluency, behavior disorders, social-pragmatic language

Social interaction / Stuttering decrease

Initiation, relaxation, rote practice

Pragmatic language/social skills, expressive language

Spontaneous communication / Increased length of utterance / Pragmatic language: eye gaze, body positioning, reciprocity

ANIMAL-ASSISTED THERAPY

increasing verbalizations with children with Autism / promoting fluency with those that stutter
Language / Speech

Attention /

expressive language

Pragmatic/Social Language disorders / Cognitive disorders

any expressive communication behavior

If working with animals is a positive reinforcer for the patient all communication behaviors might be positively impacted.

1. Spontaneous communication for someone with emerging language skills / / 2. Targeting fluent speech when speaking with animals versus people.

verbal expression; sensory stimulation

Eye contact / Expanding utterance length

articulation, apraxia, fluency, receptive/expressive language, cognitive impairments, memory, wordfinding

expressive language, speech, cognitive rehab, emotional wellbeing

Language development, improving speech fluency by communicating with an animal, word retrieval in clients with aphasia

Giving directions/command to animals such as dogs provides a child with an example of how powerful language is. / Describing feelings /

vocabulary development (receptive and expressive), following directions,

Giving the animal commands. Following directions

eliciting language or speech

Calling from a distance. Projecting.

I do not know enough about AAT to say which behaviors may be positively impacted by its use.

Expressive language goals: Increasing MLU and developing morphosyntax skills / / Pragmatics: turn-taking, perspective taking, eye contact/tracking

Comprehension

1. spontaneous speech during a session by a person who has an expressive language delay / 2. participating during a therapy session by a person who typically demonstrates decreased participation and or decreased motivation to participate in a treatment session

rate of speech, decoding

language production

Spontaneous speech production / Increasing variety of word structures in conversational speech / Producing target words/phrases

Severe stuttering behaviors where the animals do not add stress/pressure / Non verbal clients

Communicative intent, conversation initiation, enthusiasm

Sharing feelings and sharing past events

spontaneous communication; requests; social skills; really the possibilities are endless

Pragmatics...greetings, tone of voice, personal space, / / Language and cognition...conversation skills, vocabulary, sequencing, humor, multistep processes etc.

Expressive language delay, lack of functional communication or non verbal

Increase use of verbal syntax skills. / Following and giving directions. /

1. It could give the client something to focus on rather than on their particular disability, and make communication more natural and functional. / 2. It could be a good way to introduce vocabulary and its' use in conversation and dialogue.

ANIMAL-ASSISTED THERAPY

Class pets have had a positive affect on most of my students, other than those who had fear toward a particular animal. I had an IEP goal for increased interactions for a student with Autism. He had social scripts he practiced first with the class bird. / / I have used the reading dog for fluency and language. All very successful interactions. The National Abilities Center uses hippotherapy and have great success. I have many students who use their services as well.

Pragmatics

Social language / Spontaneous language

I believe this approach would be beneficial to those with fluency disorders and any neurological disorders including dementia.

Reduced tension in a vocal abuse patient / Distraction as a method to reduce apraxic speech

Eliciting language / Eliciting speech sounds

Motivation for expression

The child will respond to the cat's rubbing up against him by bending down to pet the cat. / The child will give the dog 5 directions independently reinforcing compliance by the dog with a treat.

> open "circles" of communication - pt may be able to verbalize in presence of animal when he/she cannot w/ people / > provide pt w/ an experience that they are excited about so they talk about it - also enhanced emotion/engagement could support long-term memory for re-telling

Increase in social interactions reduction in anxiety / Increase in vocabulary

I do not know

Pragmatics and expression of emotions

...

requesting / commenting

1. Demonstration of more motivation to speak directly with increased initiation, less hesitancy or anxiety, with the therapy animal than direct communication with the therapist (SLP) / / 2.

Provides an atmosphere of unconditional acceptance for the disordered speech to be spoken so that further therapeutic techniques can be designed to address speech or language issues that the individual is reticent to address due to the stress or embarrassment their experiencing brought on by the medical condition that has altered their life. /

Tantrums due to frustration not being able to get across wants and needs /
initiations, referencing, promoting conversational dialogue

Transitioning without incident or abandonment from one room to another within the home or a facility.

engaging in conversation-pragmatic skills (Autistic/Apraxic students) / use for a calming for those that become very frustrated with their communication skills / / ****I only work in the schools with children 3-18/21 / I believe there would be lots of red tape to use an animal in the schools.

Language disorder, fluency, literacy, articulation, early intervention.

Increasing length of MLU, sentences / Increasing intelligibility of sound productions

Increased expressive language abilities.

verbal expression, initiation, auditory comprehension

Motivation to verbalize, accuracy of sound productions

To improve relational play and expressive vocabulary of cognitively and communicatively delayed children. / / To enhance interaction skills with cognitively impaired adults and children.

ANIMAL-ASSISTED THERAPY

Work on the dog helping to retrieve specific toys that are linked in some way to patients' therapies ie for receptive /expressive language : ID objects, following one step commands. recasting what the dog did or didn't do, / I think there are two commun. behaviors embedded in answer above

traumatic brain injury, aphasia, language impairment, cognitive impairment, autism

Vocabulary /

Autism and cognitively impaired clients

increase of verbal expression in general; specifically, increased utterance length, increased occurrence of verbal initiations

Expansion of expressive language / Social Pragmatics / decreased dysfluency

Initiation of communication / Decreased anxiety

/ Fluency disorders / Adult language disorders

initiating conversation or requests; sensory integration

Fluent speech, reduced anxiety, increased MLU, increased engagement

Attention/concentration / Sequencing tasks / Pragmatics

increasing vocabulary, utterance length / increasing initiation attempts

Not sure...

Increasing speech production in those who already have a desire to communicate, Increasing desire to communicate in those who are reticent to communicate

Clients who have social communication issues. traumatic life experiences. relationship issues, traumatic birth experiences--regardless of their diagnosis

Introducing animals during therapy sessions may be helpful to reduce stress levels in clients (ASD, fluency, etc). Using hands-on experience language (i.e.. categories, part-whole, functions, etc) may be utilized with AAA or AAT.

Language expansion / Increasing attention span and focus time on task

Should the client "warm" to AAT, any targeted behavior could benefit from fluency to dysnomia to...

expressive communication (increased MLU and on-topic comments) / fluency

Selective Mutism, Syndrome impacted communications

Pragmatics for interacting with animals. Greetings. Vocal issues such as volume.

Appendix H

Responses to question 14: Is there anything else you'd like to share with us about AAT or AAA? Please enter your comments here.

Note. The responses shown were taken directly from the Qualtrics™ software and were left unchanged from their original condition in which the participants entered them onto the questionnaire.

ANIMAL-ASSISTED THERAPY

I have never experienced this nor have I read the literature about it so I really have no basis to judge.

Interesting study.

I've found very interesting seeing how children respond to trained animals.

Using animals in my private practice, when appropriate, has given my work an extra dimension and helped me to be a more effective therapist for many years.

Adding animals to therapy over the past several years has been fun and the effects of the presence of animals with adults and children is amazing. I am glad to see that AAT/AAA is beginning to get recognition by SLPs.

I love animals, and think overall, most people do too. They are relaxing and there is something universal about a cat or dog that makes people react more openly. Animals are not judgmental, and people who have had strokes and cannot communicate verbally respond well to animals. I've seen it first-hand with my cats. I would LOVE to learn more about AAT. Sounds like a fantastic idea.

No

I have seen people who do AAA do AAT - because data isn't happening doesn't mean it isn't happening- sometimes, for that reason, people are more organic in the actions. I recognize the importance of data and the importance of keeping some things just as real as possible. /

No thank you.

In the area where I have my private practice, horses and dogs are frequently used. Usually the animal involvement in the therapy plan is done by the physical therapist.

I believe using either AAT or AAA as a modality in traditional therapies will have effective and positive outcomes for the patient. However, the use of animals in therapies is somewhat controversial and not used widely in practice.

sounds like a great idea, but not for the work i actually do

Interesting concept, but not sure how it could be utilized widely across the profession...

I have never seen anyone use either in therapy. It is a fairly new concept for me with regard to speech-language pathology.

The challenge with AAT in my practice, or AAA, is that while many children may benefit from AAT or AAA, there is an equal number who are allergic to pet dander and/or for whom pets generate a feeling of anxiety (which would be a barrier to learning and processing).

I breed and train golden retrievers and I would love to be able to bring a service/therapy dog to school to work with my children. I think they would love it!

I look forward to hearing more about strategies

I have always wanted to look into this but was unsure about the safety requirements, demands on my facility and myself and how to choose appropriate clients and targets.

You have made me interested in this topic - I'd like to find out more about AAT as a tool for intervention.

Data on effectiveness is very limited because of poor study controls and inadequate numbers of well-described participants

I have always been interested in this area as a new and exciting direction for our field. It would be great as SLPs to be able to attain some type of training, licensure or certification as a provider of AAT.

Love dogs and understand their psychological contribution, but unsure how they might contribute specifically to communication disorders. I'm open, but need to be shown.

ANIMAL-ASSISTED THERAPY

Due to the great concerns for allergies, it seems restrictive for many

I have seen AAT work with children with autism and CP. Especially hippo therapy.

I haven't personally used it but have seen AAT used and I did not think it really improved outcomes. More focus was on the animal than on therapeutic tasks.

Physical Therapy and Occupational Therapy both use Therapy dogs effectively at our hospital. We also have a program for visitation with a handicapped cat. The patients respond well to the animals.

I'm very interested in learning more about the use of AAT and being involved in this type of therapy. Good luck!

Your survey is very biased in that I was not able to choose that I would not use this type of therapy. The survey assumes that I am in agreement with AAT or AAA which I am not until there is evidence that it is effective in treating communication disorders.

Think the evidence base for this stuff is pretty weak, and press and even ASHA pay too much attention to it because it seems "sexier" than regular approaches to therapy. I don't see it benefiting language as much as precursor requirements for communication - joint attention, intent to communicate, etc.

I have not seen research on the use of animals in therapy, however I have seen children's communication skills improve during HIPPA sessions. It is amazing. I would like to see research in this area.

I have never had direct experience with either, but children I work with have shown improvement in physical and emotional behaviors, which have aided in the improvement of language. I could assume that direct SLP participation in either AAT or AAA would have more of a direct impact on the improvement of language. The children have had interactions with dogs, horses, and dolphins; adults with dogs and cats.

I am unable to determine the benefits of AAT without research that would indicate specific outcomes, although I think this research would be valuable to pursue.

Difficulties finding funding to train the dogs and California school district's liability issues regarding dogs on campus.

I'd love to see more animals in therapy! I'd love to have my own dog certified to be a therapy dog too! Great idea for a study, thanks!

Including animals in treatment could be an excellent motivation for both children and adults across a wide range of communication impairments. Great idea.

Good luck with your research. Will we be provided with your results? I would be interested in seeing what others are doing and what the attitudes of ATT vs AAA in our peers. Thank you!

The way you have defined AAA (e.g., no specific goal) would not be defined as therapy at all, whereas AAT obviously is therapy. Motivation and context are essential elements in all types of communication therapy. With our population (adjudicated youth) the "third space" (AAT) made a dramatic difference. (See <http://www.asha.org/Publications/leader/2005/050927/f050927c.htm>) / / Currently, Lexercise.com uses therapy dogs to motivate dyslexic clients during teletherapy. Want to reward your client with a virtual doggie kiss? Here's how: Place a dab of peanut butter on a tongue blade or spoon and hold it just above the webcam. Call the dog to give the client a "kiss". The camera gets a close up of the dog's tongue. Kids love it and work hard to achieve the points they need to earn it! / / Good luck with your project! Sandie Barrie Blackley, MA/CCC, Lexercise Co-founder

It is challenging to get animals, especially bigger animals like dogs, into the schools (due to fears, allergies, various policies, etc.). It would be good to get more research done on the effectiveness of the use of ATT in the schools. We need research to support this as an evidence based practice that we can take to our administrators.

I have not read anything on this before. I have worked in nursing / Homes that have the Eden program with animals as pets and have / Seen pts with aphasia talk to the dog when I couldn't get her to talk.

It would be important to have an animal training expert train any animals that my clients come in contact with, especially for liability purposes . There must be don't sort of asha requirement or state requirement to make sure the clients are safe

No

I think it is a fad.

I haven't seen enough research information to comment on whether these are or aren't good techniques. / / I believe that AAA makes more sense on its face, e.g. having an animal present as a generally pleasant experience, a spontaneous responder to some kinds of human communication (reinforcer), and a shared topic for interaction between the humans. / / A colleague of mine (non-SLP) is a dialect coach for actors, and her very friendly little dog is often present in sessions, sitting in client's laps if they tolerate that, lightening the atmosphere, and providing general reinforcement. He has been nicknamed "the dialect dog." This would be AAA, I guess? / / Since animals do not communicate in words, it is hard to understand how they might be able to actively (AAT) elicit more or better output, vs a human role model. / / Overall, I would guess that the time spent training the animal, clearing health regulations, dealing with transportation, etc., would be better spent in training better clinicians. Just because AAT can be effective with some patients, doesnt mean its the best use of limited healthcare resources. / / But I'm not opposed on principle: just skeptical (=willing to be proved wrong). / /

I took courses from AHA in hippo therapy (using horses in therapy practice) and used it in my job as a speech language therapist at a Therapeutic Riding Center. It was the most effective environment I have ever worked in for helping clients meet treatment goals.

I have attended ASHA-approved trainings on AAT, volunteered with a therapeutic horseback riding program, and observed/participated in co-treatment with a physical therapist using a trained therapy dog for both AAA and AAT.

I'm not really sure that AAT is that much more effective than AAA, as I would assume during either situation, the SLP would have certain targeted goals in mind for the interaction, regardless of whether the animal was specially certified, etc. I don't think it needs to be that complicated, and that similar results for the client could be attained from either AAT or AAA. I would be interested in studies demonstrating AAT as more effective than AAA in speech-language pathology.

Your survey is worded in such a way that it already assumes an SLPs willingness to use AAT or AAA. While I'm not opposed to it for others, I would never use it for myself. I'm not a big animal lover so it's not something I would choose. I also wouldn't choose to work in a workplace that uses AAA or AAT. I am scared of dogs.

I would think there would need to be a data base of approved animals for this system to work.

No

Since I've had very little experience using AAT , but have seen hippo therapy , I would be interested in learning more about the subject.

Speech language pathologists are now able to specialize. AAT and AAA, though potentially helpful, are not necessarily interventions that all slps would wish to engage in, and could represent specialized areas of certification. A weakness of the survey was the assumption that all slps would wish to engage in therapy involving animals. So, there were no questions asking whether slps would wish to participate in this type of therapy. Moreover, there are clients who are not animal lovers and I have witnessed older clients-patients, for example, reject AAA - based activities.

Having an assistance dog has been a positive experience for myself as a professional, for my students and for other staff in the building.

As mentioned before, it is an added bonus to utilize AAA or AAT to promote interaction within the environment. It is outstanding to see children and adults becoming so proficient on iPads and computer assisted programs. It is sad to see them less interactive with the people around them. How sad to miss running and playing and talking about what is outside versus what is animated on a computer screen.

One must consider that there are patients/clients who do not like to be close to animals. If one did not like to be around animals before the stroke, the SLP would have to wonder if it would be an effective technique to encourage language after a stroke.

I have worked with other therapists who have used AAA or AAT, but have not used it myself. I appreciate using it as one more modality that can provide an authentic communicative interaction.

This is really a coincidence. Last Wednesday, our town's veterinarian asked me if I'd like her to bring one of her dogs to a session that I have with two 3 year old boys, one non-verbal, the other rarely verbalizes. She offered this service because she had heard that one of these boys, in particular, talked when her dog(s) was present. The vet had previously brought her dogs to our pre-school program. I couldn't believe the session. The boy who rarely spoke was using appropriate volume, 3-4 word utterances and even some pragmatics never observed before. For example, he referred to the other boy by his name. I realize that this was just one session, but I was impressed. One of the areas we were working on was picking a card that depicted something we can eat or ride, etc. With the help of the vet, Emmy, the dog, put her paw on an appropriate card. They followed suit.

I would like to see how it's specifically implemented.

Yes, / There is an AAT certification with horses Equine Facilitated Therapy which I think is crucial for SLPs to take. / The biomechanics of horses as well as best practices and the use of a horse is studied / extensively. Not every SLP should even be allowed to use a horse for therapy. / There is also some training needed for other animals such as a dog / Not all clients will benefit. AAT is just one tool

Thank you for your research interest in this area. Seems to have a lot of potential. I am wondering if animals as compensatory aids (i.e. assistance dogs) fits into AAT or if that application would be considered a different category?

No.

Like I mentioned before, I worked with a teenage girl who was labeled selective mute but with other issues as well (she was born without a corpus callosum) and when she was around animals, her communication became more appropriate and functional. It was amazing. I've also seen very troubled boys with language difficulties melt when around therapy dogs. I thoroughly believe in the power of animals.

Truthfully, I have no experience with AAT and don't think my answers on this survey are very valid.

I think animals are very motivating and motivation is key to learning.

Need outcomes assessment to verify efficacy.

Having my dogs in my office, whether it is for AAT or AAA, is one of the best things I have done. My clients respond to them in a way I could never get if it were just me. I get more productivity from kids because they get to say hi to the dogs at the end if they work hard. Dogs also provide a level of sensitivity, compassion, and total ignorance of disabilities rarely seen in humans. I think that promotes a feeling of safety and acceptance for clients to try new and difficult things.

I am looking forward to using my 1 year old lab as a therapy dog when she is a little more mature.

I was a volunteer puppy raiser for the national organization Canine Companions for Independence. (CCI.org). This organization provides service dogs to recipients free of charge. After this experience I have definitely thought more about the role of service dogs within our profession.

If you wish to contact me in person for a phone interview I would be happy to talk more. I have had great success with conducting this type of therapy. (801)493-969. Betg

I have seen some of the literature, I hope this continues to develop.

I would love to be a part of the research team!

Is AAT something that is available all over the country or more prevalent in certain regions?

I work in an acute inpatient rehab center and the pets are very effective in promoting participation. I can see where specific goals and activities could be facilitated using AST. However, we need to be careful in terms of allergies and infection prevention. NO cats!

2. I work in an elementary school. School administration is resistant to allowing animals on campus. I would like to know how other SLPs have been successful in getting school admin on board with using animals for therapy,

Sounds interesting!

I think it's a great idea to use all innovative strategies. We learn so much from animals...and they accept us as we are.

I have completed the Level I and II courses through the American Hippotherapy Association and will be taking the Hippotherapy Clinical Specialist Exam on Feb. 15, 2014. This exam is only for eligible SLPs, OTs, and PTs who have specialized training and experience with horses and how the movement of a horse, when used as a treatment technique, impacts the patient to facilitate increased motor, sensory, cognition, and communication skills.

Good luck. You're working on the fringe...

No

The power of animals to motivate is pretty amazing, and I appreciate you pursuing this in your studies.

Thanks for taking this on - it was a nice reminder for me! =)

If and when continuing education courses become available, I am in Oklahoma, thanks

Love this idea, keep it going both for inner city children as well as assisted care persons.

You gave me a great deal to think about.

Some schools have generalized therapy dogs, but I haven't heard of any AAT work done locally. Perhaps ASHA could help with some research or article that would further the cause.

ANIMAL-ASSISTED THERAPY

I like this idea and would be interested in learning more/

I currently volunteer with an organization in Virginia (Green Dogs Unleashed) that rescues, rehabilitates and trains special needs dogs (e.g. vision impaired, hearing impaired, physically impaired) to be therapy dogs to work with children and adults. AAT is not a specific goal of this organizations but AAA is and I would like to implement an AAT program with this organization. The benefit of including animals in therapy is huge and I am thrilled to see more interest in this topic.

Like any therapy tool, animals can be effective or not dependent upon the use. Dangers of using at include passing germs from one client to the next, dependence upon play rather than structured therapy, possible allergies or aggravation of asthma.

Are you able to share the results of the study when completed? I would be interested in results.

This is an awesome master's thesis. I would love to know what information you find out. I often wonder how many other SLPs use AAT in their practice.

I don't think that most small children have enough contact with animals. I've have tremendous success using animals in my therapy sessions -- children "light up" when animals are introduced and you often get more language in that interaction than you've seen in all the sessions leading up to that point.

No

I would be interested in learning more within this area.

The barrier to AAT I have encountered is opposition to animals in general in the Clinic by administration and/or peers.

I have attended one workshop on AAT and would like to incorporate it in my current practice. I am hoping to find a team in my area.

Interesting topic. I had never considered using animals in therapy.

I have not used AAA or AAT, but am very interested in further research/information.

I think it has great potential as a therapeutic intervention but I don't know of available trained animals available, particularly for a school setting.

Glad you're looking at this. Frankly, I hadn't thought of it as a s-l therapy tool. Good luck.

N/A

/ I have not read or observed this intervention much at all with my speech pathology peers; therefore, I was not able to have definitive opinions to some of your responses; I would need more information.

Great idea for a study. Look forward to seeing your results.

Two of the last three questions were difficult to answer - "is effective, is more effective" - Right now I would call it a cautionary practice that needs more research.

I think it is incredible and very successful.

I would be interested in the outcome of your survey as well as your thesis design and results.

We have used it successfully in our university clinic with individuals to increase expressive language.

I find it highly motivating for clients of all kinds!

I have observed remarkable results of individuals on the autism spectrum when utilizing AAT for communication purposes. I have also observed in SNF's the benefit of AAA in helping those that have been mute or fearful of their surroundings.

ANIMAL-ASSISTED THERAPY

I have experience with AAT, however, I recently began working with children with ASD and it crossed my mind that using animals might be a good way to elicit and motivate the population. I am not familiar with research to support this as a treatment but would love to learn more about what research says to support this as a treatment approach.

No other comments.

So excited you are exploring these options of therapy!

I have never used it/heard of it and would be interested in learning more about how to use it with children.

I strongly feel that utilizing animals in therapeutic intervention IS AN AMAZING AND SUCCESSFUL idea! Animals (and babies) bring out something in children and adults that is unexplainable, causing language to spark. I am all for it!

I am employed at a university and have found that Boomer has a positive effect on the graduate students. I have had one student who specifically came to my office to sit and pet Boomer when she was stressed. / / Also, this survey was sent to another faculty in our office but he forwarded to me because I am involved in AAT/AAA.

I don't really know much about this or it's efficacy during treatment but I'd be interested in learning more.

very interesting topic. Good luck on your study.

This is an exciting area to explore. I have had SO many clients get off to a smooth therapy start, make transitions, gain and maintain new skills and carry over new communication behaviors largely due to their comfort level with my therapy animals (2 dogs and 1 cat). People relax almost immediately, especially children, when there is a 'furry buddy' to relate to. Many times I hear "Hi Louis!" before I hear a "Hi" to me! Is this a worthwhile topic to develop? Absolutely! Good luck~

My experiences were when I worked in a rural, ranching and horse community. However, I currently work in a urban environment with less opportunities. I am also experiencing many administrators that won't allow animals in their schools due to allergies.

Never considered using animals in therapy but as a dog person (my family owns three) and a guinea pig person (we have 2), it's an interesting idea!

Have not used it but am seeing the benefits for a few community acquaintances. The concept makes sense. I could see many types of animals being used, but I personally would not want to care for the animals myself. I might team with someone who had the animals and learn to use the AAT or AAA techniques in collaborative settings but I don't have a personal desire to house and care for the animals myself at this point.

No

I believe the most effective speech and language intervention addresses functional objectives utilizing natural motivators from clients' most comfortable environments. For many clients (but certainly not for all) that may include beloved pets and animals in their world.

No

No questions, but I know animals have a special connection with special needs human beings. Keep up the good work.

Are there evidence-based studies that show that clients are able to improve their communication as a result of AAT/AAA?

Good luck!

ANIMAL-ASSISTED THERAPY

Opinions are impossible without peer reviews published research This is lacking in speech lang path to date

Love this research topic and feel it takes the "whole" person into account. I have seen patients who were so depressed they couldn't participate in therapy. We brought in their dog or cat, or had a visit from a therapy dog, and this kick-started their willingness to participate. Good luck with your project!

This is just something I have tried because the classroom teacher has arranged it for the therapy dogs to come in. Honestly, I have 60-70 students on caseload and I would find it difficult if I were having to arrange the "dog therapy time." / / I have no idea what this would look like in other settings and who would be in charge of training the animals, etc. I completely rely on the lady who brings her therapy dogs to us.

No. I am aware that many of my colleagues have used these methods in therapy with success; however I have not.

no.

Would love to see your completed thesis

It seems like a cost-benefit analysis needs to be considered along with more research at all levels. I know you mentioned that 'research suggests' ; however, it is important that this is rigorously designed studies that meet high levels of evidence according to ASHA. The cost of insurance and animal care and maintenance, i.e., the cost of the treatment, may exceed the costs for traditional therapy which would suggest it is unnecessary burden on families for outcomes that we are unsure of regarding treatment. / / it is important that empirically driven research and not value based research occurs for this line of treatment.

I was neutral on the statements regarding the effectiveness of AAT since it does sound good in theory, there is nothing I have had experience to say that it is better or worse.

Either format adds depth to the communicative experience for the kind of clients we work with. I have seriously considered adding this dimension to our clinic.

How would I know if AAT is an effective treatment for SLPI have no experience with it, but AAA certainly cannot be a treatment for SLP as it does not meet the criterion for a treatment.

I am curious about how AAT can be used in the field of speech pathology.

I was not able to enter answers to several questions because the survey would accept the touch response.

I would LOVE to work with dolphins!

Not really. Thanks for doing this.

No

I've worked as a volunteer with an AAT organization, and the SLP worked with the dog and child on a weekly basis. Saw HUGE gains, and it was a ton of fun. I highly recommend it!

Great research idea! I think a critical component is the comfort level of all the individuals working with the animals--therapists and clients alike!!

I am concerned about how the animals will be taken care of. / Being fed, exercised, rested, etc. it is a great idea to do research with other living things, but we as fellow living things need to think of the animals also.

Excellent research projects ahead in this area! Thank you for thinking outside of the box!

A very interesting area to explore and do more research on!

ANIMAL-ASSISTED THERAPY

I am interested in training and using a dog in therapy but am just overwhelmed by the amount of time and work it would take to get it going. I hope that after I retire in the next few years that I can do some PRN work and possibly utilize AAT.

Never had the opportunity to follow through with this type of treatment beyond "pet visits" to a SNF

Not a high interest area as the public school I work in would not allow animals in the building
Might be good for a group such as an aphasia group.

One must consider that some people have a fear of animals so this must be identified prior to any treatment. / Only certain pets can be used and the handler has to know the prt's temperament with various types of people (some dogs go after young children). Also, some pets act differently with certain accessories like a cane or wheelchair. Much goes into keeping the client safe.

Thanks and good luck!

The only issue I can think of is that some children on the clinic will be allergic. /

Good luck with your research! Wonderful idea!

I think the most important concept you can have about AAT (AAA seems largely useless as a means to achieving speech language progress in any data driven form) is that it remains about using your therapeutic knowledge and training to work toward specific goals in communication. The horse is an extraneous, highly motivating-for-the-client tool I use to achieve speech-language goals. High quality speech language therapy is high quality speech language therapy, whether in a school, a clinic, a home, around the community, or in the presence of a horse. I think designating hippotherapy or AAT as its own "discipline" is very dangerous and potentially undermining to the high standards of SLPs. There should be no "AATers" out there, there should be only full fledged and certified SLPs who choose to use AAT as one more means to the end of professional, effective, and functional communication development. That said, I choose to be a member of AHA (American Hippotherapy Association) because it supports goal driven, clinical approaches to therapy using horses. The benefit of working with and learning from other AHA members in different disciplines, such as PTs and OTs, as I incorporate horses into my speech therapy has been beneficial to my work across settings. Emphasis must be on the appropriate matching of the client to the horse's gait and personality, to SAFETY of client above all followed closely by the horse (or other animal) and staff, and to high levels of professionalism. There is always a trend in "new" therapy movements, and people jump on the bandwagon without the background knowledge and expertise to make it effective. If used for speech-language, AAT needs to be held accountable to the full scope and expectations of our practice. Therapists should never sacrifice gold standard therapy for a "fun, holistic, or emotional" based modality. AAT, however, done right, can be all those things!

Nope. Good Luck with your research.

Parents love having a tiny therapy dog present. It seems to relax everyone. We always have conversation about Suzy. They often want to know what she plays with, eats, etc. and all the kids want to play with her. She knows several commands both in spoken words and in ASL and kids love to tell her to "sit", "spin", "down" etc. I think we all have more fun in therapy with Suzy!

None

I think this is a very exciting direction to take your research. Good luck!

No

Availability of therapy animals is very limited

ANIMAL-ASSISTED THERAPY

In our practice our animals are primarily used for AAA which I think has a huge impact on so many of our clients. Although the therapist and clients don't have specific goals in the interactions, it is hugely rewarding for the kids, helps reduce anxiety and lets them feel positive and happy about the therapeutic process. They serve as great rewards for working hard in speech and OT. I can definitely tell you that a few minutes with Duncan will make kids work harder in therapy than any ipad app or toy!

I was trained in hippotherapy (ATA - now PATH) and have seen the positive effects of children with various disorders who are treated on the backs of horses. However, ASHA did not have any support at the time, and basically SLPs were encouraged to use horses (or other animals) simply as tools, just like one would use other therapy tools. But animals have a bigger impact on therapy than one can't get using traditional "tools". I wish there were more support for therapists who use animals in therapy.

Due to severe allergies and asthma I would not be able to participate in therapy that involved animals.

Good luck as you continue your education.

Thanks. Good luck with your thesis.

I personally used cats with my own daughter who recovered from a TBI when in high school. The cats purring calmed her and she is now a straight A student in college majoring in math and computer science. She has healed completely and the doctors have no answer as to how that happened. My husband and I feel that it was the cats and my SLP intervention.. Only slight issue when she went off to college she left the cats here lol...

We often used domestic animals, kittens, puppies, turtles, fish, ducks, one year we had a live thanksgiving turkey whose name was "This Years", pigs... within our Early Childhood programs to enhance language experiences with positive results. The classes that utilized these animals ranged from severe autism to cognitive delay, learning and language delayed children. It is a successful tool that I could see working if implemented with structure within a speech/language program.

n/a

I have read articles and blogs about the use of animals in speech & language therapy. I think animals have a way of connecting with humans that transcend the manner in which we humans connect with one another.

n/a

I have witnessed an increased effort and desire in the patient to communicate when a pet was involved in the treatment session. / Good luck with your thesis.

I'd be interested in learning more about AAT

I have no experience with AAT or AAA, but I have had clients who did horse back riding and it seemed to help them progress in many ways besides language output.

Good ideas to have animals take part in actual goal-directed therapy.

No

I think this is an interesting approach that could benefit some clients. It would be beneficial to have more dissemination of research on this topic. I am not an animal person, so I don't see myself endorsing these strategies but I know other SLPs who would be great at it.

Experience has shown positive results from those I have used it with

ANIMAL-ASSISTED THERAPY

My son has participated in hippotherapy (therapeutic horseback riding) for several years. The facilitator was a PTA. Our main goal was sensory integration but she also worked on fine motor and language. At my therapy center, I regularly invite the group Bunnies in Baskets which are certified therapy rabbits to participate in our family events. I would like ASHA to offer courses in this area.

Good Luck with your thesis.

Remember that AAA in its own rite can be very effective as well...sometimes that is a great mode for reducing a person's stress or other emotional barriers that make therapy less successful. Food for thought if you ever extend your study.

I have seen how patients/clients respond to animals. There is a trainer at one of the schools where I provide therapy and she uses her dog in interactions with the children. I do not believe that it is AAT (so probably AAA). So, I think that anyone who has a desire to use animals which are trained to be a part of therapy, should pursue that avenue! I, personally, do not have the desire to have to take care of the animal(s) so that they could be a part of therapy - lots of allergies in my family. So, keeping an animal would not work for my family. / / Good luck with your thesis!!

/ Subjects have to like animals

I have had at least one patient who came to me after seeing another therapist who utilized an animal as part of her therapy. The patient felt she and the therapist talked to much about the animal, and that it was a distraction from her progress. She felt the sessions were more social than therapeutic.

I think this is something that has been missing in our field. I graduated in 2006 and this area / was never taught or even spoke about! I have seen the positive impact of / animals of all types including snakes so this is dear to my heart! Good luck / with your thesis!

I have a dog that I enrolled in a therapy dog course and trained for a year. Unfortunately, after taking a maternity leave, I have not had a chance to complete her evaluation. I am very interested in Animal-assisted therapy, as I've used a turtle in the past and found it to be very beneficial. Any information you discover or share will be greatly appreciated. Wonderful topic selection for your thesis!

Animals have such an awesome potential to positively affect others and it has benefited me greatly as well!! Animals make a great ice breaker!!

I have no knowledge of the effectiveness of either AAT or AAA so could not give an opinion

I think that the nature of AAT and AAA are difficult to incorporate in a public setting due to the recent surge in allergic reactions in students. We are no longer allowed to bring animals to the educational setting due to allergies in students and adults. Very unfortunate for all involved. I actually had a student that was hospitalized due to contact with a topical application used on a horse. Very scary. The dander, feed and bedding also cause issues for our students and adults with respiratory issues.

My PT colleagues have started up a hippotherapy center. It interests me since I have a horse, but the training to become a hippotherapist is more than I have time for. AAT might be a nice way to merge these interests.

No

AAT like any other new therapy would have to be implemented by skilled SLPs and the method subjected to research concerning its effectiveness.

no

Overview of research. Use in ASHA leader would be useful

NA

I love animals and do believe they have healing powers, with more research maybe we can understand more how to harness this to help our patients more.

..

Thank you for the opportunity to be part of the study. I have never heard of AAA or AAT and am glad that I received information about this. One of the reasons that I selected "dogs" as helpers for AAT is because I have a severe allergy to cats, horses and birds. I think it is possible to use those animals in tx too.

Thank you for choosing this topic. Hopefully there will be an increase in training and use of animals for AAT.

From my experiences with Jake and his interactions, I would say that animals are very perceptive of human emotions. Jake could sense fear which made him retreat from interaction and sometimes growl or bark so I stopped allowing him to come to the office until we could take him through a canine good citizenship training necessary to certify him as a therapy dog. / / With dogs, I think this training is crucial to prolonged involvement of an animal in an ATT or AAA program.

Best wishes on completion of your thesis.

I was usually winging it when using hippo therapy. would be interesting to see what others did!

I have always taken my dogs with me to therapy. This might be considered AAA, not AAT. I never found that it increased desire to communicate in those who were reticent to communicate (i.e., kids with autism). In fact, in some cases, the kids were frightened of the dogs (small, quiet, very gentle dogs) and I had to put the dogs in another room. With kids I worked with who had childhood apraxia of speech, they often loved talking to the dogs, but then again, once I taught them to speak, they loved talking to anybody!

In doing this survey, I would want to correct my response from a previous screen and no be able to get there, and possibly loose the screen that I had been on. / / Sally

I have also worked with special needs students/adults during special olympics (equestrian) where general improvements in balance, self-confidence and communication (listening comprehension) was observed. Do you envision a training program for animal and SLPs , such as, guide dogs, will be utilized?

Interesting to hear more about this concept I've always have had dogs most of my life and when they interact with kids of the elderly amazing things happen because it's a relaxing no threatening situation!!! Best of luck to you with your research ! / / Victoria B. Penn MS CCC-SLP / SIG DIV 13 Swallowing Disorders

AAT would be very much on a case by case basis as I have had clients on the extremes of loving all animals to being petrified of all animals. Where indicated, I could see benefits to a trained interaction.

I see AAT as possibly impacting the development of communication skills in people with autism, apraxia, and fluency disorders but I would like to see more research on the subject.

I think AAT is a great idea and I have seen, in the brief time I've been a part of it, significant changes and progress in several individuals. That observation was enough to convince me that AAT is an invaluable way to consider doing therapy.